

<https://www.esipfed.org/lab/funding-opportunities/2020-fall-esip-lab-request-for-proposals>

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Project Details

Name of project: Developing an Environmental Enforcement Data Portal for Grassroots and Congressional Action

Project lead and contact details: Kelsey Breseman, ifoundthmeaningoflife@gmail.com

Project partners and contact details: Lourdes Vera, L.vera@northeastern.edu; Eric Nost, enost@uoguelph.ca; Sara Wylie, s.wylie@northeastern.edu (All project members are part of the Environmental Data & Governance Initiative, an ESIP Partner)

Proposed start and end date: March 2021- August 2021

Budget Requested: \$10,000

Item	Amount
UX research to inform web portal design	\$4,500
Build web interface based on UX results	\$5,000
Presence at ESIP summer meeting	\$500

Project Outline

Project description:

Vital data about federal environmental enforcement actions against facilities that pollute the soil, air, and water is currently available but largely inaccessible in the U.S. Environmental Protection Agency's (EPA) Enforcement and Compliance History Online (ECHO) database. **In this project, we will build a web portal to share accessible data tools so the public can use ECHO data, to answer questions about polluting facilities in their areas of interest and draw attention to their findings.** EDGI has been working for a year on the Environmental Enforcement Watch Project with data analysts, nonprofits, and community groups to develop well-documented and open source cloud-based Jupyter Notebooks that make ECHO data readily accessible by zip code, hydrologic unit code (to assess watersheds), state, and congressional district. **This project makes public for the first time a partner-hosted database that stitches together several of EPA's datasets, opening up a more direct pathway to query for data science questions around the enforcement of environmental regulations. Our web portal will include new Notebooks that tutorialize how to access and query our database, and will create intuitive access to our existing Notebooks.** This includes using UX testing and iterative

design to make the Notebooks more readable at a novice level and to fund a web developer and web designer to expand our existing website.

Project objectives, significance, and impact:

- *Learning objectives:*
 - Discover and prototype effective ways to engage the public with environmental enforcement data by conducting UX research and developing an interactive website to make the data and analytics more accessible.
 - Develop tutorials to teach the general public how to use a Jupyter Notebook to retrieve ECHO data and generate reports for their own use.
- *Significance:*
 - There has been a continuous pattern of insufficient enforcement of the nation’s environmental protection laws over the past 20 years. Accessible data on environmental permit enforcement means communities can take their concerns into their own hands and present evidence of insufficient enforcement to their elected representatives and the media.
- *Impact:*
 - Demonstrate and prototype open source software for a more citizen science and community-based approach to environmental oversight than existing portals offered by the EPA.
 - Invite members of the public to engage with environmental science data, letting them ask meaningful questions even at a novice level of data science and form critical questions of data quality that are often glossed over by the time “results” reach the public.

Description of key project steps and timeline:

Month	Steps
May	<ul style="list-style-type: none"> ● Gather resources and complete detailed project plan ● Hire UX researcher and designer ● Select key user groups for UX study
June-August	<ul style="list-style-type: none"> ● Hire web developer

	<ul style="list-style-type: none"> ● Designer drafts prototype designs and begins to test designs with key user groups ● Web developer begins to implement core features
September	<ul style="list-style-type: none"> ● Implement the staged website with final UX testing and iteration ● Release website to the public and alert media

Description of additional funding currently supporting this work:

- Code for Science and Society Virtual Events Fund—\$20,00 for a project co-coordinator and outreach and accessibility coordinator as well as some coordination and accessibility web tools.
- Packard—Provides partial salary for the Data Program Lead, who will coordinate this project, and for the EDGI administrator who manages our budget, wages, and communicates with our fiscal sponsor.
- Doris Duke—Provides partial salary for the Data Program Lead, who will coordinate this project, has provided funding for co-coordinator.
- EDGI is also proud to have dedicated volunteers involved with this project.

Outreach

What groups/audiences will be engaged in the project?

- Environmental Justice groups, environmental organizations, broader publics, data scientists, academics, and journalists. We will use our existing contacts with these groups, many of whom have already participated in events featuring our Notebooks.

How will you judge the project’s impact?

- Whether this work is covered by the media and published as news articles or mentioned in op-eds.
- Reports by congressional district are delivered to elected officials’ offices and we receive responses from them.

- Numbers of: community groups participating; environmental justice organizations participating; website visitors and engagement (web statistics).
- Non-coders successfully complete notebook tutorials.

How will you share the knowledge generated by the project?

- We will publicize the portal to members of the media with whom we have existing positive relationships, as well as using our existing blog & social media channels to publicize, and reach out to partners to share.

Description of *who* (agencies/individuals) should be aware of this project, i.e. potential outreach targets:

- EPA, particularly the group that works on the ECHO website (we have met with them several times)
- Media, journalists including at Grist, Society of Environmental Journalists
- Communities and other organizations: ESIP, Data4Justice, Sunrise Movement, and more.

Project Partners (as applicable)

Description of project partners (agencies/individuals) and their involvement:

- Geospatial Center, Stony Brook University: mirroring, hosting, & piecing together disparate databases made available through ECHO—building this pipeline was part of a prior grant, it automatically updates (weekly) an SQL-queryable database that our Notebooks rely on.
- Northeastern University: some activities incorporated into coursework

How will this project engage members of the ESIP community:

- Workshop at summer ESIP meeting in which we introduce the tool & conduct user research, as ESIP members are one of the user groups we would like to use this eventual tool
- Discussion/potentially design review of portal project at ESIP Stewardship Cluster meeting