Public Labbers collaboratively build our Barnraising schedule. CC-BY-SA Public Lab Contributors.
THE LAW OF MOBILITY

SNAPSHOTS
STACK
MINUTE
SINGLE TOPIC

EACH PERSON HERE IS THE RIGHT PERSON
WHATEVER HAPPENS IS THE ONLY THING THAT COULD HAVE
WHENEVER IT STARTS IS THE RIGHT TIME
WHEN IT IS OVER IT IS OVER

3D models not shown

BREAKFAST GRUB

SUNDAY
DLVC | Auditorium | Classroom

LUNCH! LUNCH! LUNCH!

Clean House
Catch Van

Patriotic
Patriotic

Text: PSYK5M to 24587

UPDATE: Barnraising

Pitner in New Orleans
Going into 2016, Public Lab began a year long reflection on our work to date, striving to understand what we do really well and figuring out how we can support others in doing good work to best amplify the spirit and culture of the nonprofit. Early in the year we took a deep look at the three goals Public Lab had formed around — addressing environmental inequity, supporting and facilitating community monitoring projects, and figuring out the best ways for people to have access to the tools they need to do their own monitoring through open source hardware development. As a founder, I remember the early days when, as a group of young activists, we were energized to take on all of these varied and large topics — and we did! Now seven years later, we are looking around at a changed landscape, both in terms of the depth and breadth of the open hardware community, and in terms of our international and national political reality and the U.S. federal government’s newfound disregard for science and environmental research.

2016 was, for Public Lab, a year of maturation and transformation, thinking critically about how we can use our experience and leadership across several fields — open hardware, citizen and community science, and environmental activism — to bring people together to support communities with environmental and health questions to find answers. Seven years ago there were not many organizations doing work like we were, but today we’re in good company, with many new initiatives around open hardware, cheap DIY sensors and more. In order to refocus our efforts on community outcomes, we decided to loosen the reins on other pieces of our work, strongly supporting the advancement of new networks — such as the Gathering for Open Science Hardware — just one example of a new and promising initiative we’re working with and supporting, to expand the impact of our work and this movement.

Given the uncertainty about the state of the environmental regulatory landscape, decreased funding and resources around environmental monitoring, and a decline in environmental and science reporting that have become emblematic of our times, Public Lab and our allies must work harder and smarter to help people have a voice in the places they hold dear. This year has strengthened our resolve and dedication to link science, data, environment, technology and media intrinsically to create networks supporting pressing local and global issues. Specifically, we are:

**Supporting communities advocating around environmental and social questions.** Many of the critical issues of our time, like climate change, natural resource extraction, urban (re)development, and infrastructural resilience, are putting increasing pressure on communities who have limited resources to document the impacts. As officials have increasingly counted on limited and specific datasets to make decisions about these issues, communities have been cut out of the process. At the end of 2016 we entered a new moment where environmental datasets and their integrity are questioned by the agencies directed to maintain them, meaning communities must bear the additional burden of preserving the record of environmental change to ensure it doesn’t disappear. Public Lab is working to level the playing field by improving the public’s ability to understand and contribute to locally relevant datasets as a key foundation of a stronger democracy.
Growing a network of open technology, science and data advocates to support people with lived questions. While Public Lab continues upgrading and improving community tools, we are also dedicated to building relationships with other open source hardware developers and organizations working on tools that have or could have environmental science applications. The open source hardware world has bloomed since Public Lab was founded, and we see the potential for significant capacity to be added to both Public Lab and the open source hardware community by bridging the two efforts. This will allow for quicker, more diverse development of hardware, and will provide hardware developers with practical applications for their work and collaborators with skills not traditionally found in hardware communities.

Creating a movement of people engaged, aware and literate in the use of science for advocacy. Since our founding, Public Lab has sought to change the way people obtain, understand and share information. This is important now more than ever as science journalism and public scientific literacy decline, science journalism is challenged, and public scientific debates become tainted by ideology. Society is currently faced with the combination of increasing news deserts (the collapse of local journalism and the reduction of rural and state capital news coverage), the decline of both science and investigative journalism, and a reduction of scientists employed by the government — effectively decreasing even the government’s ability to self–report on environmental issues. Equipping communities with the tools they need to collect and share data is fundamental for holding political representatives accountable at all levels as community–scale environmental hazards come to the forefront in mainstream political discourse. We seek to be the space and network where communities can gather, share, and disseminate pertinent information, but we can’t do it alone —this has to be a movement, not a single platform. We’ve become leaders and look forward to sharing this space equitably with our fellow organizations and initiatives.

As 2017 unfolds and we wake up to a new reality both in the U.S. and globally, we look forward to the challenge of taking on new projects where the systems that are supposed to support the rights of humans to a healthy life are failing, and continuing to support communities we have been allied with for years. We will be launching an environmental monitoring program in the Gulf Coast to support resilient communities, strengthening our work in the Midwest where people are standing up to fracking and mining interests, improving our internal systems to build a stronger community science research culture, and continuing an ethos of evaluation and learning to better understand our impacts.

It’s been great to work with the Public Lab community in 2016 and watch as new projects unfold and others comes to maturity. Although we have big challenges ahead of us, we’re excited to tackle them with all of you.

Shannon Dosemagen
Cover Images (clockwise):
1. Groundwork New Orleans Green Team students at Stormwater Workshop. Photograph by Stevie Lewis.
2. A Riffle data logger. Photograph by Stevie Lewis.
3. Young Public Lab member exploring low-cost aerial photography. CC-BY-SA Public Lab Contributors.

Back Image:
Kite reels at the Kits Initiative. Photograph by Jeffrey Warren.
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2016 PROJECT HIGHLIGHTS

@gretchengehreke pitching a session idea at the 2016 Barnraising. Photograph by Jeffrey Warren.
Bourj Al Shamali refugee camp

Public Lab Organizer Claudia Martinez Mansell and community members of the Bourj Al Shamali refugee camp in Lebanon have been working hard to produce an aerial map of the densely populated camp, to get a sense of spatial dimensions and resource distribution within the camp, and design an open green space. Visualizing space may promote an enhanced sense of agency in place. Residents designed an event incorporating camp history, map-making, contextualization, and goals, and launched successfully funded physical maps for the community, and speaking opportunities for the young citizen scientists who conducted this work https://www.kickstarter.com/projects/1058337059/citizen-science-in-a-refugee-camp/.

Landfill in Val Verde

Public Lab Organizer Sara Sage and community members have initiated a multifaceted project charting the waste stream contributing to the landfill abutting their neighborhood in Val Verde, California, and mapping emanating odors. Understanding how to interrupt the system leading to landfill expansion, and documenting impacts on the community may provide two distinct routes to address the health and environmental issues related to this landfill. Read more here: https://publiclab.org/notes/sarasage/09-29-2016/community-level-odor-mapping-site and https://publiclab.org/notes/sarasage/10-28-2016/socal-waste-stream-mapping-at-learn-beyond-the-book-in-santa-clarita.
Frac Sand

The Public Lab nonprofit and community collaborators have developed a multidisciplinary online resource with information regarding airborne particulate matter science and regulation, and industrial sand mining monitoring and advocacy strategies. Read more at: www.publiclab.org/wiki/frac-sand

NASA AREN

Through the NASA AREN project, Public Lab has collaborated with the NASA team on creative new low-cost designs for DIY kits, and revived and refreshed old kite-based wind monitoring techniques for use in education. Public Lab staff presented a poster at the American Geophysical Union, as well as lent assistance on kite flying.
2016 Project Highlights

1973
Big strike against UAR
- To have schools
- To have wells of water
In 4 days we win

Photo from an exhibition at Al Hula Association
in Bourj Al Shamali refugee camp
KITS INITIATIVE
Civic Kits Initiative

To foster accessible science by placing tools in the hands of people who need them, Public Lab’s Kits Initiative creates, assembles, and distributes toolkits based on the open research designs of the Public Lab community. To make this happen, the Public Lab community works together to create and improve open source, DIY plans for a variety of science tools, many of which are then sold through Public Lab’s online store. By researching costs and buying materials in bulk, the Kits Initiative is able to make DIY kits that are useful, educational, and affordable. All proceeds support the work of the Public Lab nonprofit.

OVERALL FACTS
3,000 kits sold in 2016
Total kit sales in 2016 were $102,055.15
DIY Spectrometry

A spectrometer’s ability to identify a variety of unknown materials is of interest to community members, teachers, scientists, homebrewers, and kids and adults who just want to have some detective fun. Though experimental, this tool has been used to collect spectral data on contaminated water, oil spill residue, various food grade oils, laundry detergent, wines, and lake water, to name a few.

BREAKOUT FACTS

launched fall 2012
91,857 spectra uploaded to date
11,007 spectral data contributors

2016 KIT DISTRIBUTION FACTS

550 Desktop Spectrometer Kits
676 Foldable Mini-Spectrometers
749 Spectrometry Bundles Upgrade Kits
Infrared Photography Kits

The Public Lab community originally developed our first infrared technology to monitor wetlands damages in the wake of the BP oil spill, but its simplicity of use and easy-to-modify open-source hardware & software makes it a useful tool for home gardeners, farmers, hikers, makers, amateur scientists, teachers, artists, and anyone curious about the secret lives of plants. In 2016 we distributed Mobius ActionCams capable of recording 1080p HD video as well as time lapse photos. The Mobius is tiny, lightweight, tough, easy to hack, and has already been combined with Public Lab Mapping Kits for aerial applications.

Balloon, Kite & Pole Mapping Kits

Since the start of Public Lab, we’ve been building a global community of mappers who are engaged in discussion around aerial mapping tools and their use as “community satellites” for localized mapping of everything from industrial pollution and the health of your garden, to refugee camp life and political protests. Public Lab’s easy-to-use mapping kits provide an accessible method for recording events or environmental conditions at any given moment. New to the Kits initiative in 2016 is the DIY mini-kite kit which provides portability to aid in quick response to environmental situations.

BREAKOUT FACTS
launched summer 2013
2534 infragram samples uploaded

2016 KIT DISTRIBUTION FACTS
398 Infragram filter kits
114 Infragram Point & Shoot Plant Cams (introduced August 2015)

BREAKOUT FACTS
launched summer 2011
Over 2814 contributors (not counting anonymous users) have completed over 2321 maps with an average resolution of 25 cm per pixel

2016 KIT DISTRIBUTION FACTS
36 Balloon Mapping Kits
24 Chloroprene Mapping Balloons
22 All-in-One Balloon and Kite Mapping Kits
14 Kite and Kite Mapping Packs
40 Pole Mapping Kits
7 DIY mini kite kits (introduced June 2016)
3 ONLINE COMMUNITY GROWTH
Software outreach and stats
A collection of updates about software outreach and projects can be found at https://publiclab.org/tag/software-outreach, with an overview of 2016 provided in: https://publiclab.org/notes/warren/02-01-2017/web-working-group-update-14-january-2016. Of note, more than five times as many contributors (54) added code in 2016 than in the previous three years combined.

Publiclab.org Stats
778 research notes posted in 2016; 2,851 wiki edits made in 2016; 124 questions and 145 answers posted in 2016
More website statistics can be found at https://publiclab.org/stats.

How many people were involved?
339,773 people from 222 countries viewed
1,124,855 pages on PublicLab.org

New collaboration features
In 2016, we emphasized sharing and collaborative learning by supporting the writing of activities for other people to try, and promoting replications of those activities. We also introduced the question and answer system. Ask a question at https://publiclab.org/questions.
SELECTED EVENTS

Carla Green and the 2016 Barnraising Schedule Grid. Photograph by Jeffrey Warren.
LEAFFEST, 16 people

Chris Fastie’s annual deep-dive event in Vermont brought 16 attendees from both the northeast and mid-Atlantic regions. Participants worked on documenting activities for the new Public Lab activities grid system, the publiclab.org Question and Answer feature, setting up trail cameras for streamside monitoring, and processing 3D visualizations from aerial photos of a landfill.

Regional Barnraising, 30+ people

The 2016 Regional Barnraising was hosted in Val Verde, CA. Over 30 people gathered for this event and shared a weekend of active discussions, working on community planning, and even a bit of time balloon mapping. It was the first Barnraising to be hosted in a physical barn and where incorporating translation was a core focus. People who spoke both Spanish and English put special banners on their name tags and were available to help with translation when needed. The main theme was the local Chiquita Canyon Landfill with sessions focused on topics such as power mapping and working with federal agencies. Other sessions included soil testing, aquatics regulations, agriculture, smell evidence, working with the media, Exide and alternatives to landfills.
Barnraising, 48 people

The Annual Barnraising brought 48 people together for an intense weekend retreat of making, brainstorming and networking. Participants traveled in from around the U.S. including California, Colorado, Wisconsin, New York, Pennsylvania, Tennessee and Georgia. International participants came from China, Brazil and Korea. The Barnraising included dynamic sessions such as those on participatory science, newcomers outreach, microscopy, image analysis, building effective partnerships, Rifles and Arduinos, fracking, public comment, landfills, water advocacy, balloon and kite mapping, pom-poms and popsicle sticks open play session for attendees’ kids, 3D imaging from photographs, stakeholder mapping and lightning talks.

Open Hours

Open Hour is an interactive meetup hosted by the Public Lab community, both online and in person. In 2015, our OpenHours drew between a dozen to 25 live participants who came together to share research, ideas, questions and networking opportunities. Open Hour themes in 2016 were:

December 5th
Environmental monitoring methods recognized by enforcement bodies

November 7th
New contributors to open source code

October 3rd
Replicating Activities on publiclab.org

September 6th
Google Summer of Code Projects
August 1st
Public Comment on Environmental Issues

July 7th
Learning about the Barnraising in Val Verde

June 6th
Exploring Proof

May 2nd
Public Lab’s research culture

April 4th
Open Access to Environmental Data

March 7th
Soil and Soil Testing

February 1st
Landfills: Mapping and Monitoring

January 28th
Live Call on QGIS
Val Verde community balloon mapping the local landfill.
Photograph by Shannon Dosemagen
Projects

Public Lab organizers and community members lead dozens of projects around the world. Here are just a few examples from across the global Public Lab network.

Hagit Keysar’s aerial map of the displacement of the Bedouin village of Al-Araqib in the south of Israel.

Claudia Martinez Mansell’s mapping project with the students from the Bourj Al Shamali refugee camp in Lebanon and follow-up exhibition at Zentrum für Kunst und Urbanistik (ZK/U), a center for art and urbanistics in Berlin.

Shan He’s balloon mapping project in Jiangxi Province in China and 6-month monitoring and data management plan for documenting water quality parameters using arduino-based water sensors in the Pearl River.

Nick Shapiro’s meetups to write Plant-based Indoor Air Remediation documentation in Philadelphia and Georgia.

Chris Fastie’s KAPtery aerial photography rig updates.

Victor Sinatra’s visual analysis of wind behavior in the region around wildfires.
Sara Sage’s project, odor mapping and waste stream mapping in Val Verde, California.

Catherine D’Ignazio, Will Macfarlane and Katie Gradowski’s project documenting water conductivity testing tutorials.

Patrick Hixenbaugh’s work organizing partners on the Riffle project and starting geographic organizing in New Zealand.

Public Lab Nonprofit Projects

The Public Lab staff also spearheaded projects aiming at programmatic growth areas. Some of these included:

Wrapping up the Homebrew Sensing project with the creation of new spectrometry workshops, materials for engaging with a community group on tool development, and an Oil Testing Booklet including information on oil source identification and spill reporting, as well as DIY oil testing activities.

Completing the Frac Sand 11th Hour project with the creation of new workshops and extensive environmental monitoring, scientific literacy, and advocacy resources. Significant portions of this project were conducted in collaboration with partners at Chicago State University.
Starting the Oil and Gas Accountability Toolkit project, with first steps focusing on accessible and influential photographic and visual monitoring methods, and their regulatory contexts. We have also been preparing for hosting and analyzing various types of data that will be collected through the duration of this project.

In partnership with researchers at Drexel University, Public Lab developed and implemented a national survey of agencies responsible for responding to indoor air quality inquiries. Public Lab has been working on synthesizing information gleaned from those surveys and ancillary research, and is currently producing state-specific information sheets.

To help contextualize research and explore the different meanings of “evidence,” Public Lab has started the “Environmental Evidence” blog series, in which staff interview environmental lawyers (and hope to expand to include enforcement agents and professional researchers), and author or support informational blog posts.

In the first year of the NASA AREN project, Public Lab has focused on collecting and documenting kit needs, planning kit releases and production schedules, and resources for using kites in classroom-oriented design and engineering challenges. To that end we've collaborated with the NASA team on creative new low-cost designs for DIY kits and revived and refreshed old kite-based wind monitoring techniques for use in education. Public Lab staff presented a new coroplast version of NASA's patented AEROPOD technology, assembled a reproduction version of the TALA kite anemometer, and presented a poster at the American Geophysical Union, as well as lent assistance on kite flying.
PARTNERS, ORGANIZERS, STAFF, BOARD AND DONORS

THE CROWD & THE CLOUD, CrowdAndCloud.org, supported by NSF, the National Science Foundation.
### People

<table>
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<tr>
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<td>8</td>
</tr>
<tr>
<td>PARTNERS</td>
<td>19</td>
</tr>
</tbody>
</table>

### Donors

- 108 Donors
Public Lab’s contributions over the first year of AREN have focused on collecting and documenting kit needs, planning kit releases and production schedules, and resources for using kites in classroom-oriented design and engineering challenges. To that end we’ve developed a new coroplast version of NASA’s patented AEROPOD technology, assembled a reproduction version of the TALA kite anemometer, and presented a poster at the American Geophysical Union, as well as lending assistance on kite flying. The AREN project has been both rewarding and challenging, bringing us in contact with a host of government data initiatives such as GLOBE, while also creating conflicts between our open policies and NASA’s perceived liability concerns around open development and proprietary Intellectual Property.

Autodesk Foundation provided Public Lab with a Student Expert to work on a design project and Microdesk training on 3D reconstructions, and software. Student Expert, Ranon Pritchard’s, work on rubber band powered aerial rigs led to a standard set of components useful to the AREN project’s Aeropod development, as well as updated production files for KAPtery rigs.
Partners, Organizers, Staff, Board & Donors

We have now participated in two semesters worth of pro-bono work with the Duke Legal Clinic, and hope to continue this mutually enriching partnership. The first semester focused on patent licensing related to passive PM monitors, and the second semester included a series of legal reports on Open Hardware Licenses and their interactions with patents and international contributors. These legal reports are now cleared by Duke to be turned into a blog series.

Public Lab co-organized the first Gathering for Open Science Hardware (GOSH) at the Center for Nuclear Research (CERN) outside of Geneva, Switzerland. GOSH 2016 successfully brought together 50 of the most active developers and users of Open Science Hardware, complemented by expertise from the wider Open Science movement. GOSH 2016 focused on addressing a primary barrier to Open Science Hardware: early adopters are disparate and separated by geographical and disciplinary borders which limit interaction, exchange and community building.
PARTNERS

Louisiana Universities Marine Consortium (LUMCON). Photo by Public Lab contributors.
ORGANIZERS
Partners, Organizers, Staff, Board & Donors

Mary Kenison
Laura Chipley
Patrick Hixenbaugh
Diana Di Leonardo
Klie Kliebert

Sara Sage
Partners, Organizers, Staff, Board & Donors
STAFF

We welcome Gilbert Rochon, Bronwen Densmore, Margie Cohen, and Delaney Green in 2017.

Thank you to departing staff members Mathew Lippincott and Becki Chall for all of their work during 2016.
Catherine Bracy is a civic technologist and community organizer whose work focuses on the intersection of technology and political and economic inequality. She is the co-founder and Executive Director of the TechEquity Collaborative, an organization in Oakland, CA that seeks to build an inclusive tech ecosystem in California’s Bay Area.

She was previously Code for America’s Senior Director of Partnerships and Ecosystem where she grew Code for America’s Brigade program into a network of over 50,000 civic tech volunteers in 80+ cities across the US. She also founded Code for All, the global network of Code-for organizations with partners on six continents. Catherine built Code for America’s civic engagement focus area, creating a framework and best practices for local governments to increase public participation which has been adopted in cities across the US.

During the 2012 election cycle she was Director of Obama for America’s Technology Field Office in San Francisco, the first of its kind in American political history. She was responsible for organizing technologists to volunteer their skills for the campaign’s technology and digital efforts. Prior to joining the Obama campaign, she ran the Knight Foundation’s 2011 News Challenge and before that was the administrative director at Harvard’s Berkman Center for Internet & Society. She is on the board of directors at the Citizen Engagement Lab and the Public Laboratory.

Andrea Chen is the co-founder and Executive Director of Propeller: A Force for Social Innovation, a social innovation incubator in New Orleans focused on systemic change in sectors such as food access, water, public health, and education. Propeller has accelerated 50 new ventures that have generated over $20 million in revenues and financing in the last 3.5 years. Propeller’s 10,000 s.f. Propeller Incubator facility is now home to over 80 socially minded companies. Andrea was named “40 Under 40” by Gambit Magazine, 2010 City Business Women of the Year, and is an appointed board member of the New Orleans Business Alliance, the official economic development arm of the City of New Orleans. She completed her B.A. at Stanford University and M.Ed. at UNO and Harvard Graduate School of Education.
Eymund Diegel is a South African trained urban planner who first became interested in real time mapping technologies when creating maps for constantly changing informal settlements in Africa. With the digital technology revolution, he is exploring how personal media devices, such as cell phones, can create network maps of how people live in their communities, and how these “density trails” can provide more accurate mapping. He lives by the Gowanus Canal, a polluted Superfund site in Brooklyn, NY, where he works with community groups to create time lapse “digitally transparent” maps, for neighbors to better understand what was historically under their feet, and what they can do about it.

Janet Haven is Director of Programs and Strategy for Data & Society Research Institute. Before joining Data & Society, Janet spent more than a decade with the Open Society Foundations’ Information Program, where she oversaw grant making and strategy for a range of portfolios focused on the use of technology by human rights and accountability organizations, as well as the implications of large-scale data collection and algorithmic decision-making in the advancement of social justice. Her background includes stints at software start-ups in Central Europe, where she built open source developer communities and led product development teams. Janet holds a BA from Amherst College, and an MA from the University of Virginia, Charlottesville.
Rajul (Raj) Pandya is the director of the American Geophysical Union’s Thriving Earth Exchange, which connects scientists, communities, and sponsors and helps them work together to develop solutions that have local impact and global implications. Prior to working with AGU, Dr. Pandya worked as the Director of Spark: Education and Outreach and the National Center for Atmospheric Research. Spark built exhibits, developed curriculum, and offered research experiences for students, teachers, and members of the public—all related to climate and weather. Dr. Pandya has managed internships and mentored students, taught in college and high school, collaborated with diverse communities internationally and in the US, and worked on educational technology. He has led multi-disciplinary efforts to increase diversity in the sciences, manage meningitis vaccines more effectively in Africa, and improve student learning of weather and climate. For the Academies, Dr. Pandya served on the Committee on the Review of the National Oceanic and Atmospheric Administration’s Education Program and is serving as the chair for the National Academies Committee on Designing Citizen Science to Support Science Learning. Dr. Pandya is a founding member of the executive board of the Citizen Science Association, which is currently the only membership organization dedicated to the dissemination of scholarship related to designing and implementing citizen science. He holds a Ph.D. from University of Washington in Atmospheric Science.

Micah L. Sifry is co-founder and Executive Director of Civic Hall, as well as co-founder of Personal Democracy Media, which produces the annual Personal Democracy Forum conference on the ways technology is changing politics. In addition, he consults on how political organizations, campaigns, non-profits and media entities can adapt to and thrive in a networked world. He is a senior technology adviser to the Sunlight Foundation, which he helped found in 2006, and also serves on the board of Consumer Reports and the Public Laboratory for Open Technology and Science. He is the author or editor of eight books, most recently A Lever and a Place to Stand: How Civic Tech Can Move the World (PDM Books, 2015), with Jessica McKenzie; The Big Disconnect: Why the Internet Hasn’t Transformed Politics (Yet) (OR Books, 2014); and WikiLeaks and the Age of the Transparency (OR Books, 2011). In 2012 he taught “The Politics of the Internet” as a visiting lecturer at Harvard’s Kennedy School. From 1997-2006, he worked closely with Public Campaign, a non-profit, non-partisan organization focused on comprehensive campaign finance reform, as its senior analyst. Prior to that, Micah was an editor and writer with The Nation magazine for thirteen years. He is the author of Spying for a Fight: Third-Party Politics in America (Routledge, 2002), co-author with Nancy Waltzman of Is That a Politician in Your Pocket? Washington on $2 Million a Day (John Wiley & Sons, 2004), co-editor of Rebooting America, and co-editor of The Iraq War Reader (Touchstone, 2003) and The Gulf War Reader (Times Books, 1991). Find him at @mlsif.
Gwen Ottinger is Associate Professor in the Department of Politics and the Center for Science, Technology, and Society at Drexel University, where she directs the Fair Tech Collective, a research group dedicated to using social science theory and methods to inform the development of technology that fosters environmental justice. She is author of Refining Expertise: How Responsible Engineers Subvert Environmental Justice Challenges, which was awarded the 2015 Rachel Carson Prize by the Society for Social Studies of Science.

Shelby Ward directs the Tennessee Clean Water Network (TCWN) litigation program and meets in-house legal needs. Prior to joining TCWN, she practiced family law and environmental law as a sole practitioner. She also worked as an aquatic ecologist. Her activities in the conservation community are varied. Shelby is a co-founder of the annual Appalachian Public Interest Environmental Law Conference in Knoxville. She also serves on the National Parks Conservation Association (NPCA) Southeast Regional Council and the Knoxville Chapter National Association for the Advancement of Colored People (NAACP) Environmental and Climate Justice Committee. While a student at the University of Tennessee College of Law, Shelby served as a staff editor to the Tennessee Journal of Law & Policy and president of the Environmental Law Organization. She graduated from law school in 2011 and earned a Master of Science in Ecology from the University of Tennessee in 2015. She holds a Bachelor of Science in Biology and a Bachelor of Arts in History from Howard University. She enjoys identifying freshwater macroinvertebrates and rafting with her sister. Shelby lives in Knoxville with her husband and daughter.
None of the amazing things we accomplished in 2016 would have been possible without the help of our Donors and Sustaining Members! Thanks to each and every one of you for making our work possible!

$50,000 +
- Autodesk Foundation
- Claneil Foundation Emerging Leaders Fund
- Gordon and Betty Moore Foundation
- Rita Allen Foundation
- The 11th Hour Project, a program of the Schmidt Family Foundation

$10,000 - $49,999
- Ashoka
- Fund for Shared Insight
- Google, Inc.
- National Science Foundation
- Rackspace
- Wayne RESA

$1,000 - $9,999
- Emerging Philanthropists of New Orleans
- Reyhan Harmanci
- General Electric

$250 - $999
- Andrea Chen
- Glorianna Davenport

$100 - $249
- Mignon Belongie
- Marci and Gene Dosemagen
- David Gustavson
- Douglas Norgord
- Alison Parker

$1 - $99
- Ken Edds
- David Etchells
- Joseph Gehrke
- Jessica Hendricks
- Barbara Jackson
- Paul Johnson
- Valena Scott
- Arnold Purdon
- David Trooskin-Zoller
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Bronwen Densmore
William Dosemagen
Shan He
John Higgs
Bobbie King
Gary Oliver

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Luke Iseman
Alexander Johnson
Geert Potters
Olaf Zumpe

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Shauna GM
Agnieszka Jenerowicz
Steven Popenoe
Sara Sage
Lauren Sullivan
Shelby Ward
Jeff Warren
Mia Warren

RHIZOME
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Alessandro Liani
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Marko Peljhan
Christian Pellegrin
Nelson Pigeau
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Somair Riaz
David Roberts-Thomson
Justin Robinson
Kylan Schilling
Nelson Shaw
Harry Simpson
Francois Struman
Dilip Tammana
Tim Torres
Tom Trombley
Shane Volpe
Peidong Wang
Fred White
Bic Wood
Shilei Zheng

The Public Lab Kite Mapping Kit.
Photograph by Bronwen Densmore.
Daniela Seleri at the Regional Barnraising, Val Verde, CA. Photograph by Jeffrey Warren
Income: $998,145.54

Expenses: $785,497.81

Grants and Contributions: $871,637.88
Civic Kits: $85,759.19
In-Kind: $26,380
Direct Public Support: $14,105.64
Miscellaneous: $262.83

Programs: $577,135.54
Management and Administration: $133,085.75
Fundraising: $75,276.52

The Public Lab fiscal year runs from July-June. The finances listed above have not been CPA reviewed. For reviewed fiscal year statements please contact margie@publiclab.org.
On-paper layout of the Barnraiser, a 1 page daily newspaper at the 2016 Barnraising. Photograph by Jeffrey Warren.
Press

- **Landscape Architecture Magazine**, *Open Invitation*: When DIY culture, open-source tech and citizen science converge, communities get a boost towards environmental justice, Jennifer Ruet, October 2016 print edition

- **Guernica**, *Healing the Gulf with Buckets and Balloons*, Anya Groner, 9.8.16

- **The Guardian**, *Can the open hardware revolution help to democratisate technology?*, Adrian Smith and Mariano Fressoli, 9.7.16

- **Creative Commons**, *Collaboratively Generating More Knowledge*: Public Lab’s approach to citizen science, Jennie Rose Halperin, 9.7.16

- **Washington Post**, *How to find a flying squirrel*: Citizen scientists are enlisted to help scientists, John Blodgett, 3.22.16


- **MAKE Magazine**, *Public Lab Puts Eco Justice in the Hands of Citizen Scientists*, Benjamin Preston, 2.9.16

- **MAKE Magazine**, *Grime Fighters*: A network of DIY environmentalists is helping monitor cleanups and busting polluters. Benjamin Preston Feb/March 2016, p. 16-19

Publications

Results of an 'open play' session for attendees kids at the 2016 Barnraising. Photograph by Jeffrey Warren.