An aerial photograph of a green lawn with a concrete path. A large, bright pink balloon is in the upper left. Several people are walking or standing on the path and lawn. Long shadows are cast across the grass, indicating it is either early morning or late afternoon.

**TXBR**

**Public Lab  
Barnraising**

**Texas 2019**

*english version*

Public

HOPE

INCLUSION

facilitating

-Liz

Together is

COMMITMENT  
+  
♡

Learning

COMMUNICATIVE

eng

Community  
@TKC

HUMOR

COMMUNICATIONS

Justice

SPACE

Engage/  
Connect

Outwards  
from  
you

SCIENCE

Healing

Compassion

the feeling of sympathy  
for someone else  
suffering or  
being in  
a difficult  
situation

Let's Redesign  
Public Row  
Build it a  
Vale that  
creates abundance

Complete

Sharing

Persistence

the quality of being  
determined to do  
something, to  
achieve a goal,  
or to attain an  
objective



clab.org/txbr

Quality

EQUITY

Advocacy

growth

engagement

Curiosity

Abundance

Survival

XAVIER  
AYALA  
LIFE

SPACE

Woke and  
AWARE

Resisting

Oppression  
J. Mancias

Purpose

Presence without  
attachment

High  
Tide

Integration

Humanity

Equity

## What is a Barnraising?

In the spirit of bringing a community together to collectively raise a structure such as a barn, Barnraising participants come together to test environmental monitoring tools in the field, brainstorm new research projects, share about environmental concerns, and develop strategies to address them. The event is hosted in an “unconference style.” This means that people collectively set the agenda, and join to participate and collaborate rather than just present, talk, and listen.

At the event, barnraising participants can expect to: improve social ties through in-person collaboration, participate in deep exploration of local environmental issues and ongoing community research, advance technical knowledge, and work with hands-on projects for local environmental monitoring and documenting new monitoring methods.

## A Note on Open Space Technology

Barnraisings use a method for collective event organizing from the 1980s known as Open Space Technology. Some of the principles of this method are:

- Every person here is the right person
- Whatever happens is the only thing that could have
- Be prepared to be surprised
- Whenever it starts is the right time
- The Law of Mobility — meaning everyone is responsible for using their own judgment in moving to where their time will be best spent.

Together, these guiding principles help to create the space for the unique and genuine collaborations!

*The following quotes were taken from the video What's a Barnraising?, produced during the 2019 Texas Barnraising. Watch online at <http://bit.ly/WHATISBR>*



**REVEREND VANESSA TINSLEY**

The Barnraising is an incredibly important tool for change makers... [It's] super wonderful to get together with people who are not as focused on talking about the problem as they are engaged in creating solutions.



**LIZ BARRY**

It's our version of a conference. There's no pre-set agenda. Instead, we convene in the morning and, with whatever interests people have—what they want to work on with each other—we bring that forward, put it on a big board, and work it into a schedule and create our own time.



**REVEREND JAMES CALDWELL**

For most of us, especially smaller nonprofits, we work in a [silo] and we try to connect to resources within our community... The Barnraising through Public Lab opened the door wide open and connected me to so many opportunities and relationships... And as a result of that, I had to share that information with others and invite them in—other nonprofits, other community leaders... to come and be a part of the Barnraising experience.

## Why host a Barnraising?

Sharing a physical space with others can be extremely productive and rewarding. Barnraisings, in particular, help people to share and build knowledge with others. Barnraisings have been known to help people connect with others and build social bonds, dive into local issues, share a physical space to be creative and work on projects, and bring newcomers in.







Community  
DISASTER RES

**Learn how to host your own Barnraising at:**  
[PublicLab.org/barnraising-host](https://PublicLab.org/barnraising-host)

**Topics include:**

### **Planning**

- Building a budget
- Picking a venue
- Setting up registration
- How to make name tags
- Creating a run sheet and facilitator script
- Setting up a schedule grid
- Making Open Space signs

### **During the event**

- Collaboratively documenting with a mini newspaper
- Facilitation techniques

### **Family and fun activity ideas**

- Building miniature kites at a family science night
- Reverse engineering (a hands-on STEM activity)

An aerial photograph of a river winding through a landscape. The river is a murky, olive-green color. The banks are covered in dense green vegetation, including trees and shrubs. Long, dark shadows from trees out of frame stretch across the river and the surrounding land. A white rectangular box is positioned in the lower-middle part of the image, containing a handwritten quote in black ink.

"We don't own the land, it  
owns us."

- Juan

The 2019 Texas Barnraising began with a land acknowledgment by Juan Mancias of the Esto'k Gna (Carrizo/Comecrudo Tribe of Texas). Visit [bit.ly/CCNation](http://bit.ly/CCNation) to learn more about the tribe's efforts to populate and support a network of front line (Wolf Pack) villages along the "so-called Mexican-American border," protecting indigenous sacred sites, resisting construction of the LNG (fracked gas) terminal and accompanying pipelines, and educating people about the environmental devastation that could be caused by a border wall.



DMM



sing

ROUND  
TABLES

PIANO  
LUNGE

HANDS-ON  
WORKSHOP

BIRD  
ROOM

8:00

9:00

9:45

10:45

11:15

12:25

1:20

2:35

3:05

4:20

4:50

6:05

WELCOME! INROS!  
LAND ACKNOWLEDGEMENT  
TOPICS TO SCHEDULE

LUNCH! LUNCH! LUNCH! LUNCH!

## Making a schedule grid

The schedule grid is the framework of the Barnraising. On day one, as you brainstorm ideas of what you want to discuss during the event, you'll work together to write the topics down and put them into time slots.

## Supplies you'll need

- Rolls of 3-foot (1 meter) wide paper
- Painters tape
- Colorful wide-tipped markers
- A ream of printer paper
- Scissors, or some kind of cutting knife

ROUND  
TABLES

PIANO  
LOUNGE

HANDS ON  
WORKSHOP

BIRD  
ROOM

9:00  
10:00

10:30  
11:30

12:00 LUNCH! LUNCH! LUNCH! LUNCH!

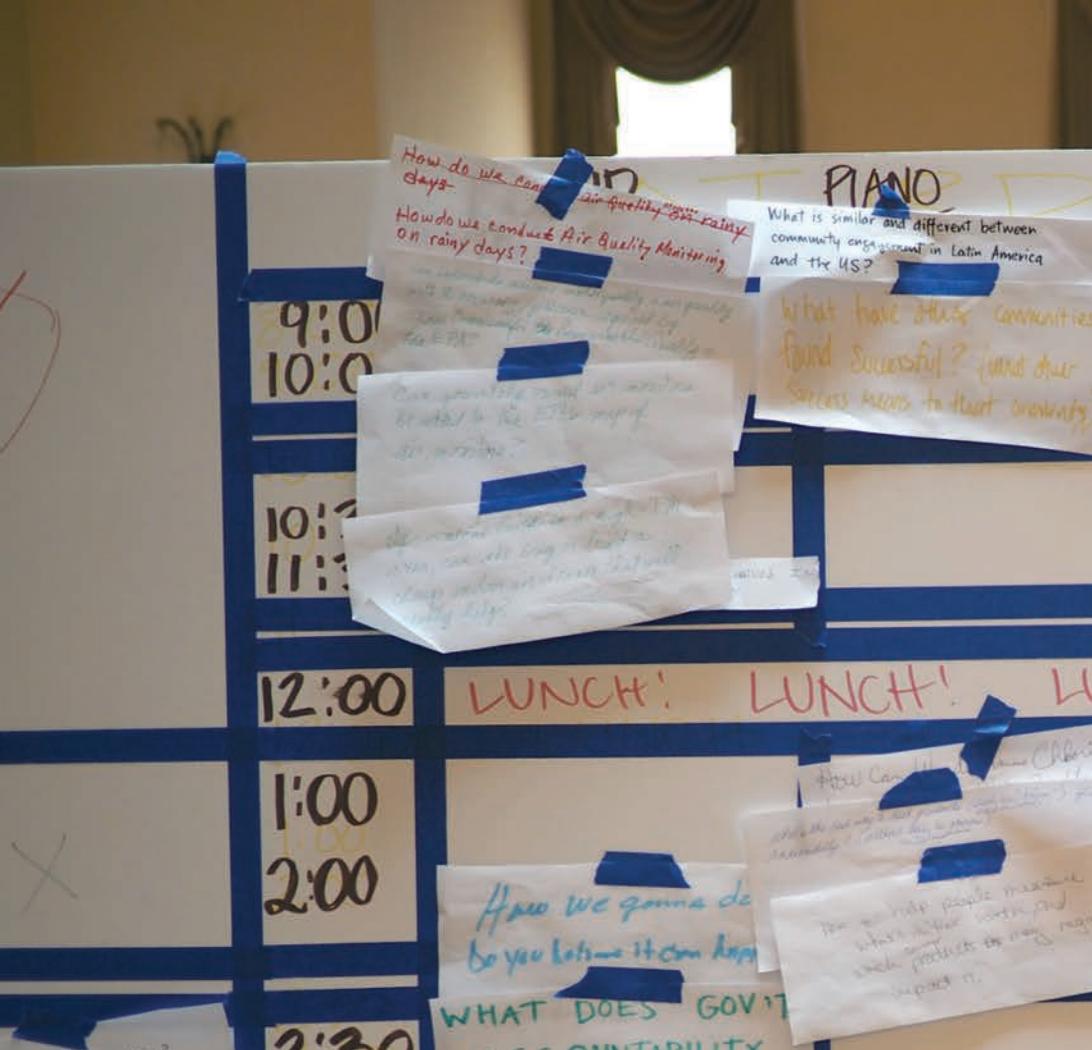
1:00  
2:00

2:30  
3:30

4:00  
5:00

5:30 or IGNITE!





## Assembling the schedule grid

### Person/Team 1:

- Roll out three pieces of 3' wide paper about 6' or 7' tall and tape it to the wall.
- Use tape or markers to visually separate the three vertical strips from each other — each strip will be one day.
- Invite Team 2 to add their signs to the schedule grid.
- Use markers or tape to make three vertical columns, one for each breakout room on each day. That'll be two lines of marker or tape per vertical paper roll.

HANDS-ON  
WORKSHOP

BIRD  
ROOM

### Person/Team 2:

- Write on printer paper: Friday, Saturday, and Sunday.
- Write the names of the three breakout spaces where sessions can be held. Write each name three times, one for each day.
- When Team 1 is ready, tape Friday, Saturday, and Sunday along the top.
- Right underneath, tape up the names of the breakout rooms under each day.

### Person/Team 3:

- Figure out how long you want each session to be (80 minutes is nice).
- Find out what time meals will be, and then figure out how many session blocks you will have in between each. Set aside an hour before each dinner for "report backs."
- After teams 1 and 2 get their taping and header signage done, along the left-hand vertical edge of the schedule grid, add signs for the starting and ending time for each meal, each session block, and each pre-dinner Report Back.
- Using marker or tape, demarcate rows across the entire schedule grid — breakfast, lunch, dinner, and an hour before dinner for report backs.
- Customize the grid: on the grid, specify the first 90 minutes to two hours of the first full day for self-organizing the schedule. Also on the grid, specify a time on Sunday when people need to clean, pack up, and be ready to leave.

### Person/Team 4:

- Fold and tear a lot of printer paper into half sheets so people can start writing down their session topics.

How to effectively  
organize horizontal networks  
in your community?

In the world of rapid cycle news, how do we get  
and keep people engaged until issues are solved?

How do we build healthy  
partnerships for positive  
collaboration on these hard  
issues?

community, ~~community~~ university, non-pro

At Public Lab Barnraisings, self-organized sessions cover a range of topics.

At the 2019 Texas Barnraising, a group met to discuss building healthy partnerships for disaster resilience. From their session notes:

*“no one knows their situation better than themselves, no matter what planning you do. at the end of the day, it’s an emergency. if you are the designated person to help, you might not be able to. it’s important to train people to think about these things themselves as a family unit, making arrangements for your own families, homes, and loved ones, understanding resources in your neighborhood and protecting those. we can provide people with tools to protect themselves, with tools to be safe for up to a week so we can take care of our own families. that’s what i want to try to help.”*

How do we hack  
the FEMA Food Box?

WHAT TOOLS NEED TO EXIST

How Can We determine Chlorine and  
how much using Water Quality Monitoring  
Systems?

## SITE VISIT PLANNING

- Mapping
- Soil Tests
- Documentation

BRADY  
- How to  
Plan a  
Site Survey

A WAY TO SUCK UP ALL THE TRASH  
FROM A DISTANT POINT OF VIEW.

HOW DO YOU ILLUSTRATE  
ENV. CHANGE TO  
FOLKS NOT EXP. IT?

Could art be used  
as a community connection?

What is similar and different between  
community engagement in Latin America  
and the US?

What have other communities  
found successful? (what other  
success means to that community)

How can we fund/fundraise for community science

How do we shift the power structures of funding?

How to build our own respirators & water filters.

WHAT DO WE THINK OF THE FIRST DRAFT OF THE CRISIS CONVENING PRINCIPLES OF COMMUNITY-BASED DISASTER RESPONSE?

COMMUNITY SCIENCE  
EMERGENCY RESPONSE  
Toolkit #1

Issues → Methods → Tools

Why AREN'T there simple, cost effective tools to test level of salt water in swamp ecosystem? If so how do citizens access them?

How we gonna do this  
do you believe it can happen?

WHAT DOES GOV'T  
ACCOUNTABILITY  
LOOK LIKE?

WHAT DO YOU DO ABOUT  
UNDOCUMENTED FOLKS  
WHO ARE AFRAID TO  
SPEAK UP ABOUT ENV. CONCERNS

Some of the session topics created by participants





## **Community-led Responses to Environmental Disasters**

by Public Lab's Open Hardware Community Manager, Bronwen Densmore

At the Texas Barnraising, we began the process of brainstorming about ways that we could better equip ourselves to respond to environmental disasters. We arranged our tools, methods, and needs on a poster — a summary of which is included on the next page. Because many of the suggestions overlapped or fit into multiple categories, some items were combined.

- Advance planning for transportation needs
- How to MacGyver with duct tape
- How to use and repair durable medical equipment
- Creating paper backups of phone trees and ways to contact people
- Mutual aid: knowing what skills and resources exist in your neighborhood
- Resource mapping
- Community tool sharing
- How to use plants: medicinal uses, food, natural mosquito repellent
- Methods for community organizing and conducting meetings
- Setting up communications plans and resources (mesh networks, satellite phones, other)
- Bio remediation tools
- Evacuation plans: pets, children, elderly, mobility impaired, etc.
- Soylent (or efficient and lasting emergency food supplies in general)
- Super Glue, duct tape, wire cutters, batteries, head lamps, etc.
- Creation of rescue teams, with knowledge and skill to intervene without endangering self/others.
- How to assess building safety/integrity/water damage (mold)
- How to start a fire
- Conflict de-escalation skills
- How to perform mental measurements

- Disaster reporting: financial, environmental concerns, baseline reports
- Self-help/resource guides, things you might have in your home that serve dual purposes.
- Microbial tests for water (for drinking/bathing/etc)
- DIY water filtration and remediation kits
- Solar power generators for communications, chargers, cooking, heating water, etc.
- Having access to medications (including morning after pills)
- Waterproof containers of various sorts
- Bleach for sterilizing and general sanitation tools
- Oil detection kits (soil and water).
- Disposable cameras (in case phones/electricity are unavailable)
- N95 masks
- Ham radio networks
- How-to skills, especially for electronics (assembly, programming)
- DIY refrigeration
- Construction skills
- Hotwiring vehicles
- Safe removal/disposal of hazardous materials

***We're adding and refining ideas at [PublicLab.org/n/18956](https://PublicLab.org/n/18956). Join us there to add your input. We'll be looking to this list to see what kinds of environmental monitoring tools we can assemble so that inexpensive/DIY options exist.***





## Working Document: Principles for an Equitable and Effective Crisis Response

When disaster strikes, people want to help. However, when it comes to helping communities in crisis, **something is not necessarily better than nothing**. If responses to disaster are not grounded in accountable relationships with the communities experiencing crisis, such well-intentioned efforts tend to waste resources and can even deepen the trauma experienced by survivors.

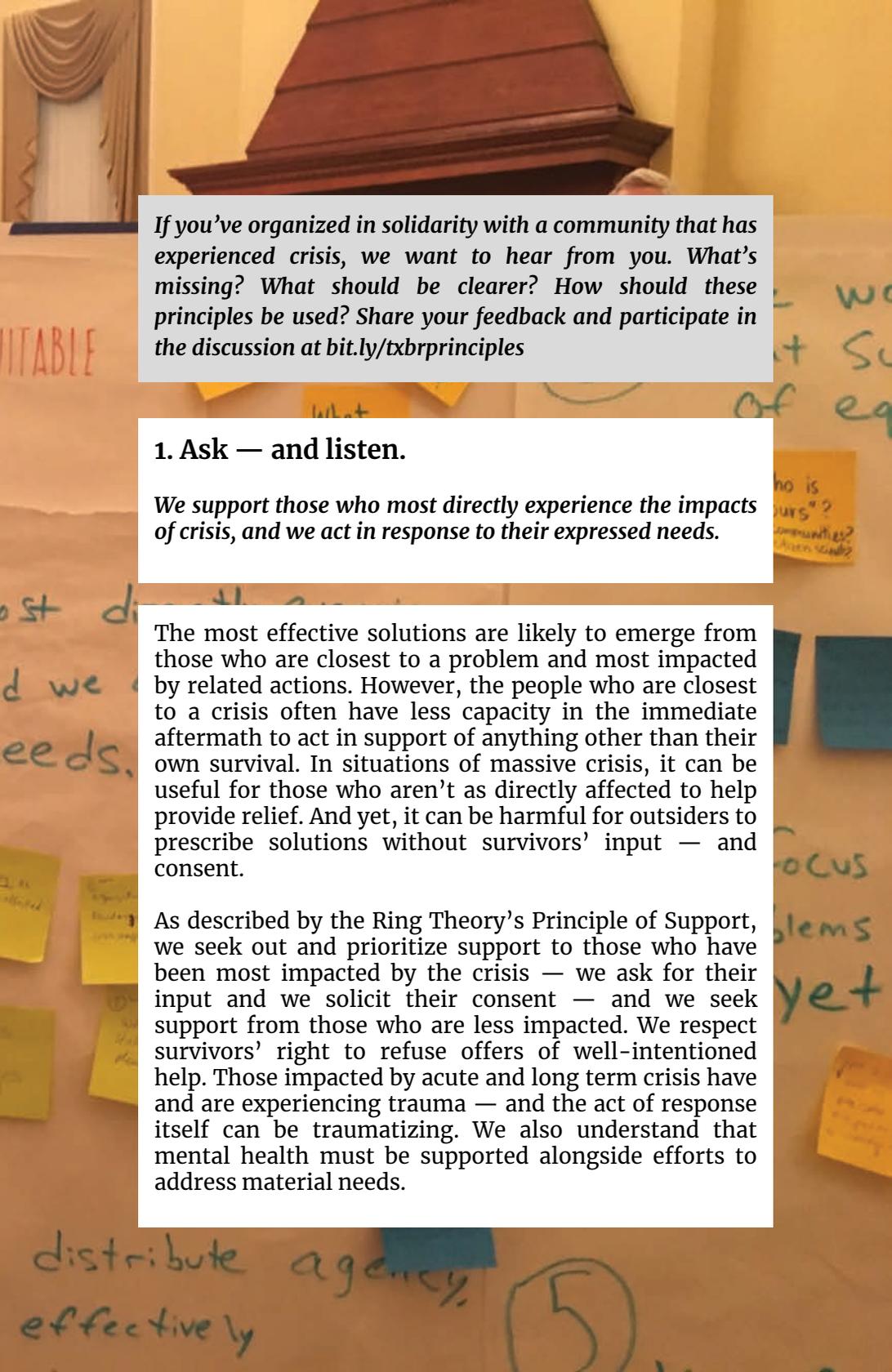
A network of people with experience in community-based disaster response — including organizers from Puerto Rico affected by Hurricane Maria, to South Florida by Hurricane Irma, to Houston by Hurricane Harvey, to New York City and the surrounding metro area by Superstorm Sandy, and to New Orleans by Hurricane Katrina — convened to discuss our experiences with these challenges at the 2018 Newark Barnraising. This dialogue continued through the 2019 Texas Barnraising, expanding to include perspectives from survivors of crises ranging from California wildfires and other places increasingly affected by everyday floods caused by climate change and sea level rise.

Through this process, we've articulated the following set of principles that reflect lessons we have learned, and guide our thinking and action in future situations. We offer these principles in hopes that they may support individuals and organizations that form networks to help a community during and after a disaster, as they find their own course through assessment, training, deliberation, action-planning, partnership development, and evaluation.

We offer these principles as an addendum to Movement Generation's Principles for a Just Recovery, which we enthusiastically affirm for the purpose of transformative, long-term recovery efforts.

②

We promote Strategies That  
So that people can most e



*If you've organized in solidarity with a community that has experienced crisis, we want to hear from you. What's missing? What should be clearer? How should these principles be used? Share your feedback and participate in the discussion at [bit.ly/txbrprinciples](https://bit.ly/txbrprinciples)*

## **1. Ask — and listen.**

*We support those who most directly experience the impacts of crisis, and we act in response to their expressed needs.*

The most effective solutions are likely to emerge from those who are closest to a problem and most impacted by related actions. However, the people who are closest to a crisis often have less capacity in the immediate aftermath to act in support of anything other than their own survival. In situations of massive crisis, it can be useful for those who aren't as directly affected to help provide relief. And yet, it can be harmful for outsiders to prescribe solutions without survivors' input — and consent.

As described by the Ring Theory's Principle of Support, we seek out and prioritize support to those who have been most impacted by the crisis — we ask for their input and we solicit their consent — and we seek support from those who are less impacted. We respect survivors' right to refuse offers of well-intentioned help. Those impacted by acute and long term crisis have and are experiencing trauma — and the act of response itself can be traumatizing. We also understand that mental health must be supported alongside efforts to address material needs.

## 2. Distribute Power

*We promote strategies that effectively distribute information, resources, and decision-making ability, so that people can most effectively adapt to their local circumstances.*

Centralized strategies often fail during mass, complex crises, because information does not flow effectively and decisions can't be made in accordance with the needs and timescales at hand.

Distributed organizing strategies allow participants to be nimble in addressing the urgent and changing needs they encounter — by using their skills, infrastructure (such as social media networks) and relationships to spread important information about needs and resources, and using their local knowledge to inform appropriate decisions.

## 3. Collaborate Strategically

*We work with institutions, to the extent that such work is in service of our goals of equity and justice.*

During disasters, formal institutions will mobilize to provide resources and assistance — and we develop strategic relationships with such institutions, yet we do so intentionally. Institutional power can ensure equitable resource allocation and other important interventions that would be difficult to accomplish entirely through distributed networks of community-based responders.

Sometimes, however, institutional powers might act to protect wealth over people, and to divert attention from harmful circumstances. We strive to hold such power accountable to the needs of those whom it purports to serve.

## 4. Seek Appropriate Solutions

*We understand that problem solving is an ongoing process requiring varied skills — and while we identify common patterns, every situation is unique.*

We can learn important lessons from history — yet we know that each situation, interaction and relationship is unique. We approach this work with humility, and create opportunities for honest reflection and self-education. We account for our mistakes, and we learn from them.

We respect labor that is often invisible — such as coordinating social media, email inboxes and more. We respect remote work and utilize remote skills, so we do not burn out.

We don't put ourselves in positions for which we are not prepared. We always aspire to “close the loop” — by following up on a request — even if the loop closes with “we can't help you now,” along with a suggestion of where else someone might look for help.

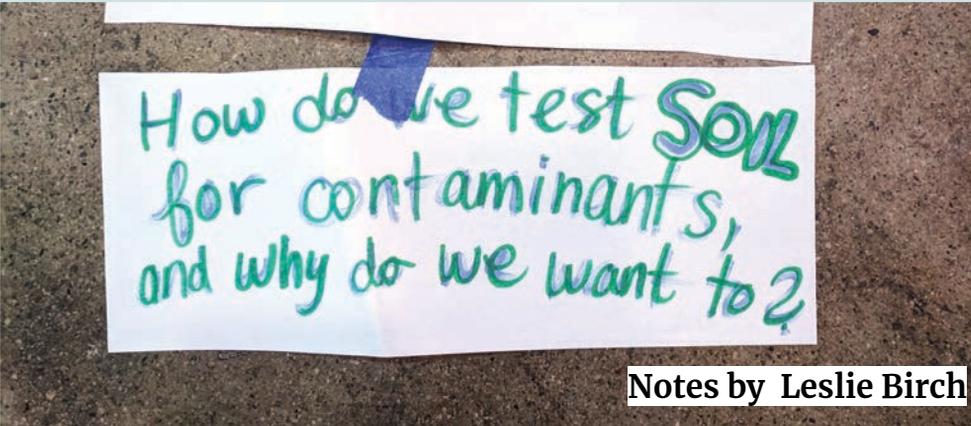
## 5. Use Appropriate Technology

*We prefer tools that are simple, accessible, freely usable, and well-documented.*

Technology can greatly facilitate, accelerate, and increase the scale of our efforts — and it can also hinder, exclude, and harm those efforts. The tools that we use matter, and so does the way that we use them.

Those who control the tools can control the work, so we prefer tools that are simple, safe, validated, interoperable, and non-proprietary (though we also recognize that sometimes these qualities are in tension with each other).

We share as much information as possible about operational matters, while also ensuring that we protect personal information (or, whenever possible, don't collect it or share it at all).



How do we test Soil  
for contaminants,  
and why do we want to?

Notes by Leslie Birch

## Using the Soil Kit by Hanby Environmental

The Hanby Field Test Kit comes in a carrying case that contains all the materials needed to perform an analysis. The Hanby Field Test Kit consists of glassware, an electronic balance, reagents for 15 tests, video and written instructions, and all other components necessary for the 15 analyses. Eleven calibration photographs of more common substances (fuels, solvents, transformer oils, used motor oil, and others) are included in the kit. Additional calibration photographs can be obtained from the vendor.

The kit we have is used to test for petroleum hydrocarbons. Kit is accurate within 10% (which is good!). At site, look and smell for potential contamination and source like manufacturing. How to do test with kit? (has a mobile app) Must choose to test low range, high range or both. Put empty beaker on scale and 0 out. When testing, use protective safety goggles, gloves, and gravity (keeping samples low away from nose/mouth). Put 5g of soil into beaker using spoon. Add solvent into beaker and stir with handle of spoon. Pour contents into test tube up to the fill line on the tube. Sediment will stay in bottom of beaker--that is ok. Add white catalyst powder (aluminum chloride) into test tube. Shake for a few minutes on/off. Use a phone to take a pic of sample in test tube against a white piece of paper using monotone setting (our eyes can't be trusted for color). You should use Hanby's color swatch book to compare the sample color to narrow down which contaminant might be present. Use Hanby's mobile app to take a photo and crop--the app will look at its library of known contaminants.

More info is available at [hanbytest.com](http://hanbytest.com). They have a water test available as well!











## Hands-on at the Kits Corner

Though much of the Barnraising is focused on discussion and process, it's important to have something you can do with your hands, too!

Through hands-on building sessions, participants at the 2019 Texas Barnraising used the Kits Corner to explore concepts of monitoring, open technology, and making through the construction of some of Public Lab's newer, collaboratively built kits.



## Learn more about some of the projects people built:

The Community Microscope  
> [PublicLab.org/micro](https://PublicLab.org/micro)

The Papercraft Spectrometer  
> [PublicLab.org/paper](https://PublicLab.org/paper)

The Coqui conductivity sensor  
> [PublicLab.org/coqui](https://PublicLab.org/coqui)

The Simple Air Sensor  
> [PublicLab.org/simple](https://PublicLab.org/simple)









Sunday at the Barnraising, we went to Tidwell Park in Houston. The park is right by the community center and has active baseball and soccer fields, basketball courts, a playground, and a nature trail that runs alongside Halls Bayou. We spent some time balloon mapping, then a group went to do some soil testing along the banks of the bayou.







## Soil Testing at the Houston Barnraising

by Public Lab's Community Science Soil Testing Fellow,  
Danielle Stevenson

### Where were we?

Sunday at the Barnraising we went to Tidwell Park in Houston. The park is right by the community center and has active baseball and soccer fields, basketball courts, a playground, and a nature trail that runs alongside Halls Bayou. We spent some time balloon mapping, then a group went to do some soil testing along the banks of the bayou.

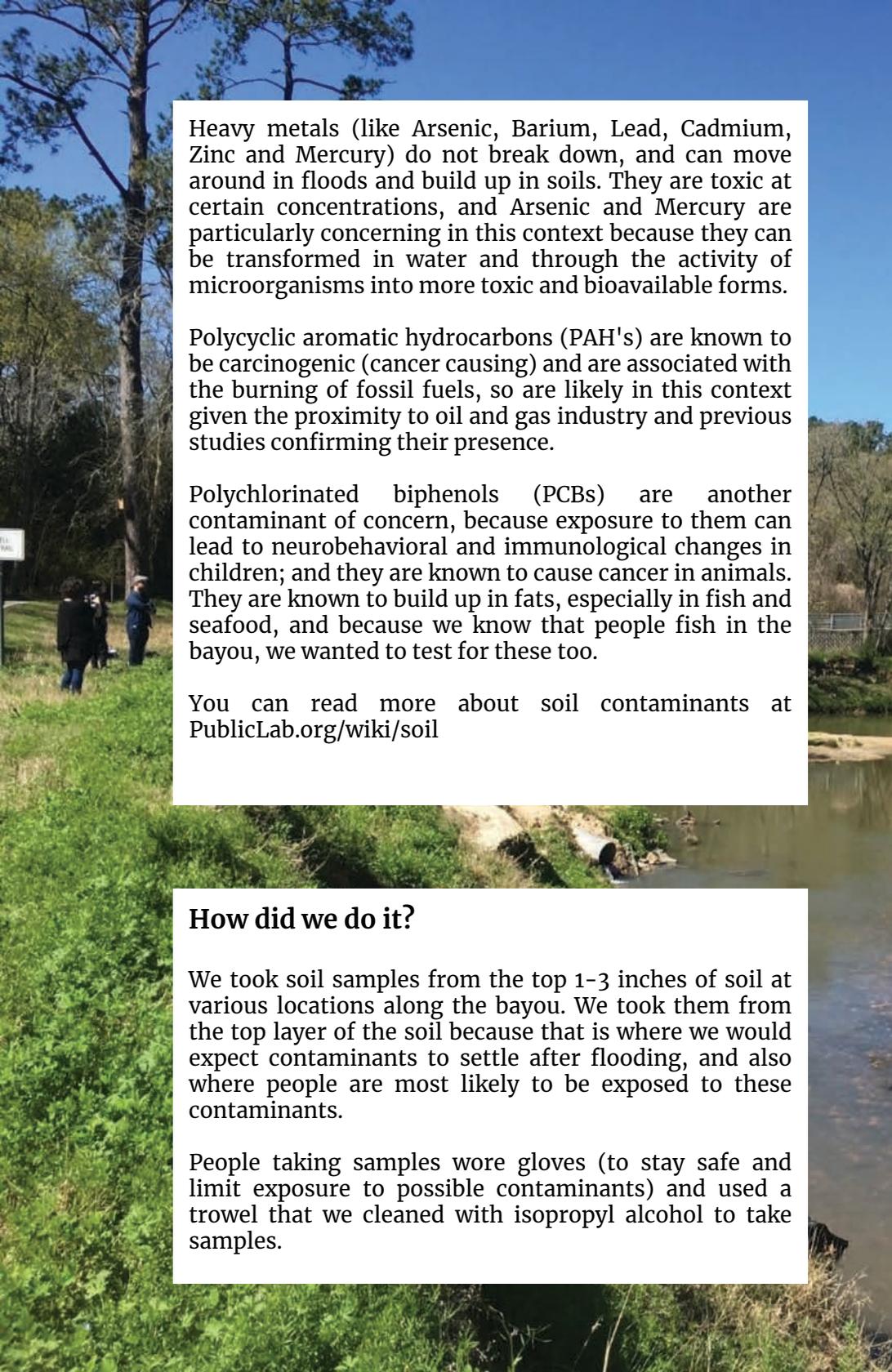
The community around the park is concerned about contaminants in the soil, because the bayou at the back of the park flooded during Hurricane Harvey, and backs up regularly. Hurricane Harvey re-distribute(d) contaminants from nearby oil and gas industry sites, Superfund sites, and wastewater treatment plants throughout Houston and left contaminants- such as heavy metals and polycyclic aromatic hydrocarbons (PAH's)- behind on the soil as it drained. These contaminants are absorbed by the soil and can stay on the top of the soil where people can be exposed to them, or move through the soil profile to the groundwater. This poses a public health issue, as exposure to these contaminants- especially for children- can have negative health effects.

One study done with soil samples pre and post Harvey in Manchester neighborhood, Houston, found that PAH's were widespread throughout the neighborhood, and that they were moved around during Harvey. Read more at: <http://bit.ly/TXFLOOD>

## What did we test for?

We tested the soil for heavy metals, PAH's, and PCB's given the community's concerns, the site history, and the risk of exposure for children playing at the park and people living nearby and/or fishing in the bayou. This type of soil testing can contribute to 'baseline data' in environmental justice neighborhoods and help the understanding of what contaminants have been left behind in the soil and water as a result of the industry in Houston and the flooding events associated with the hurricane so that people have information to reduce exposure to these contaminants of concern and be informed about the impacts of industry in their area.



The background image shows a natural setting with tall trees on the left, a grassy area with a few people in the middle ground, and a body of water (a bayou) on the right. The sky is clear and blue.

Heavy metals (like Arsenic, Barium, Lead, Cadmium, Zinc and Mercury) do not break down, and can move around in floods and build up in soils. They are toxic at certain concentrations, and Arsenic and Mercury are particularly concerning in this context because they can be transformed in water and through the activity of microorganisms into more toxic and bioavailable forms.

Polycyclic aromatic hydrocarbons (PAH's) are known to be carcinogenic (cancer causing) and are associated with the burning of fossil fuels, so are likely in this context given the proximity to oil and gas industry and previous studies confirming their presence.

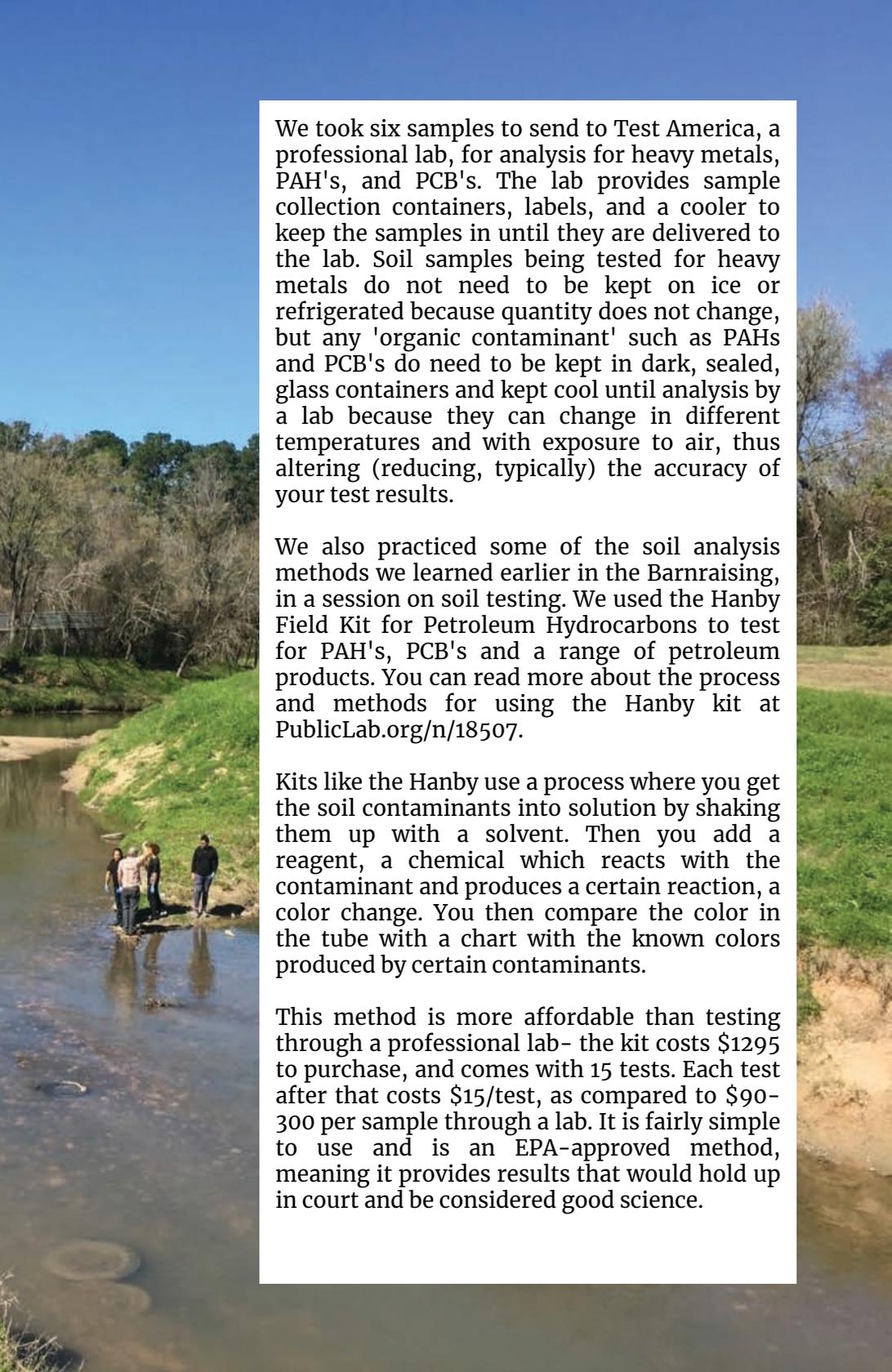
Polychlorinated biphenols (PCBs) are another contaminant of concern, because exposure to them can lead to neurobehavioral and immunological changes in children; and they are known to cause cancer in animals. They are known to build up in fats, especially in fish and seafood, and because we know that people fish in the bayou, we wanted to test for these too.

You can read more about soil contaminants at [PublicLab.org/wiki/soil](http://PublicLab.org/wiki/soil)

## How did we do it?

We took soil samples from the top 1-3 inches of soil at various locations along the bayou. We took them from the top layer of the soil because that is where we would expect contaminants to settle after flooding, and also where people are most likely to be exposed to these contaminants.

People taking samples wore gloves (to stay safe and limit exposure to possible contaminants) and used a trowel that we cleaned with isopropyl alcohol to take samples.



We took six samples to send to Test America, a professional lab, for analysis for heavy metals, PAH's, and PCB's. The lab provides sample collection containers, labels, and a cooler to keep the samples in until they are delivered to the lab. Soil samples being tested for heavy metals do not need to be kept on ice or refrigerated because quantity does not change, but any 'organic contaminant' such as PAHs and PCB's do need to be kept in dark, sealed, glass containers and kept cool until analysis by a lab because they can change in different temperatures and with exposure to air, thus altering (reducing, typically) the accuracy of your test results.

We also practiced some of the soil analysis methods we learned earlier in the Barnraising, in a session on soil testing. We used the Hanby Field Kit for Petroleum Hydrocarbons to test for PAH's, PCB's and a range of petroleum products. You can read more about the process and methods for using the Hanby kit at [PublicLab.org/n/18507](https://PublicLab.org/n/18507).

Kits like the Hanby use a process where you get the soil contaminants into solution by shaking them up with a solvent. Then you add a reagent, a chemical which reacts with the contaminant and produces a certain reaction, a color change. You then compare the color in the tube with a chart with the known colors produced by certain contaminants.

This method is more affordable than testing through a professional lab- the kit costs \$1295 to purchase, and comes with 15 tests. Each test after that costs \$15/test, as compared to \$90-300 per sample through a lab. It is fairly simple to use and is an EPA-approved method, meaning it provides results that would hold up in court and be considered good science.





The Balloon Mapping Kit

Community Mapping Kit

THE UNIVERSITY OF ADELAIDE

# the Barnraiser



"We don't own the land, it owns us."

- Juan

Community members with...  
 (faded text)



SCOTT ON  
 NOTES FROM  
 LAND ACKNOWLEDGEMENT

VANESSA - SO THAT,  
 WHO CARES IF THE  
 CAVALRY DOESN'T  
 COME?



SOLAR  
 RETRORIGATED  
 (LEIS) FOOD CONTAINERS

WHAT ARE WATER  
 + AIR FILTERS  
 MADE OF? - DEBATE

LIKE SWAMP  
 SWEETEST POTATO  
 - WASH THEM  
 FRESHLY WASHED

## MAKING MAPS WITHOUT MAPS; AND TOO MANY LAYERS

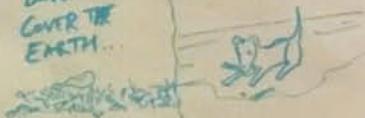
A SESSION

A GROUP GATHERED TO  
 BRAINSTORM; EASY MAPPING  
 COMBINING ENVIRONMENTAL  
 DATA WITH DATA ON  
 HISTORICAL RACISM, WHAT  
 HAPPENS WHEN COMMUNITIES  
 PRODUCE DATA FOR THE CITY  
 AND DON'T HEAR BACK,  
 AND WHETHER OPEN  
 MAPPING EFFORTS CAN AVOID  
 PARTIAL OR PREJUDICED  
 DATA.

MUCH  
 DATA...  
 MANY  
 LAYERS...  
 BUT ALSO  
 NOT ENOUGH!

A LAYER  
 OF CHICKEN  
 BONES WILL  
 COVER THE  
 EARTH...

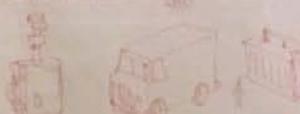
DOGS EAT  
 THE CHICKEN



ON INTERVIEW TO...  
 (faded text)



...  
 (faded text)



...  
 (faded text)

(faded text on lined paper)

CLASSIFIEDS

AVAILABLE  
PURPLE  
MR. MORRIS  
ASK JEFF

- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

## Creating the Barnraiser

The Barnraiser is our one-page mini newspaper published during the Barnraising. Participants are encouraged to share notes, lessons, and memories from the event, and these are hung on a poster-sized layout. Volunteers from the documentation committee (DocCom) then assemble the notes in a final layout, add photographs, and print it to share with their fellow Barnraisers. Some excerpts from the 2019 Texas Barnraising issue are on the following pages.


  
 FOCAL  
 CONTAMINANT  
 IT'S A PAIN  
 ARE BEING  
 BE HURT  
 AND NOT  
 THEY DEAL WITH KIDS +  
 YOUNG PEOPLE  
 WE NEED TO ENGAGE KIDS AS  
 FACILITATORS, NOT DIRECTORS.  
 HOW CAN WE...  


WE APPRECIATE YOUTH... THEIR  
 GREAT COMMUNICATIONS  
 INSTAGRAM, YOUTUBE, TWITTER...  
 NEW SPACES, PROGRAM SPACES TO  
 ORGANIZE  
 GOAL: INVITE KIDS IN VIA SOCIAL MEDIA  
 Q on AESTHETICS (LOVE) 
 SOME  
 CULTURE  
 P.L.Y. HELPS  
 ANIMATES  
 PLATFORMS +  
 SKILLS THAT BUILD  
 THE SKILLS  
 "HELP SOMEONE OUT"  
 WE INVITE IN LEADERS! BUT WE NEED ROLE!

how do  
 away kind  
 Causes Pol  
 nasty smel

1 1 1

MARDI GRAS CROWD  
ABDUCTS BARNRAISERS.

THE ENCHANTING SOUNDS  
OF MARDI GRAS SE-  
duced a group of  
innocent bystanders.

The incident took  
over half an hour  
of the afternoon  
sessions. Participants  
were released and  
seen wearing  
sketchy   
jewelry.



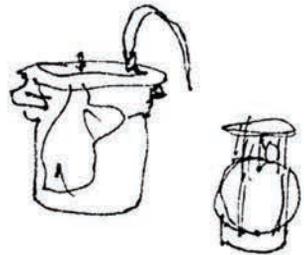




DUST SENSORS

BEST FOR COMPARATIVE WORK: WITH SEVERAL DUST SENSORS IN DIFFERENT PLACES

DYLOS, PURPLE AIR, DUSTBAND



BUCKET SAMPLER

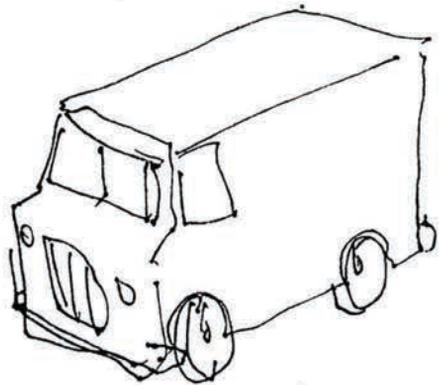
~~MAIL LAB~~ SEND TO A LAB; SAMPLE ANY TIME, ~\$300 ea,

TESTS FOR GASES.



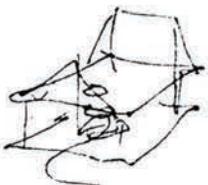
MINIVOL SAMPLER

SEND TO LAB, CAN DISTINGUISH PARTICLE TYPES?



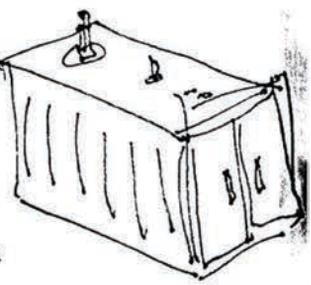
MOBILE TRUCK-BASED MONITORING

OFTEN CITY-RUN, SENSORS VARY,



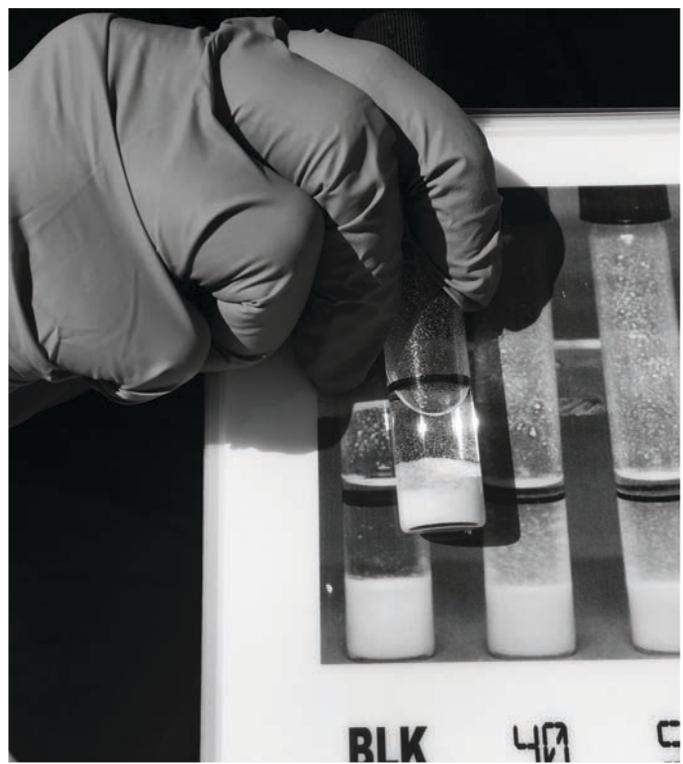
MICROSCOPES

LOOK AT  
PARTICLES,  
HARD TO  
QUANTIFY



FEDERAL  
REFERENCE METHODS

EPA CERTIFIED,  
EXTREMELY  
EXPENSIVE,  
\$1 PER LITER



# KIDS WANT SKILLS

---

---

HAS PUBLIC LAB OR ANYONE  
CONVENED A CONFERENCE  
FOR YOUTH?

KIDS WANT SKILLS TO  
TAKE THEM WHERE THEY  
WANT TO GO, WHETHER  
PROGRAMMING IN UNITY, OR  
BECOMING YOUTUBE SLIME  
STARS.

KIDS TEACH KIDS, AND  
KIDS RAISE KIDS.

IN CRISIS, KIDS WANT  
FAMILIES TO BE ABLE TO  
DO FOR THEMSELVES, TO  
LEARN + TEACH HOW TO BUILD  
HOUSES.

OLDER PEOPLE ARE STILL  
USING FLICKR LIKE ITS 2004,  
BUT OLDER PEOPLE WORRIED ABOUT CRED-  
-IBILITY THE MOST, MORE THAN  
AGING.

HOW  
BE MO  
INVOL  
COMMU  
SCIEN

---

ITS  
THAT PE  
AFRAID  
WILL BE  
'JUST F  
AND NO  
SERIOUS  
WORK V  
+ YOUNG  
WE NEED  
ENGAGE  
FACILITAT

CAN KIDS  
MORE  
INVOLVED IN  
COMMUNITY SCIENCE  
PROJECTS??

A PROBLEM  
PEOPLE ARE  
DOING THEIR WORK  
AND BE CALLED  
FOR EDUCATION  
NOT TAKEN  
SERIOUSLY IF THEY  
WORK WITH KIDS  
AND OTHER PEOPLE.  
NEED TO  
TREAT KIDS AS  
PARTICIPANTS, NOT

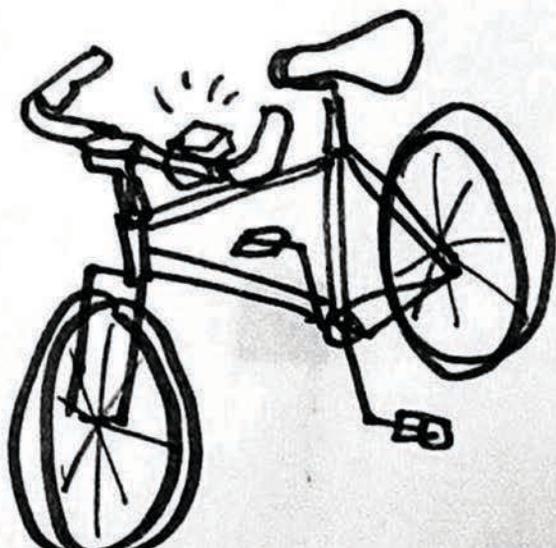


DONT  
TOUCH YOUR  
EYES  
AFTER TOUCHING  
THIS WATER

BY ACTING AS  
DIRECTORS.

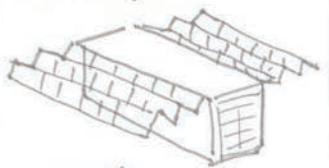


WOULD KIDS LIKE  
BIKE LIGHTS THAT  
DETECT DUST  
POLLUTION?



# THE OYSTER DRILL

WHAT ARE THOSE HOLES  
IN THE EASTERN FLYING  
MUREX?? ARE THEY  
BIRDS? NO! ARE THEY  
WORMS? NOPE! IT'S THE  
OYSTER DRILL (AKA A  
PREDATORY SEA SNAKE)!  
LUCKILY YOU CAN  
BLANCH ~~THEM~~, PICKLE,  
PRESERVE OR EAT WITH  
DRAWN BUTTER. SO  
DO YOUR PART TO MAKE  
THE GULF A LITTLE  
SAFER FOR THE  
FRIENDLY OYSTER.



SOLAR  
REFRIGERATED  
CRISIS FOOD CONTAINER

### ACADEMIC BLUNDER OVER CHICKEN BONES

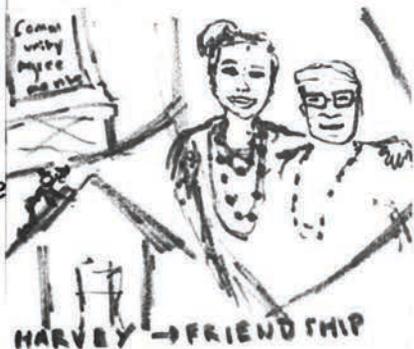
Fragile academy was exemplified over a session with a recent example of a professor who believed in a post-apocalyptic world with a layer of chicken bones covering Earth. Said theory was refuted by masons in rural El Salvador by pointing out that dogs eat chicken bones. A proposal to put masons in charge of peer reviews is being considered.

A LAYER  
OF CHICKEN  
BONES WILL  
COVER THE  
EARTH...



I REMEMBERED  
AN IMPORTANT  
IDEA I'D  
FORGOTTEN  
WHEN...

I saw the  
world thru  
Someone  
else's eyes.



HARVEY → FRIENDSHIP

DOGS EAT  
THE CHICKEN



I CAME IN  
EXPECTING...

that I  
wouldn't be so  
embraced by ppl's  
personal stories &  
communities

BUT I WAS  
SURPRISED BY...  
~~How~~ how quickly  
it was to feel  
comfortable ~~and~~  
accepted, empowered,  
and embraced by  
community / Luv

WHAT ARE WATER  
+ AIR FILTERS  
MADE OF? - DEBORAH

LIFE STRAW?  
MICHAEL PRITCHARD  
+ MANY MORE...  
PUBLICLAB.ORG/FILTERS

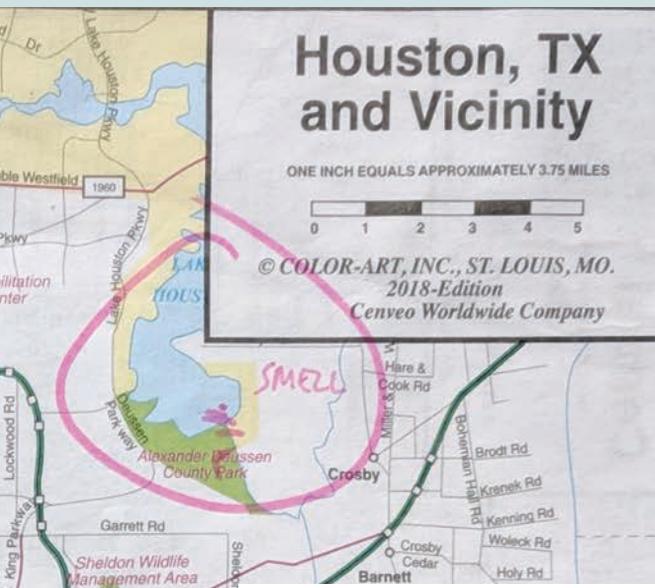




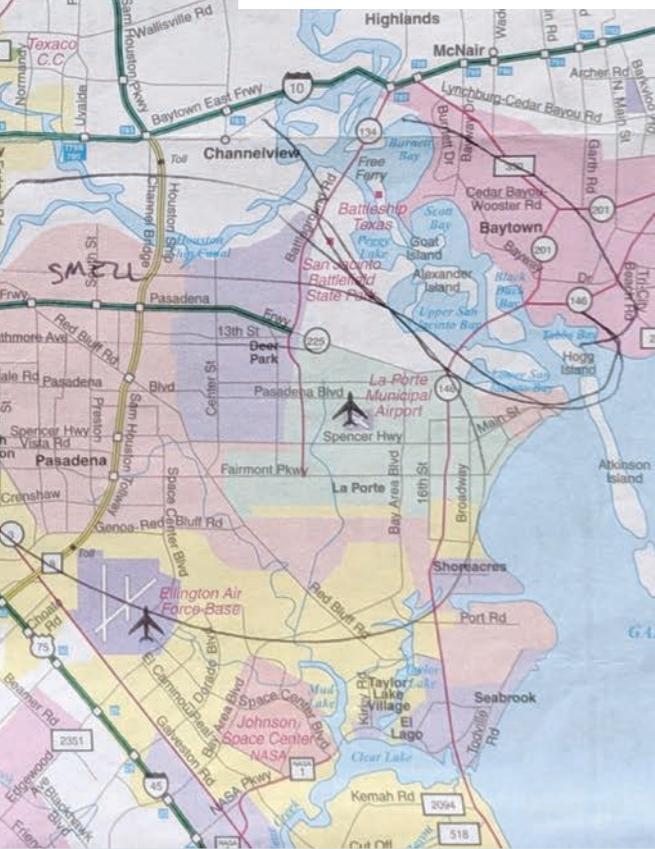
# Lessons learned @ Galveston Barnraising:

- F.F.F.F.  
(forge friendships  
for funding)
- DIYs are  
better than  
store buys
- SCIENCE  
REMADE OR  
JUSTICE DELAYED!
- GERMS can  
rave :-:-





Drawn by a guy at the car rental counter:  
diagram of environmental issues in the area, and  
smells.





**susanjacobson**  
@susanjacobson

Greg Bloom shows the principles of effective community organizing around disasters. #TXBarraising @PublicLab

**zengir2** • Following

zengir2 Evan of @citizensciencecommunityresource showing off his #diy soil sampling kit @publiclab #barraising #texas #citizenscience #science #pollution #environment #health

25w mymissionresearch Excellent photo!

25w 1 like Reply

Liked by **ivanitalandsome and 20 others**

FEBRUARY 23

Add a comment...

**Diego Torres**  
@magictorres

Cerrando actividades luego de dos intensos y hermosos dias. Ideas y discusiones geniales. Mucha profundidad y respeto. Gracias @PublicLab, @sdosemagen, @lizbarry. Son maravillosos.

Translate Tweet

**zengir2** • Following

zengir2 Emilio from @Reaccion\_Net showing off a new game to explore #environmental and #social issues @publiclab #barraising #community #citizenscience #texas #environment

26w ehsantgy Dope 🙌

26w Reply

26w stevo\_944 Hey love the content

26w Reply

26w have2it Nice! 🙌🙌

26w Reply

Liked by **voight\_kampf\_test and 25 others**

FEBRUARY 23

Add a comment...

**Shannon Dosemagen**  
@sdosemagen

A Galveston #mardigras parade passed by the #TXbarraising, perfect time for a pic of the group decked out :)

**eustatic1** • Following

eustatic1 #barraising Galveston sand is all the same size and mostly the same color. I wonder if that's the effect of beach nourishment

25w

120 views

FEBRUARY 25

Add a comment...

**Public Lab**  
@PublicLab

Starting off the last night of ignite talks with @susanjacobson on living w/ climate change in south Florida. #TXBarraising

**zengir2** • Following

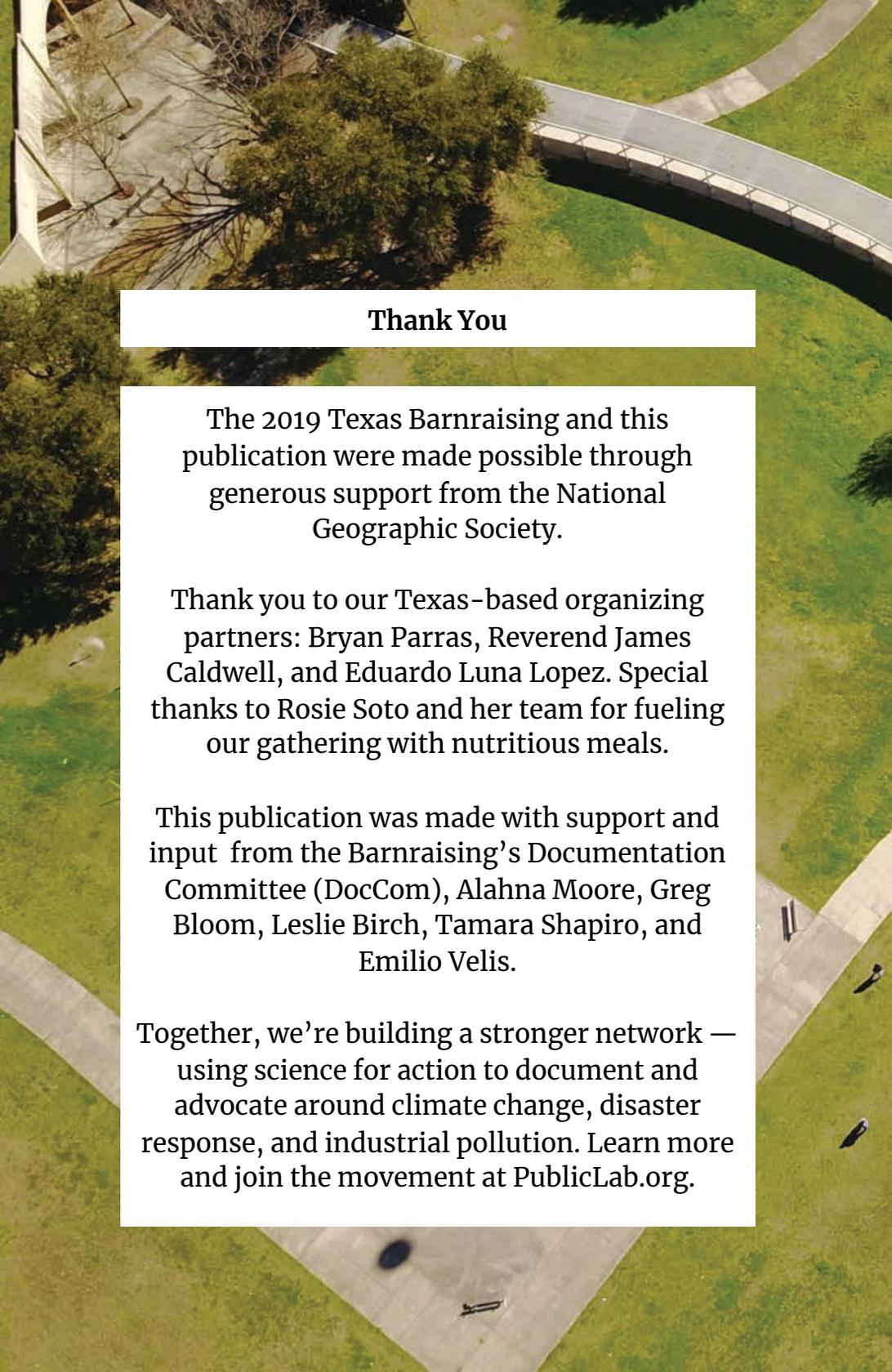
zengir2 Lauren from @iwawa\_online talking about #waterquality issues in her #community @publiclab #barraising #water #citizenscience #science #pollution #health

25w

Liked by **eustatic1 and 15 others**

FEBRUARY 23

Add a comment...



## Thank You

The 2019 Texas Barnraising and this publication were made possible through generous support from the National Geographic Society.

Thank you to our Texas-based organizing partners: Bryan Parras, Reverend James Caldwell, and Eduardo Luna Lopez. Special thanks to Rosie Soto and her team for fueling our gathering with nutritious meals.

This publication was made with support and input from the Barnraising's Documentation Committee (DocCom), Alahna Moore, Greg Bloom, Leslie Birch, Tamara Shapiro, and Emilio Velis.

Together, we're building a stronger network — using science for action to document and advocate around climate change, disaster response, and industrial pollution. Learn more and join the movement at [PublicLab.org](https://PublicLab.org).







