The National Academies of SCIENCES ENGINEERING MEDICINE
GULF RESEARCH PROGRAM

Capacity Building 1 Final Report

Project Title: Building Scientific Literacy and Resilience through Community Citizen Science in the Gulf of Mexico
Award Amount: $157,750
Awardee: Public Laboratory for Open Technology and Science (Public Lab)
Award Start Date: 05/01/17
Award End Date: 10/31/18
NAS Grant ID: 2000008105

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Project Key Personnel:
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I. PROJECT SUMMARY (from proposal)

Public Lab will extend its "community citizen science" programming to residents of New Orleans, Biloxi, Mobile, and Pensacola to build a collaborative network capable of collecting and using data to advocate for a clean environment and resilient communities. Public Lab defines community citizen science, a subcategory of citizen science, as community-led scientific exploration and investigation to address community-defined questions, allowing for engagement in the entirety of the scientific process. Unlike traditional citizen science, Public Lab's approach emphasizes community ownership of research and working together in scalable networks to encourage collaborative learning and civic engagement.

Partner communities will engage in a series of hands-on workshops to increase their scientific literacy by undertaking collaborative approaches to answering local environmental questions. In order to be responsive to community-identified priorities, workshop topics will be determined by residents based on a needs assessment. Public Lab expects workshop topics will include a selection of the following:
- Monitoring wetland health using aerial photography;
- Documenting water contamination and point-source pollution;
- Measuring flood water severity and local impacts;
- Working with stakeholders to advocate for healthy communities.

The project will build a cross-community network, leveraging Public Lab's existing online infrastructure to allow participants to share research, ask questions, and collaborate. The project will culminate in a regional gathering where participants will come together to share their work and build partnerships. Public Lab will use an evaluation framework developed with University of California-Davis and the Fund for Shared Insight Net Promoter System to understand the impact and replicability of the project.

II. PROJECT SUMMARY (from final report)

This Public Lab project supported local groups across the Gulf facing environmental challenges related to climate change, flooding, and industrial pollution. The major goal was to work with groups in the greater New Orleans area, Biloxi, Mobile, and Pensacola on a community citizen science project of their choosing, as directed by the community. Groups engaged in research projects exploring local issues such as stormwater management, hurricane-related flood pollution, algal blooms, and water access. Through trainings on simple approaches to environmental monitoring and documentation, groups were able to engage in accessible monitoring methods that they worked to develop and refine. The project emphasized the expertise of community members, and introduced collaborative ways to document, report, and share environmental concerns.

Over the course of the 18-month project, Public Lab was able to work with over 20 partner groups, supporting nine community citizen science projects, and engaging over 500 people. Groups across the Gulf Coast were connected to each other, collaborating on ideas, problem solving, and networking. They also connected with Public Lab's online community, providing a space for participants to build partnerships, share research, ask questions, and collaborate with people in different places and with different expertise. Overall, this project supported a region-wide increase in scientific literacy, an understanding of accessible environmental monitoring techniques, helped communities address local environmental challenges, and built an active and informed network of practitioners across the Gulf Coast.

III. PROJECT RESULTS

Accomplishments

In towns across the Gulf of Mexico, coastal communities are increasingly impacted by environmental problems and crises, both acute and chronic. Issues like the Deepwater Horizon Disaster, disappearing barrier islands, and danger from tropical storms and hurricanes lead to a hampering of economic activity, and challenges to the continuity of local culture and ways of life. These problems have become exacerbated by climate change, as weather events become more severe, and previously habitable areas are inundated by rising sea levels. Concerned community members often lacked the tools and skills needed to understand, document, and measure these changes in real time. Through education and collaboration, this project helped communities address environmental challenges, helping them to share data across a network of community citizen scientists, and to advocate for improved environmental conditions with local and regional stakeholders.

While Public Lab has worked for years to support use of the tools and methods of community citizen science, we previously lacked the capacity to fully support projects in the Gulf Coast outside of the greater New Orleans area. Fully supporting projects meant working with groups from goal setting and visioning, through data collection, to information sharing and action. In goals set in our grant application, we aimed to support four projects across the Gulf Coast, and anticipated working with six to ten partners and about 150 people.

From New Orleans to Pensacola, the projects done by local partners explored topics ranging from stormwater and saltwater intrusion to hurricane flood pollution, algal blooms, and water access. These

projects were based on the concerns and interests of local residents. Throughout the process, they not only learned to use community citizen science methodologies, but they also modified techniques, expanded upon projects in other areas, and collaborated, bringing new people in and learning from the experiences of others. Over the course of the 18-month project, Public Lab supported nine community citizen science projects, worked with over 20 partner groups, and engaged more than 500 people, far exceeding the initial expected project reach.

Through this project, participants gained an increase in scientific literacy: they learned to frame local environmental issues into researchable questions, to research existing environmental data, to contextualize local knowledge in qualitative environmental exploration, and to work with accessible monitoring techniques for further data collection. This project also produced an increase in outreach through environmental education: projects featured participants working with youth on water quality exploration, and in informal adult education strategies, such as drafting pamphlets and organizing workshops. Additionally, participants learned to exercise environmental decision-making power, engaging with local authorities and elected officials in management questions, and exercising network capacity building through outreach to diverse stakeholders.

Implications

As a result of this project, a more robust network of community citizen science practitioners has grown across the Gulf Coast. Participants are better able to address their environmental concerns and compel others to join their efforts. New partnerships and collaborations were formed, often between people working in different fields and regions. People have collaborated on organizing events, hosting workshops, monitoring, and sharing learning experiences. Exploration and research conducted by participants have increased the data available on local environmental issues, and expanded upon the usable methods for people to engage in further exploration along the Gulf Coast, and more broadly for those interested in community citizen science. Many of the projects are still ongoing, as groups continue to work on new rounds of data collection, use the data to change local policies and practices, and share about issues important to their communities and broader environmental health.

Public Lab has built significant relationships through this project, and has been a network connector for many groups working on similar topics, in the Gulf region and around the world. Because of this work, we have also grown in our ability to support projects throughout their full life cycles, through scoping, data collection, and civic action. By developing more robust support materials to help groups develop their research questions and project designs, we have expanded the materials and resources available for others to use, and improved in our ability to support projects from a distance. The project has also helped Public Lab to build out new methods for community citizen science monitoring and to explore low-cost tools for examining different questions related to pollution monitoring and land change. For example, we have further developed low-cost water quality monitoring resources, and methods for remotely using reporting tools in disaster response monitoring, as seen in the methods built out in response to Hurricane Harvey pollution events. Through community citizen science projects, such as community education support materials and direct action on community land management, we have also grown in our ability to support various types of civic action.

While citizen science as a field has been around for a number of years, community citizen science puts organizing, facilitation, and creating social bonds and networks at the center of the scientific process. It is a people-centered science. The projects that were accomplished during this award period resulted in deeper community relationships, between people and the environments in which they live. For instance, before the algae bloom and the Indian Creek sedimentation runoff mapping events, participants spoke to their concerns on the issue and their lack of ability to collect and share concrete evidence about the problems with neighbors and local officials. The mapping events helped them, for the first time, to create visual, concrete data on these problems, changing and expanding the ways in which they were able to discuss and address the concerns they had. The networking and conversations that happened at both of these in-person gatherings also led to new project exploration, as participants at the sediment runoff event started exploring the idea of using mapping to track restoration projects, and traveled to Mississippi to learn from groups who do restoration monitoring work. Similarly, in seeing the accessible mapping methods, a participant in the algae mapping group started to explore the use of low-cost microscopes to talk about water quality issues in Lake Pontchartrain with students at Tulane University.

Public Lab has taken the model of citizen science and refined it to speak more clearly to the priorities, local expertise and knowledge, and abilities of project participants. There are many missed opportunities in our traditional knowledge production system--not only for onboarding people into the knowledge process, but in actual creation of knowledge itself. We are demonstrating a new model for science that builds the capacity of community members to learn collaboratively, collect independent data substantiating their environmental concerns, and engage in civic action around those concerns. When people are able to speak out with local knowledge and their community-created scientific data, they are better able to advocate for the local environments in which they live.

Unexpected Results

This project gave Public Lab the capacity to support groups in the Gulf region we have never had the capacity to work with before. For years, we have shared conversations and ideas, but without consistent, dedicated resources, including personnel, to support these projects, we were unable to realize the potential of our work across the Gulf before the implementation of this project. In project scoping, we anticipated working with six to ten partners, and about 150 people. Instead, we supported nine community citizen science projects, worked with over 20 partner groups and engaged more than 500 people.

We also expected the community citizen science concepts to inform new projects for local groups, but found that they were more inclined to use the methods as ways to expand on existing projects. This made the projects more sustainable in the long run, and more meaningful for each group. For example, Mobile Environmental Justice Action Coalition (MEJAC) in Mobile implemented a new community science component to the project they have been working on around developing and preserving the Africatown Blueway. The mapping project and conversations around water quality exploration helped them to engage more youth, talk with elders about land change over time, and engage university students in hands-on activities around local water access points. In another example, an organizer at Recharge New Orleans, who has been running rain barrel building workshops with community members for the past seven years, started working community science methods into her workshops. The handmade rain gauges gave her a way to engage audiences in not only the action of reducing

stormwater runoff, but also to communicate the discrete variations in local weather events not captured by national weather reporting systems that were causing localized flooding.

Regarding logistics, another unexpected result was the cost of in-person events. We anticipated that these events would be more expensive, especially since we would be hosting them in places where we had not been before, but we found that our community partners were extremely resourceful and kept event costs low by finding other partners to help support needs such as event space and transportation.

Project Relevance

The following audiences would be most interested in the results of this project:

- Researchers
- Educators
- Community Leaders
- Local Government Officials
- State Government Officials
- Non-Profit Private Sector

Community leaders have been using the results of the project in education, publications, and at community meetings. They see the techniques of community citizen science as accessible and low-cost, and useful in advocating for changes they want to see in their local communities. For example, a mapping project in Pensacola allowed community leaders to share methods for capturing data on runoff events into Indian Bayou, and report on them. Local government officials are interested in the projects as they relate to the community's vision. These projects have led them to enact best practices for managing local environmental challenges, such as the storm drain marking project in Pensacola, and helping to share the conversation about designating land use along rivers for increased public access. Nonprofits have found the results of this project useful for sharing with each other to learn about how science can support goals set by the community, using approachable and accessible methodology. For example, the Turkey Creek water quality project has led to other nonprofits and educators exploring water quality monitoring kits that are accessible for youth education.

Education and Training

Number of students, postdoctoral scholars, or educational components involved in the project:

- Undergraduate students: 8
- Graduate students: 0
- Postdoctoral scholars: 0
- Other educational components: 511

Participants included around 20 youth and 490 adults. This group represented a broad range of backgrounds and expertise including scientists, community organizers, educators, and others.

IV. DATA AND INFORMATION PRODUCTS

This project produced data and information products of the following types:

- Data
- Information Products

- Curricula for education and training
- GIS applications
- Other: wiki pages detailing project procedures and outcomes, how-to guides, research notes, blogs, maps and an issue of the Community Science Forum

DATA

Data Management Report:
See attached Data Management Report.

Relationships between Data Sets:
The data sets are from different collection dates. They are all aerial images, and the maps built from those images.

Additional Documentation Produced to Describe Data:
We produced wiki pages detailing project procedures and outcomes, how-to guides, research notes, blogs, maps and an issue of the Community Science Forum.

Other Activities to Make Data Discoverable:
All information products developed by Public Lab are available free to anyone via the Public Lab website, publiclab.org. Materials are developed under open source licensing, meaning people can freely access, share, and adapt them. In fact, these activities are all encouraged, with the hope that these uses will then be shared back with the Public Lab community so others can continue to learn from them. Materials available include workshop structures people can use to engage others in similar work where they live, as well status updates about recent project developments so people can follow along. We also share materials and workshop progress during meetings and web calls, as appropriate. We have been using the Public Lab website to engage people in discussing questions throughout the project.
Other examples of these information products can be accessed through the following URLs:
https://publiclab.org/tag/nas
https://publiclab.org/notes/stevie/11-14-2017/host-a-goal-setting-workshop
https://publiclab.org/wiki/issue-brief
https://publiclab.org/notes/stevie/01-23-2018/workshop-draft-an-issue-brief-with-a-group
https://publiclab.org/notes/stevie/11-14-2017/host-an-issue-brief-workshop

Sensitive, Confidential, or Proprietary Data:
N/A

INFORMATION PRODUCTS

Information Products Report:
See attached Information Products Report.

Citations for Project Publications, Reports and Monographs, and Workshop and Conference Proceedings:
N/A

Websites and Data Portals:
N/A

Additional Documentation Produced to Describe Information Products:
We produced wiki pages detailing project procedures and outcomes, how-to guides, research notes, blogs, maps and an issue of the Community Science Forum.

Other Activities to Make Information Products Accessible and Discoverable:
All the information products are published on publiclab.org. Several of the articles have also been published in Public Lab's printed publication, the Community Science Forum. These publications are made available to community partners who were involved in the projects to distribute to others. Many of the publications have been featured on the Public Lab blog and distributed to our 16,000+ person list of social media followers and newsletter subscribers.

Confidential, Proprietary, Specially Licensed Information Products:
N/A

V. PUBLIC INTEREST AND COMMUNICATIONS

Most Unique or Innovative Aspect of the Project
The most unique aspect of this project is the diversity of community partners and individuals who have participated in community citizen science projects. From educators to elected officials, concerned local citizens to visitors from out of state, and youth in their early teens to elders in their nineties, this project has engaged people from many backgrounds and experiences. In projects across the Gulf Coast, we saw teachers work with local policy makers on techniques for mapping a water outflow site, activists work with artists to design artwork for storm drains to prevent dumping, and university scientists reach out to local residents to understand local knowledge of access to an important community river. These groups also started to learn from each other. A group in Pensacola traveled to visit a group in Gulfport, after learning they had a shared struggle with restoration projects that have not aligned with local needs. A former stormwater project in New Orleans created the basis for a new project in Pensacola, mutually sharing lessons and techniques. Over the course of the project, over 500 people participated in community citizen science activities across the Gulf Coast, connecting to their local issues, and to each other.

Most Exciting or Surprising Thing Learned During the Project
The most exciting thing we have learned is that, given the opportunity, people truly see community citizen science as part of their efforts in telling the stories of their local communities, and sharing their concerns and visions for the places they care about. While some community citizen science projects supported under this grant were unique in that they were the first type of exploration of their kind in a region, many others saw the tools, technologies, storytelling, and network capacity-building

opportunities of the project as ways to bolster issues they had already taken up from other angles. These projects became extremely dynamic and powerful.

Most Important Outcome or Benefit of Project

The most important outcome of this project has been the growth of community science practitioners across the Gulf Coast. The more people ask questions, reach out to others, engage in community collected and documented data, and advocate around what they see and the changes they strive for, the better prepared we are to face the challenges of our changing coastal ecosystems.

Communications, Outreach, and Dissemination Activities of Project

Public Lab has communicated information about this project on: publiclab.org, Twitter @PublicLab, Instagram @PublicLab, and Facebook at facebook.com/PublicLab. With partners we have produced an issue of the Community Science Forum, our printed publication. Articles have been shared widely online and on social media, including:

Educating a New Generation of Advocates: https://publiclab.org/notes/joyofsoy/10-24-2018/educating-a-new-generation-of-advocates

The Africatown Connections Blueway: Legacy and Rebirth: https://publiclab.org/notes/joyofsoy/11-09-2018/the-africatown-connections-blueway-legacy-and-rebirth

Fighting the Flood: Community Activism and Education in Pensacola: https://publiclab.org/notes/joyofsoy/11-09-2018/fighting-the-flood-community-activism-and-education-in-pensacola

Recharging New Orleans: Rain Barrels and Environmental Justice: https://publiclab.org/notes/joyofsoy/11-06-2018/recharging-new-orleans-rain-barrels-and-environmental-justice

Sustain the Nine: Resilience in the Lower Ninth Ward: https://publiclab.org/notes/joyofsoy/11-09-2018/sustain-the-nine-resilience-in-the-lower-ninth-ward

Data Report

DataType	DigitalResourceType	Title	FileName	Creators	PointofContact	PublicationYear	RepositoryName	DOIorPersistentURL	Keywords	Publications
Geospatial	Image or visual data	St Bernard Wetlands Assimilation Project Map	https://mapknitter.org/maps/oxidation-pond--2	Anonymous	Project PI	2017	MapKnitter and Public Lab	https://mapknitter.org/maps/oxidation-pond--2	aerial photography, citizen science	NA
Geospatial	Image or visual data	St Bernard Wetlands Assimilation Project Map	https://mapknitter.org/maps/river-bend-observation-pond-st-bernard	Lewis, Stevie	Project PI	2017	MapKnitter and Public Lab	https://mapknitter.org/maps/river-bend-observation-pond-st-bernard	aerial photography, citizen science	NA
Geospatial	Image or visual data	St Bernard Wetlands Assimilation Project Map	https://mapknitter.org/maps/violet-oxidation-pond	Haines, Bill	Project PI	2017	MapKnitter and Public Lab	https://mapknitter.org/maps/violet-oxidation-pond	aerial photography, citizen science	NA
Geospatial	Image or visual data	Post-Harvey NOAA Analysis Images	https://docs.google.com/spreadsheets/d/12ZMti2lH4sST6Apzp_DeCQld4z4ioTmm7LdFiF8fK4A/edit#gid=1	Warner, Eleanor; Eustis, Scott; Rochon, Gilbert; Lewis, Stevie; Simms, Jessica	Project PI	2017	NOAA and Public Lab	https://docs.google.com/spreadsheets/d/12ZMti2lH4sST6Apzp_DeCQld4z4ioTmm7LdFiF8fK4A/edit#gid=1	aerial photography, citizen science	NA
Geospatial	Image or visual data	Hog Bayou/Africatown Map	https://mapknitter.org/embed/hog-bayou-mobile-county	Lewis, Stevie;	Project PI	2017	MapKnitter and Public Lab	https://mapknitter.org/embed/hog-bayou-mobile-county	aerial photography, citizen science	NA
Geospatial	Image or visual data	Turkey Creek Images	https://drive.google.com/drive/u/2/folders/1AM6GQlj2yRbyht0kQqw0E-nE9KURI6b3	Lewis, Stevie; Green, Delaney; Page, Howard; Hay, Crystal; Riley, Kris; and 12 11-12 year old students	Project PI	2018	Google Drive and Public Lab	https://drive.google.com/drive/u/2/folders/1AM6GQlj2yRbyht0kQqw0E-nE9KURI6b3	aerial photography, citizen science	NA
Geospatial	Image or visual data	Turkey Creek Map	https://mapknitter.org/embed/turkey-creek--2	Lewis, Stevie;	Project PI	2018	MapKnitter and Public Lab	https://mapknitter.org/embed/turkey-creek--2	aerial photography, citizen science	NA
Ecological/Biological	Data set	Turkey Creek Water Quality Data	https://publiclab.org/notes/Delaney/05-04-2018/water-quality-testing-at-turkey-creek	Lewis, Stevie; Green, Delaney; Hay, Crystal; Riley, Kris; and 9 11-12 year old students	Project PI	2018	Public Lab	https://publiclab.org/notes/Delaney/05-04-2018/water-quality-testing-at-turkey-creek	water quality, citizen science	NA
Geospatial	Image or visual data	Indian Bayou Images	https://drive.google.com/drive/u/2/folders/1NZYHR4Q756tVfJ81puo3OcQTqH4-5mxX	Pino, Melissa; Albrecht, Barbara; Caffrey, Jane; Shippee, Steve; Casson, Mariah; De Jesus, Rebeca; Douthat, Thomas; Douthat, Thomas; Walker, Judy; Taylor, Don; Casson, Kimberly; Ogden, David; Ogden, Lynn; Russell, Rowena; Goodhart, Traci; O'Connor, Rick; Cain, Savannah; Smith, Ashlynn; Wagley, Christian; Lewis, Stevie	Project PI	2018	Google Drive	https://drive.google.com/drive/u/2/folders/1NZYHR4Q756tVfJ81puo3OcQTqH4-5mxX	aerial photography, citizen science	NA
Geospatial	Image or visual data	Mapknitter map of Indian Bayou	https://mapknitter.org/maps/indian-bayou-map	Lewis, Stevie	Project PI	2018	MapKnitter and Public Lab	https://mapknitter.org/maps/indian-bayou-map	aerial photography, citizen science	NA
Geospatial	Image or visual data	Mapknitter map of Indian Bayou Marsh	https://mapknitter.org/maps/indian-bayou-marsh	Caffrey, Jane	Project PI	2018	MapKnitter and Public Lab	https://mapknitter.org/maps/indian-bayou-map	aerial photography, citizen science	NA
Geospatial	Image or visual data	Fontainebleau State Park Aerial Balloon Mapping Images	https://drive.google.com/drive/u/2/folders/1y1liJmOkfBuvm-DLOGdI5lplEm7QSDNa	Eustis, Scott; McLean, Tim; Fautsch, Dimitri; Landry, Blake; Lewis, Stevie; Green, Delaney	Project PI	2018	Google Drive	https://drive.google.com/drive/u/2/folders/1y1liJmOkfBuvm-DLOGdI5lplEm7QSDNa	aerial photography, citizen science	NA
Geospatial	Image or visual data	Fontainebleau State Park Aerial Kite Images	https://drive.google.com/drive/u/2/folders/1wNb4ye6R_CAuXeFFjDkvmqI5S75gIF3C	Eustis, Scott	Project PI	2018	Google Drive	https://drive.google.com/drive/u/2/folders/1wNb4ye6R_CAuXeFFjDkvmqI5S75gIF3C	aerial photography, citizen science	NA
Geospatial	Image or visual data	Fontainebleau State Park Aerial Infrared Images	https://drive.google.com/drive/u/2/folders/1YzzpK6wFloGJ_PfRitMAyVXQrHAQR42w	Eustis, Scott; McLean, Tim; Fautsch, Dimitri; Landry, Blake; Lewis, Stevie; Green, Delaney	Project PI	2018	Google Drive	https://drive.google.com/drive/u/2/folders/1YzzpK6wFloGJ_PfRitMAyVXQrHAQR42w	aerial photography, citizen science	NA
Geospatial	Image or visual data	MapKnitter map of Fontainebleau Algae Bloom	https://mapknitter.org/embed/fontainebleau-algae-bloom	McLean, Tim	Project PI	2018	MapKnitter and Public Lab	https://mapknitter.org/embed/fontainebleau-algae-bloom	aerial photography, citizen science	NA
Geospatial	Image or visual data	MapKnitter map of Fontainebleau State Park Balloon RBG	https://mapknitter.org/embed/fontainebleau-state-park-balloon-rbg	Fautsch, Dimitri	Project PI	2018	MapKnitter and Public Lab	https://mapknitter.org/embed/fontainebleau-state-park-balloon-rbg	aerial photography, citizen science	NA
Geospatial	Image or visual data	MapKnitter map of Bayou Bienvenue	https://mapknitter.org/embed/bayou-bienvenue--2	Eustis, Scott	Project PI	2018	MapKnitter and Public Lab	https://mapknitter.org/embed/bayou-bienvenue--2	aerial photography, citizen science	NA
Geospatial	Image or visual data	Aerial Balloon Mapping Images	https://drive.google.com/drive/u/2/folders/1jOgxfzwuW1UHoGcyJRCA_VGKPbh2WAfL	Eustis, Scott; Johnson, Happy; Hui, Joe; Barry, Liz; Black, Rollin; Lewis, Stevie;	Project PI	2018	Google Drive and Public Lab	https://drive.google.com/drive/u/2/folders/1jOgxfzwuW1UHoGcyJRCA_VGKPbh2WAfL	aerial photography, citizen science	NA

Information Products Report

InfoProductType	DigitalResourceType	Title	FileName	Creators	PublicationYear	Publisher	RepositoryName	DOIorPersistentURL	DatasetReference
Publication	Document	Host a Goal Setting Workshop	https://publiclab.org/notes/stevie/11-14-2017/host-a-goal-setting-workshop	Lewis, Stevie;	2017	Public Lab	PublicLab.org	https://publiclab.org/notes/stevie/11-14-2017/host-a-goal-setting-workshop	NA
Publication	Document	Workshop: Draft an Issue Brief with a Group	https://publiclab.org/notes/stevie/01-23-2018/workshop-draft-an-issue-brief-with-a-group	Lewis, Stevie;	2018	Public Lab	PublicLab.org	https://publiclab.org/notes/stevie/01-23-2018/workshop-draft-an-issue-brief-with-a-group	NA
Publication	Document	Host an Issue Brief Workshop	https://publiclab.org/notes/stevie/11-14-2017/host-an-issue-brief-workshop	Lewis, Stevie;	2017	Public Lab	PublicLab.org	https://publiclab.org/notes/stevie/11-14-2017/host-an-issue-brief-workshop	NA
Publication	Document	Issue Brief: Sedimentation in the Florida Panha	https://publiclab.org/notes/ChristianWagley/12-22-2017/sedimentation-in-the-fl-panhandle	Wagley, Christine;	2017	Public Lab	PublicLab.org	https://publiclab.org/notes/ChristianWagley/12-22-2017/sedimentation-in-the-fl-panhandle	NA
Publication	Document	Water Quality Testing at Turkey Creek	https://publiclab.org/notes/Delaney/05-04-2018/water-quality-testing-at-turkey-creek	Green, Delaney;	2018	Public Lab	PublicLab.org	https://publiclab.org/notes/Delaney/05-04-2018/water-quality-testing-at-turkey-creek	NA
Publication	Document	LaMotte and Earth Force low cost Water Monit	https://publiclab.org/notes/stevie/04-18-2018/lamotte-and-earth-force-low-cost-water-monitoring-kit	Lewis, Stevie;	2018	Public Lab	PublicLab.org	https://publiclab.org/notes/stevie/04-18-2018/lamotte-and-earth-force-low-cost-water-monitoring-kit	NA
Publication	Document	The discovery of the Clotilda and the communit	https://publiclab.org/notes/stevie/01-26-2018/the-discovery-of-the-clotilda-and-the-community-still-fighting	Lewis, Stevie;	2018	Public Lab	PublicLab.org	https://publiclab.org/notes/stevie/01-26-2018/the-discovery-of-the-clotilda-and-the-community-still-fighting	NA
Publication	Document	Hurricane Harvey Industrial Impact Image Sorti	https://publiclab.org/notes/gilbert/10-13-2017/hurricane-harvey-industrial-impact-image-sorting	Robchon, Gilbert;	2017	Public Lab	PublicLab.org	https://publiclab.org/notes/gilbert/10-13-2017/hurricane-harvey-industrial-impact-image-sorting	NA
Publication	Document	Notes and Reflections from Hurricane Preparec	https://publiclab.org/notes/stevie/09-20-2017/notes-and-reflections-from-hurricane-preparedness-discussion-dinner	Lewis, Stevie;	2017	Public Lab	PublicLab.org	https://publiclab.org/notes/stevie/09-20-2017/notes-and-reflections-from-hurricane-preparedness-discussion-dinner	NA
Publication	Document	Africatown Blueway-Public Lab NAS Workshop,	https://publiclab.org/notes/gilbert/08-31-2017/africatown-blueway-public-lab-nas-workshop-prichard-al	Robchon, Gilbert;	2017	Public Lab	PublicLab.org	https://publiclab.org/notes/gilbert/08-31-2017/africatown-blueway-public-lab-nas-workshop-prichard-al	NA
Publication	Document	Mapping Workshop at Docville Farm in Violet, L	https://publiclab.org/notes/gilbert/08-23-2017/mapping-workshop-at-docville-farm-in-violet-la-st-bernard-parish	Robchon, Gilbert;	2017	Public Lab	PublicLab.org	https://publiclab.org/notes/gilbert/08-23-2017/mapping-workshop-at-docville-farm-in-violet-la-st-bernard-parish	NA
Publication	Document	Compile screenshots and URLs for aerial image:	https://publiclab.org/notes/warren/09-20-2017/compile-screenshots-and-urls-for-aerial-images-of-harvey-damages-in-a-spreadsheet-for-reporting	Warren, Jeffrey;	2017	Public Lab	PublicLab.org	https://publiclab.org/notes/warren/09-20-2017/compile-screenshots-and-urls-for-aerial-images-of-harvey-damages-in-a-spreadsheet-for-reporting	NA
Publication	Document	Pensacola Stormwater Issue Brief	https://publiclab.org/notes/stevie/06-19-2018/pensacola-stormwater	Lewis, Stevie;	2018	Public Lab	PublicLab.org	https://publiclab.org/notes/stevie/06-19-2018/pensacola-stormwater	NA
Publication	Document	Rain Barrel and Rain Gauge Build workshop witl	https://publiclab.org/notes/stevie/06-22-2018/rain-barrel-and-rain-gauge-build-with-7th-ward-residents	Lewis, Stevie;	2018	Public Lab	PublicLab.org	https://publiclab.org/notes/stevie/06-22-2018/rain-barrel-and-rain-gauge-build-with-7th-ward-residents	NA
Publication	Document	Accurate Soda Bottle Rain Gauge	https://publiclab.org/notes/stevie/06-07-2018/accurate-soda-bottle-rain-gauge	Lewis, Stevie;	2018	Public Lab	PublicLab.org	https://publiclab.org/notes/stevie/06-07-2018/accurate-soda-bottle-rain-gauge	NA
Publication	Document	Educating a New Generation of Advocates	https://publiclab.org/notes/joyofsoy/10-24-2018/educating-a-new-generation-of-advocates	Hui, Joe;	2018	Public Lab	PublicLab.org	https://publiclab.org/notes/joyofsoy/10-24-2018/educating-a-new-generation-of-advocates	NA
Publication	Document	Recharging New Orleans: Rain Barrels and Envir	https://publiclab.org/notes/joyofsoy/11-06-2018/recharging-new-orleans-rain-barrels-and-environmental-justice	Schackai, Hiliarie;	2018	Public Lab	PublicLab.org	https://publiclab.org/notes/joyofsoy/11-06-2018/recharging-new-orleans-rain-barrels-and-environmental-justice	NA
Publication	Document	Fighting the Flood: Community Activism and Ed	https://publiclab.org/notes/joyofsoy/11-09-2018/fighting-the-flood-community-activism-and-education-in-pensacola?_=1541789527	Lewis, Stevie;	2018	Public Lab	PublicLab.org	https://publiclab.org/notes/joyofsoy/11-09-2018/fighting-the-flood-community-activism-and-education-in-pensacola?_=1541789527	NA
Publication	Document	The Africatown Connections Blueway: Legacy a	https://publiclab.org/notes/joyofsoy/11-09-2018/the-africatown-connections-blueway-legacy-and-rebirth	Lewis, Stevie;	2018	Public Lab	PublicLab.org	https://publiclab.org/notes/joyofsoy/11-09-2018/the-africatown-connections-blueway-legacy-and-rebirth	NA
Publication	Document	Sustain the Nine: Resilience in the Lower Ninth	https://publiclab.org/notes/joyofsoy/11-09-2018/sustain-the-nine-resilience-in-the-lower-ninth-ward	Hui, Joe;	2018	Public Lab	PublicLab.org	https://publiclab.org/notes/joyofsoy/11-09-2018/sustain-the-nine-resilience-in-the-lower-ninth-ward	NA