

# Civic Science

... *and the*

# *Politics of Participation*

*Nitin Sawhney*

*Professor of Practice*

*Department of Computer Science*



# Cooperative Innovation in the Commons

Posted by Nitin  
January 25, 2019

<http://nitinsawhney.org>

Home

## Cooperative Innovation in the Commons: Rethinking Distributed Collaboration and Intellectual Property for Sustainable Design Innovation

Addressing global design challenges in the environment and underserved communities requires a cooperative approach towards sustainable

design innovation, one that embraces multidisciplinary expertise, participatory design and rapid dissemination of critical innovations in the field. How can a rural farmer in Botswana cooperatively develop appropriate solutions for his community with external research expertise? How can a doctor in Sao Paulo access a network of medical device companies to help manufacture her design innovation? While there is a great emphasis on large breakthrough R&D innovations, there is often little support for developing and disseminating small-scale, affordable, and locally sustainable designs.

The open source phenomenon has been influential in the software community, however distributed collaboration in engineering design requires awareness and sharing of physical artifacts, design tools and working environments as well as novel mechanisms to support social norms, communities of practice, and intellectual property rights for product innovations. ThinkCycle was created as a web-based collaboration platform with tools and shared online spaces for designers, domain experts and stakeholders to discuss, develop and peer-review evolving design solutions in critical domains. Over 2000



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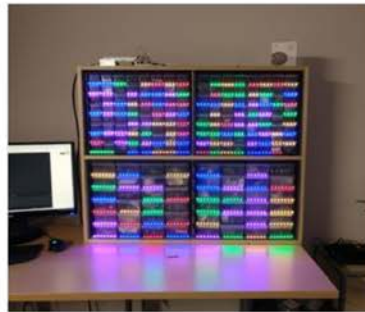
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by Inventor22 in Leds

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by dakcheungcheng in Arduino

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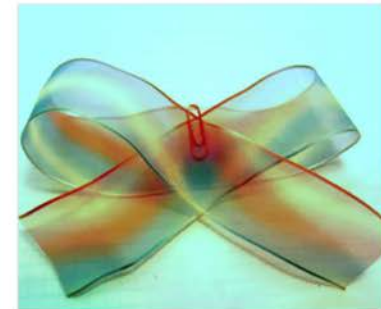
**Dronecoria: Drone for Forest Restor...**  
by aracon in Remote Control



**Huge Flexible Transparent LED Matri...**  
by inshuaw in Leds



**Automated Cocktail Drink Machine**  
by CamdenS5 in Arduino



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# Environment Air Quality Monitor

By rjkorn in Circuits > Sensors 12,228 241 8 Featured



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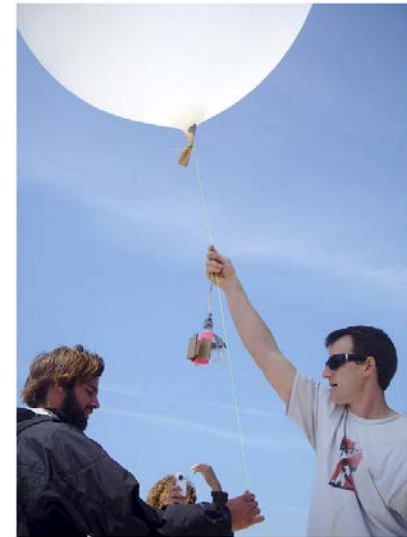
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Using inexpensive DIY techniques, we seek to change how people see the world in environmental, social, and political terms. We are activists, educators, technologists, and community organizers interested in new ways to promote action, intervention, and awareness through a participatory research model.

[PublicLaboratory.org](http://PublicLaboratory.org)



Balloon mapping kit variations

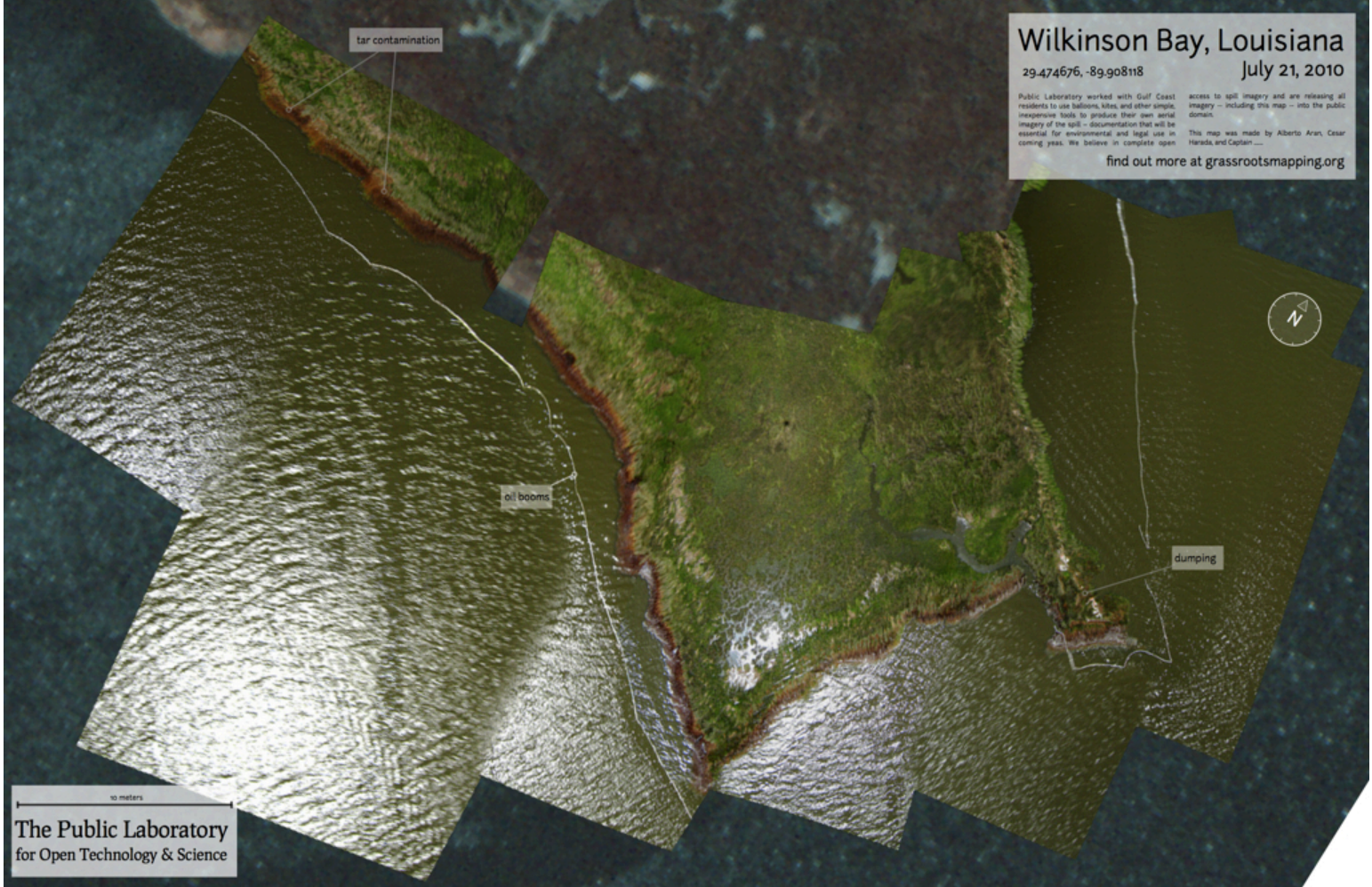


Adam Griffith

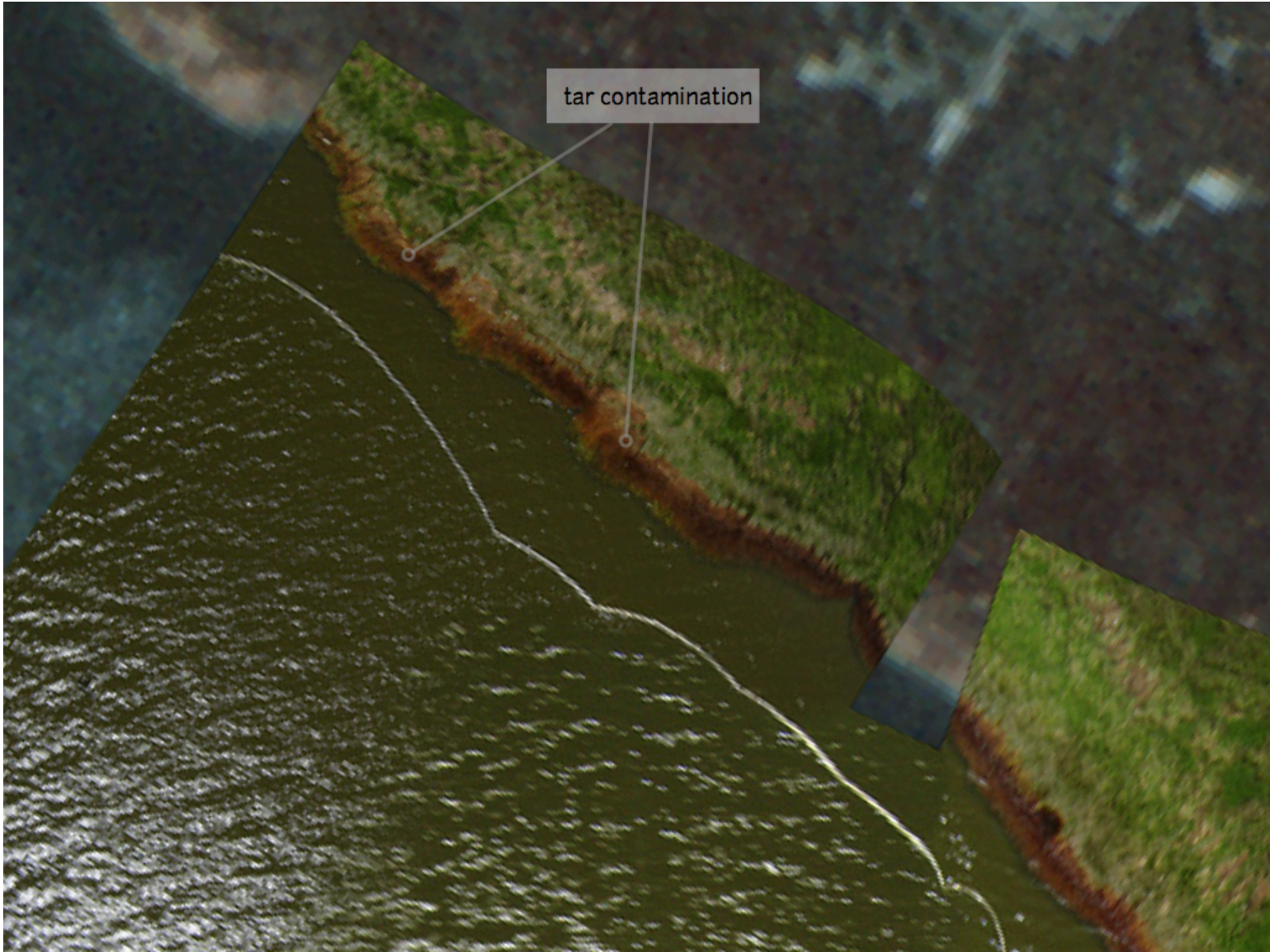


Grassroots mappers monitor  
burnoffs during the Deepwater  
Horizon oil spill





10 meters  
**The Public Laboratory**  
for Open Technology & Science



tar contamination

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Search

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# The Public Laboratory Archive

Welcome to the Public Laboratory's open data archive. To better fulfill our goal of producing of new open-source data sets, this site serves as the repository of those sets online, and as a starting point for the discourse we hope they will spark.

With that end in mind, we strive to provide not only a comprehensive set of open and legible formats for the data, but mechanisms for discussing, adding to, and applying this data. This is a curated set which we've carefully packaged and annotated, with everything from the raw data to interviews, commentary, and videos related to the data's capture.

New data sets will be made available regularly, and an upcoming printed serial map is coming soon.

[Subscribe here](#) to receive updates on new content in the archive.

## Recent Maps



[Wherecamp, Stanford, Palo Alto, California](#)

April 24, 2011



[Grand Isle, Louisiana](#)

February 25, 2011



[Gowanus Canal, Brooklyn, New York](#)

March 27, 2011



## Browse maps

## Region:

- [Gulf Coast](#)
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## Need help making a map?

Do you have a site in mind which you'd like to map? Looking for collaborators or just need some tips and advice?

- Join the [mailing list](#) -- it's full of people all over the world who are offer advice and support
- Contact [Public Laboratory staff](#) directly
- Read about [balloon mapping](#) and assemble [your own kit](#)



**This map was made for under \$200** by volunteers using a helium balloon, a digital camera, and a boat.

Know an area that needs to be mapped? Get in touch:

team@publiclaboratory.org

(504) 358-0647

### Reimagining the data lifecycle

Shannon Dosemagen & Jeffrey Warren

When we discuss how, and where, data is gathered, we often think of it in terms of the physical world. But what if we could gather data in a way that is more dynamic, more responsive, and more integrated into the lives of the people who live in the area?

One approach to this is the use of citizen science. Citizen science is a form of science in which non-professional scientists participate in the collection and analysis of data. This can be done in a variety of ways, from simple data collection to more complex data analysis.

We are concerned that to date, much of so-called citizen science treats people like mere data points. This is a problem because people are not just data points; they are also citizens with their own voices and experiences to share.

### The Public Laboratory for Open Technology & Science

The Public Laboratory for Open Technology & Science (PLATO) is a non-profit organization that provides open access to technology and science. We are committed to making science and technology accessible to everyone, regardless of their background or resources.

### On Site

An interview with Barbara Marcotte

How do you think about the map? What does it tell you about the area?

It's a very powerful map. It shows the extent of the oil spill and the damage it has done to the environment. It's a stark reminder of the impact of human activity on the natural world.

What are your suggestions for what to do next? How can we protect the area from further damage?

We need to take action now. We need to stop the oil from flowing into the bay and we need to clean up the spill. We also need to take steps to prevent future spills from occurring.

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## Wilkinson Bay Louisiana

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July 22, 2010

Public Laboratory for Open Technology & Science  
Cambridge, Massachusetts  
http://publiclaboratory.org/wb2010

Public Laboratory served with Gulf Coast residents to use balloons, kites, cameras, and other simple, inexpensive tools to produce their own maps of the oil spill. Information from all the maps was combined into a single map that shows the extent of the oil spill and the damage it has done to the environment.

Map: Robert Long, Adam Griffin and others from Public Laboratory  
http://publiclaboratory.org/wb2010



### Wetlands loss

Wetlands are a vital part of the coastal ecosystem. They provide a natural barrier against storms and hurricanes, and they also provide a habitat for many species of plants and animals.

The oil spill has caused significant damage to the wetlands in Wilkinson Bay. The oil has killed many plants and animals, and it has also caused the wetlands to become more saline.

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### They say that they are doing this under the guidelines of protecting people. Well, you're not protecting people if you intentionally leave them outside of a levee protection system and flood them.

The guidelines for protecting people are not enough. We need to take more steps to protect the people who live in the area. We need to make sure that they are not left outside of a levee protection system and flood them.

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### MRGO,

the Mississippi River Gulf Outlet Canal is a canal along the Gulf of Mexico coast. It was built to provide a shortcut for ships traveling between the Gulf of Mexico and the Atlantic Ocean.

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**Public Laboratory Do-It-Yourself Guides**

Part of our mission at Public Laboratory is to provide simple and accessible tools and guides to help you get started mapping and using the data you collect. We have developed a series of guides to help you get started with mapping and using the data you collect. These guides are available for free download at <http://www.mapping.org/guides>.

**Grassroots Mapping with Balloons or Kites**

This guide is a step-by-step manual for how to use balloons or kites to map an area. It includes instructions on how to build a balloon or kite, how to launch it, and how to use the data you collect to create a map. The guide is available for free download at <http://www.mapping.org/guides>.

**Use the map above to help monitor Wilkinson Bay, LA**

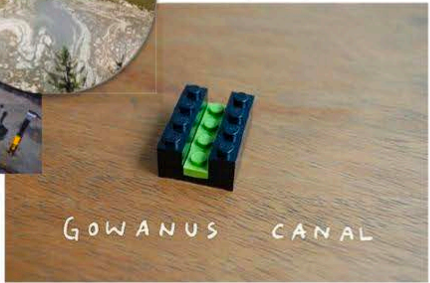
Can you get to the site shown above? Look out for:

- Visible pollutants or contamination from oil or other sources?
- General observations about the health of the ecosystem?
- Signs of respiratory problems or other human health problems near the site, for yourself or others?
- Changes to the area itself (is it flooded)?
- Changes you've observed from getting to the site? (changes, has the area been transformed since the spill?)

Public Laboratory  
P.O. Box 4090  
Cambridge MA 02142



Amid, NYCDER 1990, Seepage Tom Grabel 2010



"Studgie" Superfund mascot Anna Martin 2009

# A Visual History of the Gowanus Canal

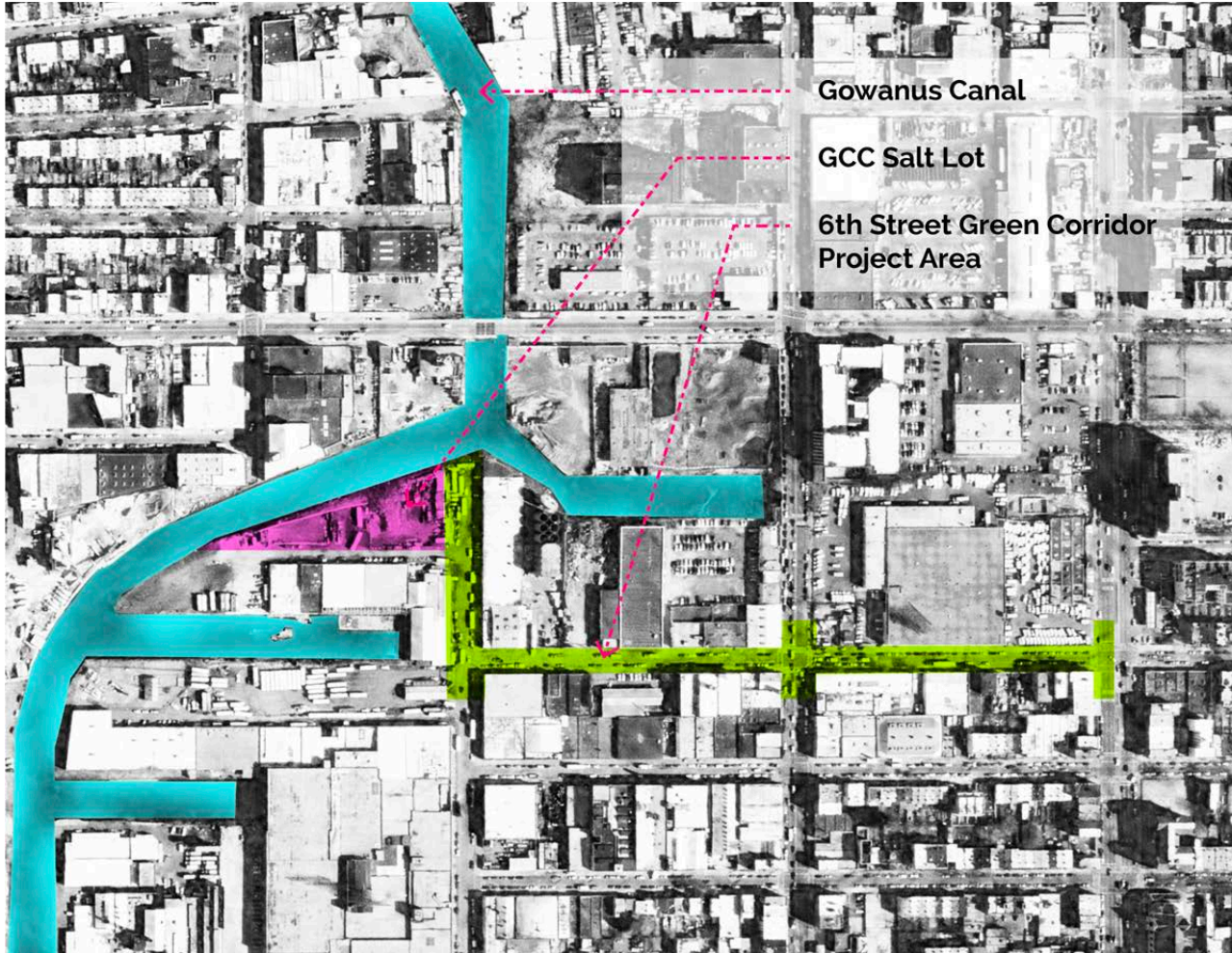




Gowanus Canal  
Sewershed Boundary

GCC Salt Lot

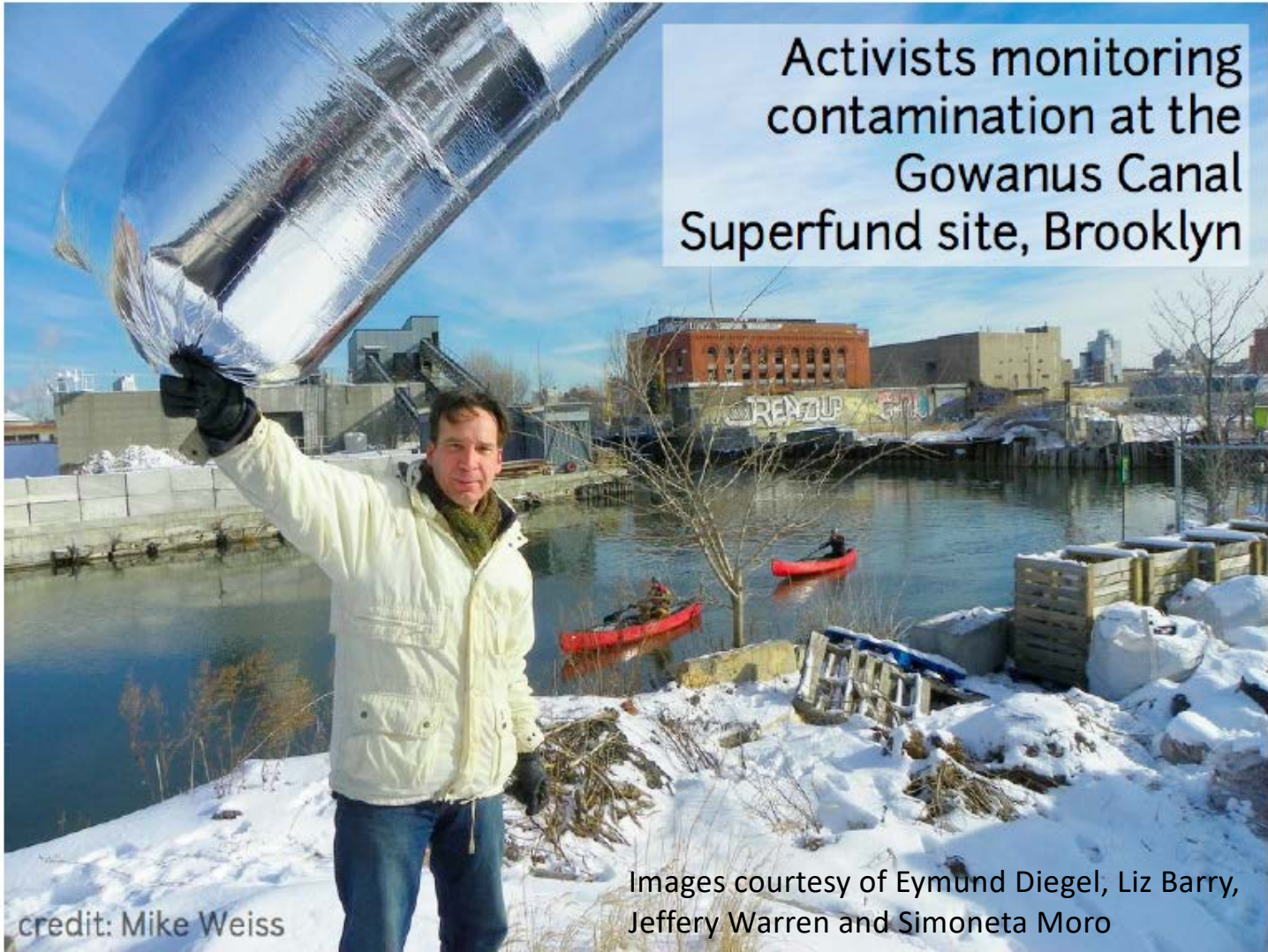
6th Street Green Corridor  
Project Area



Gowanus Canal

GCC Salt Lot

6th Street Green Corridor  
Project Area

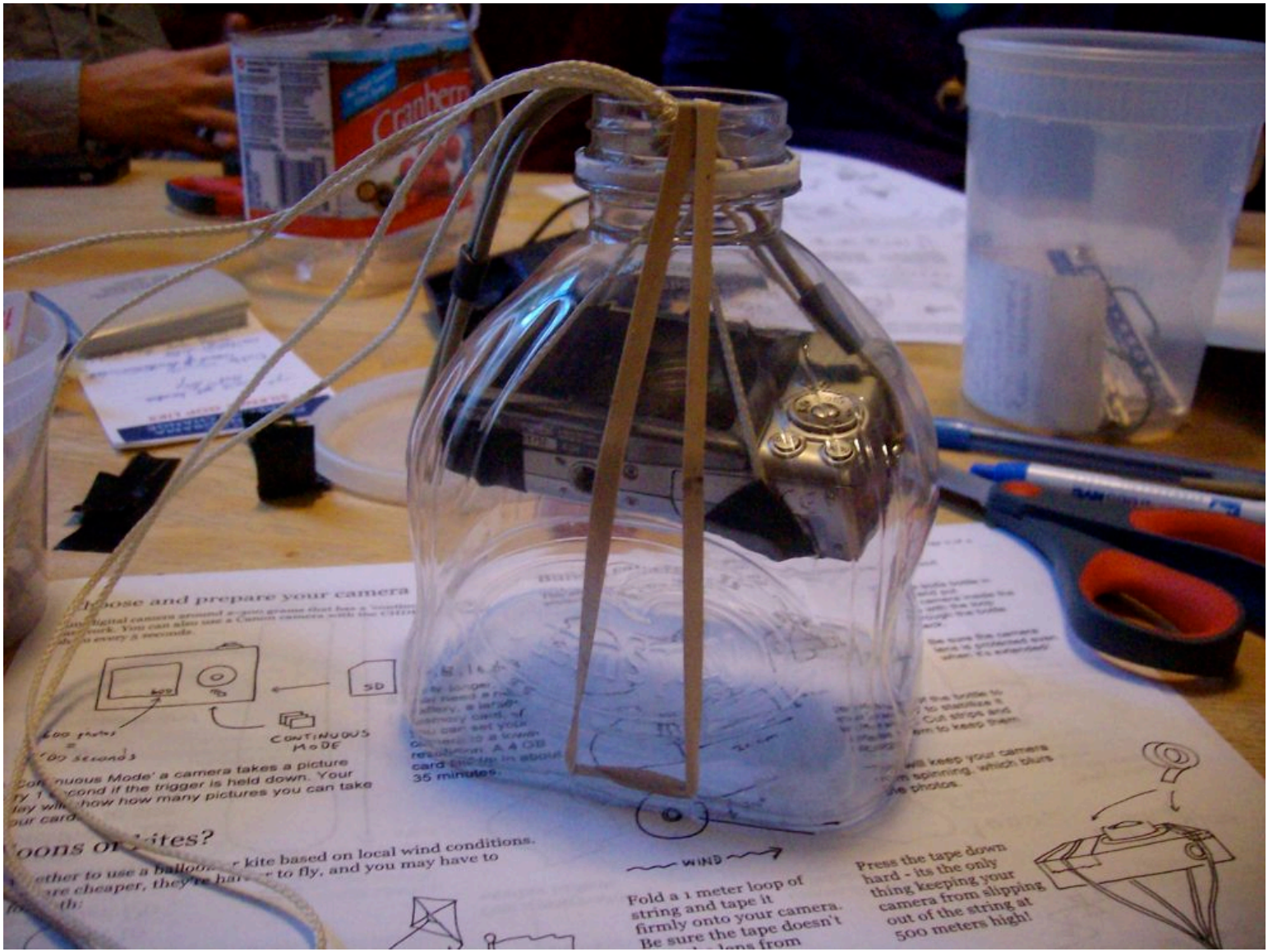
A man in a white winter jacket and blue jeans stands on a snow-covered bank of a canal. He is holding a large, crumpled silver thermal blanket up in the air with his right hand. The canal is in the background, with a red kayak and a person in a red kayak visible. Buildings and a graffiti-covered wall are visible in the distance. The sky is blue with some clouds.

Activists monitoring  
contamination at the  
Gowanus Canal  
Superfund site, Brooklyn

credit: Mike Weiss

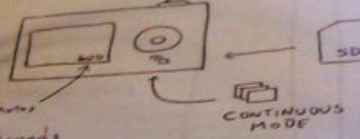
Images courtesy of Eymund Diegel, Liz Barry,  
Jeffery Warren and Simoneta Moro





### Choose and prepare your camera

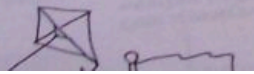
Digital cameras around a 2-gum camera that has a shutter release button. You can also use a Canon camera with the C-1221...



Continuous Mode a camera takes a picture every 1 second if the trigger is held down. Your display will show how many pictures you can take on your card.

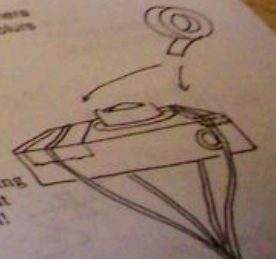
### Options or kites?

Other to use a balloon or kite based on local wind conditions. Balloons are cheaper, they're easier to fly, and you may have to...



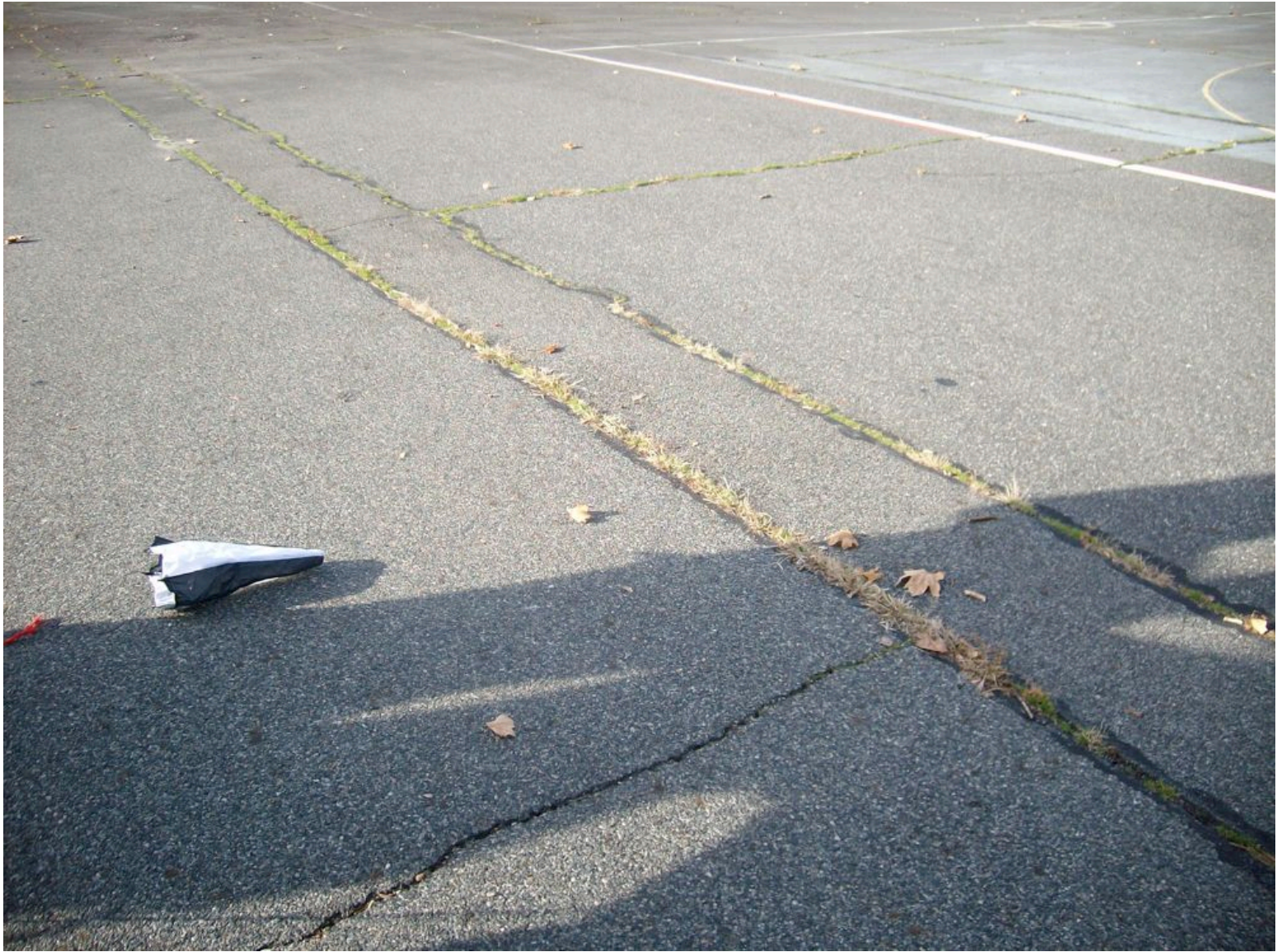
WIND  
Fold a 1 meter loop of string and tape it firmly onto your camera. Be sure the tape doesn't... lens from

Press the tape down hard - its the only thing keeping your camera from slipping out of the string at 500 meters high!













Freeke's  
(Brouwer's)  
Tidal Mill  
Pond

1645 - First  
Flour Mill  
in America

Butler St

**KITE PHOTO  
CAPTURES  
SILT  
ACCUMULATING  
IN PUDDLE**

**OPPORTUNITY?**

**NEW 3RD AVENUE STORM SEWER**

Dough



















*canoe*

*solid waste*

*melted ice  
from  
inflow*



*Cement plume, New Town Creek,  
Brooklyn, Aug 2011*

# Public Laboratory: Make an Infrared Camera

by jeferonix



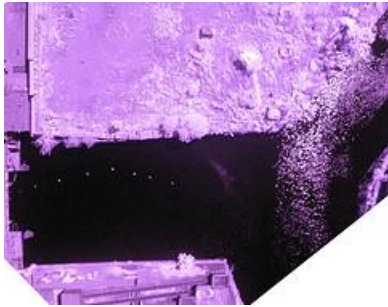
07:07 / 23:14

CC 360p + YouTube





24.06.2009 18:47



*Gowanus Canal, Brooklyn, Summer 2011*

# The Gowanus Canal will never be clean

New development will ensure the canal maintains its reputation as "The Lavender Lake" far into the future.

January 17, 2020 Joseph Alexiou



The Gowanus Canal cleanup, which is estimated to last two-and-a-half years, will get underway by fall.

Photo: Rob Abruzzese/Brooklyn Eagle

The emphasis of the workshop will be to create designs in which bicycles are reimagined as tools to measure air quality, using inexpensive air sensors and arduino prototyping platforms. The focus will be more on the creation of ideas and a discussion around what's possible.

**May 7 12:00 pm 1:00 pm (or later)**

the p.irateship  
Somerville, MA  
438 Somerville Ave

contact mike @  
248.761.1346  
m\_sty@hotmail.com  
to sign up and/or ask  
questions

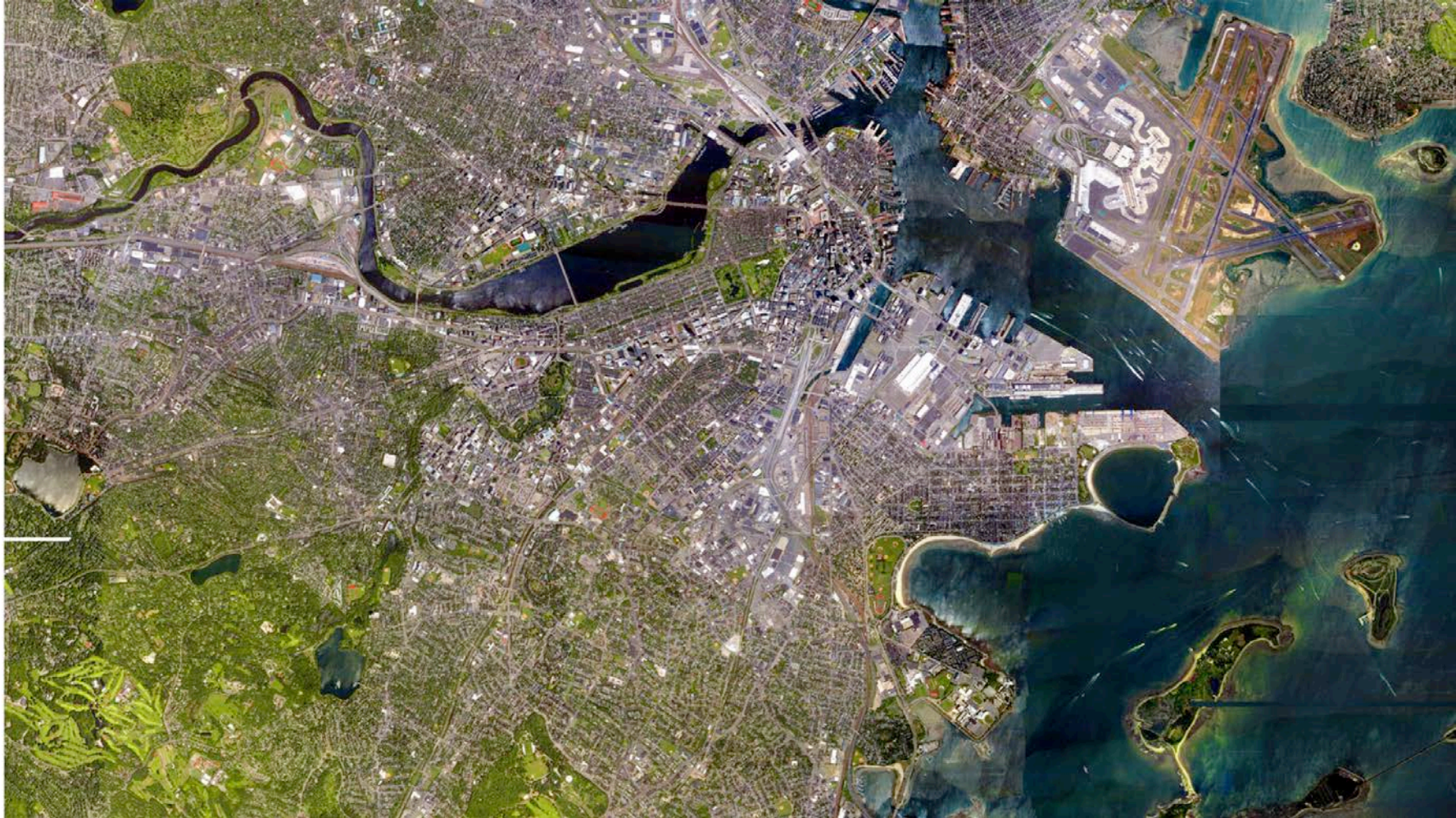
→ DESIGN+  
→ AIR SENSING+  
→ YOUR BICYCLE



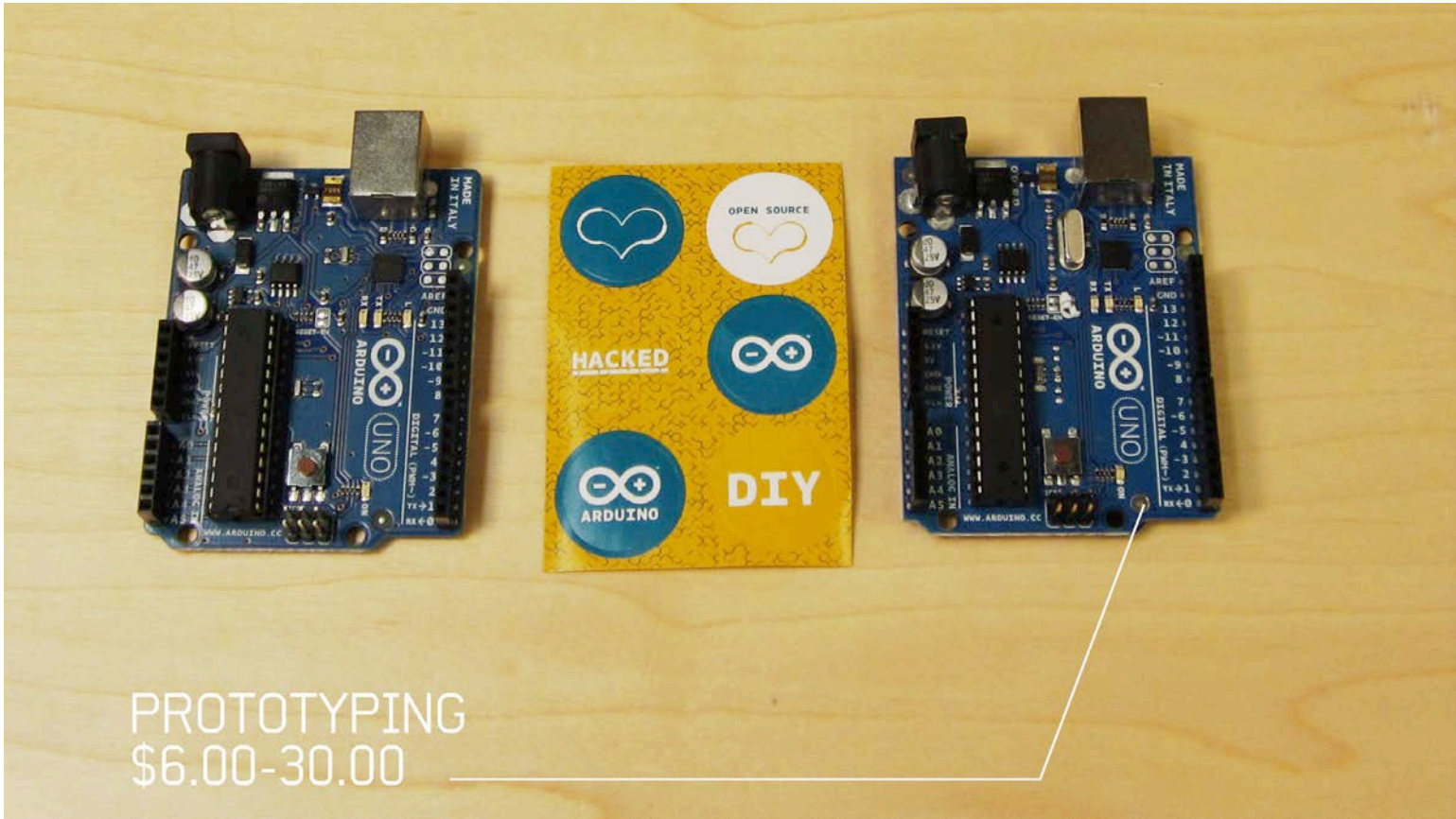
ACTUAL AIR

Project by Mike Styczynski (Harvard GSD) for  
Tactical Design Studio

Nitin Sawhney at MIT Program in Art, Culture  
and Technology, 2010-2011



Mapping Air Pollution neighborhoods of Boston, MA



PROTOTYPING  
\$6.00-30.00



## SENSORS

figaro tgs 820  
automobile  
and diesel exhaust

figaro tgs 822  
voc

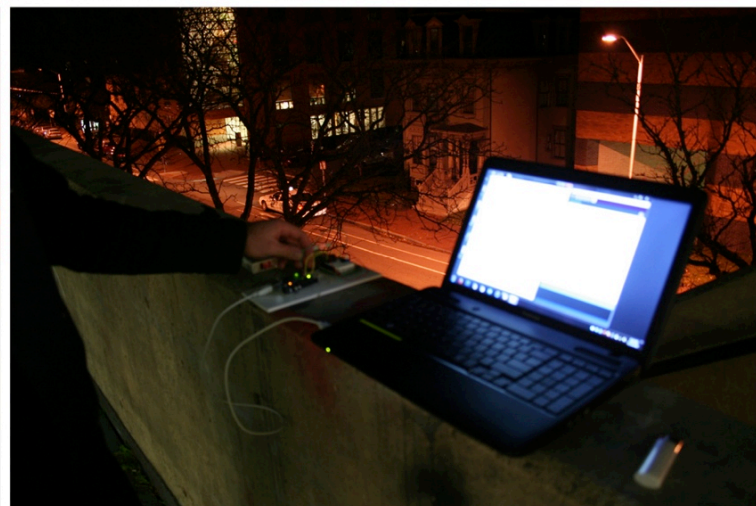
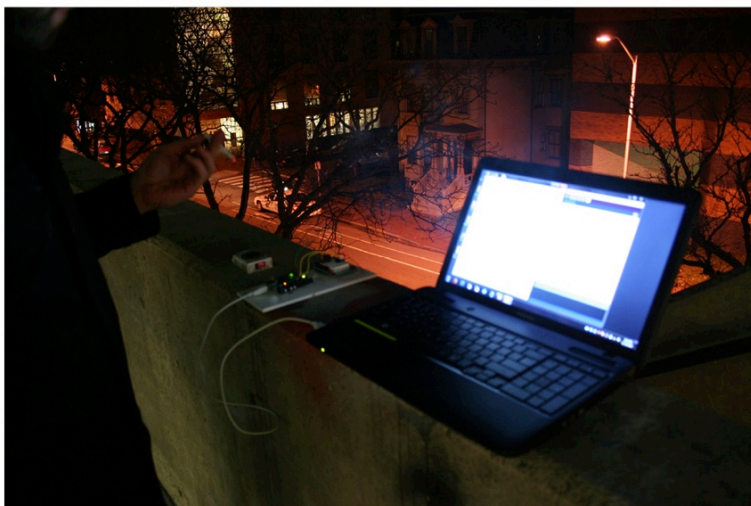
**\$6.00 - 20.00**

FIGARO		
2201	2 pcs.	INSPECTOR
	pcs.	DATE
	pcs.	11-16-10
TOTAL	pcs.	REMARKS

MADE IN JAPAN

FIGARO	
2201	2
TOTAL	

MA



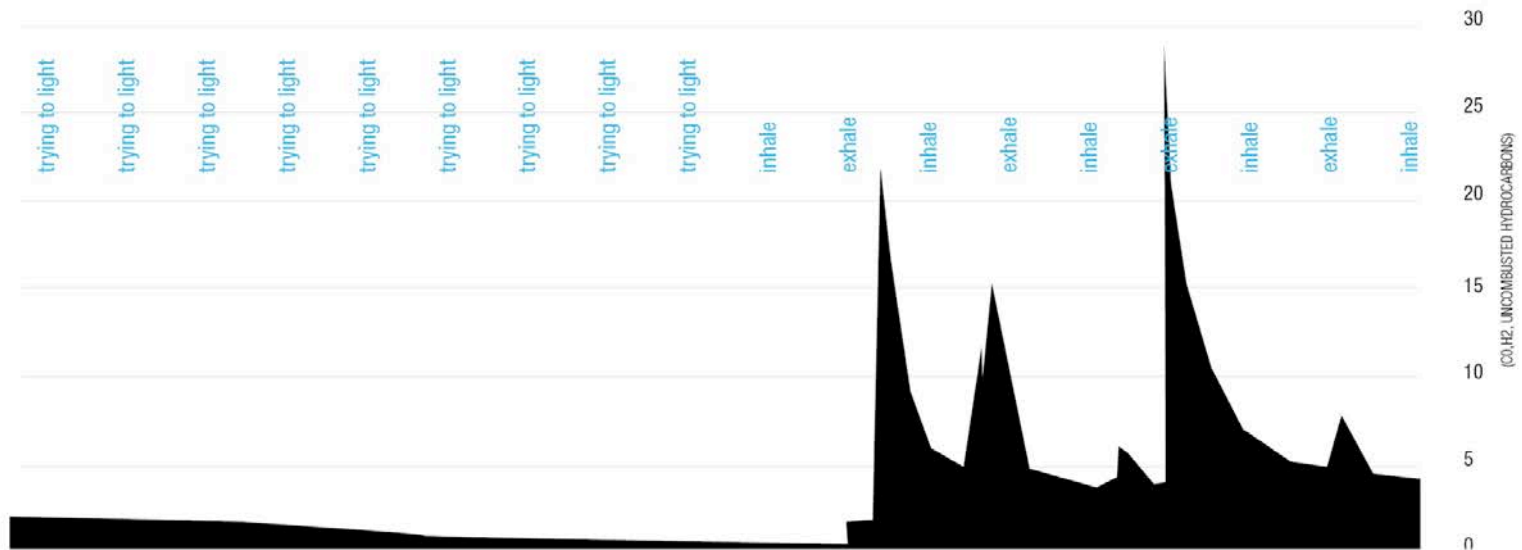


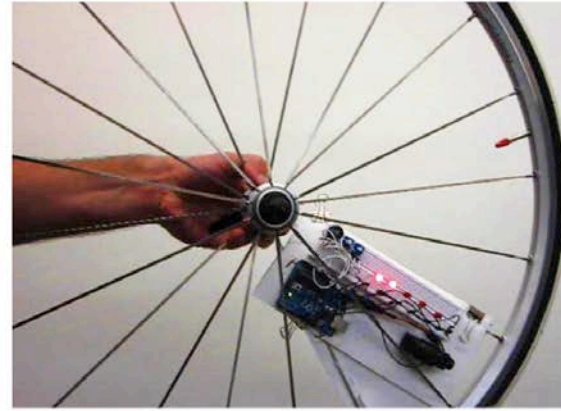
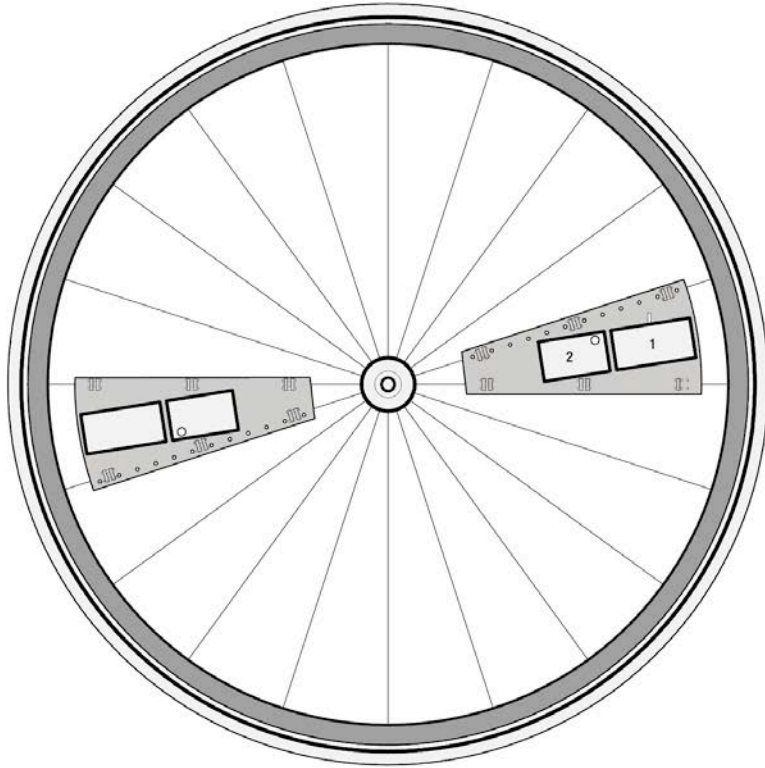
# UNFILTERED LUCKY STRIKES

11.17.10  
HARVARD GSD  
10:30 a.m

figaro 2010 TGS 2201 GASOLINE EXHAUST GAS  
CO,H2, UNCOMBUSTED HYDROCARBONS

avg	2.57
low	0
high	29



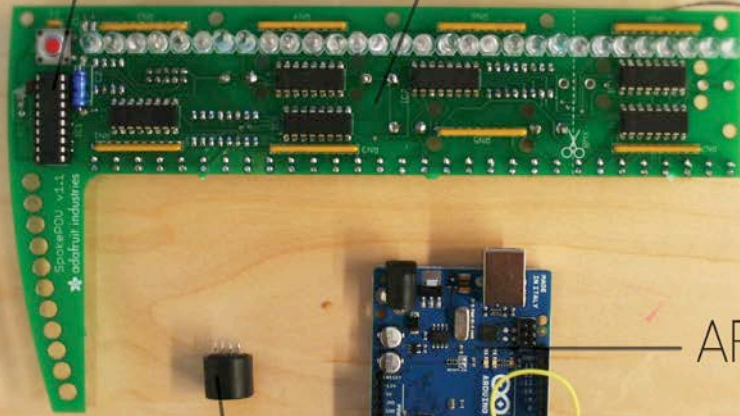




PERSISTENCE  
OF VISION  
DISPLAY

RECONFIGURED CHIP

“SPOKEPOV”

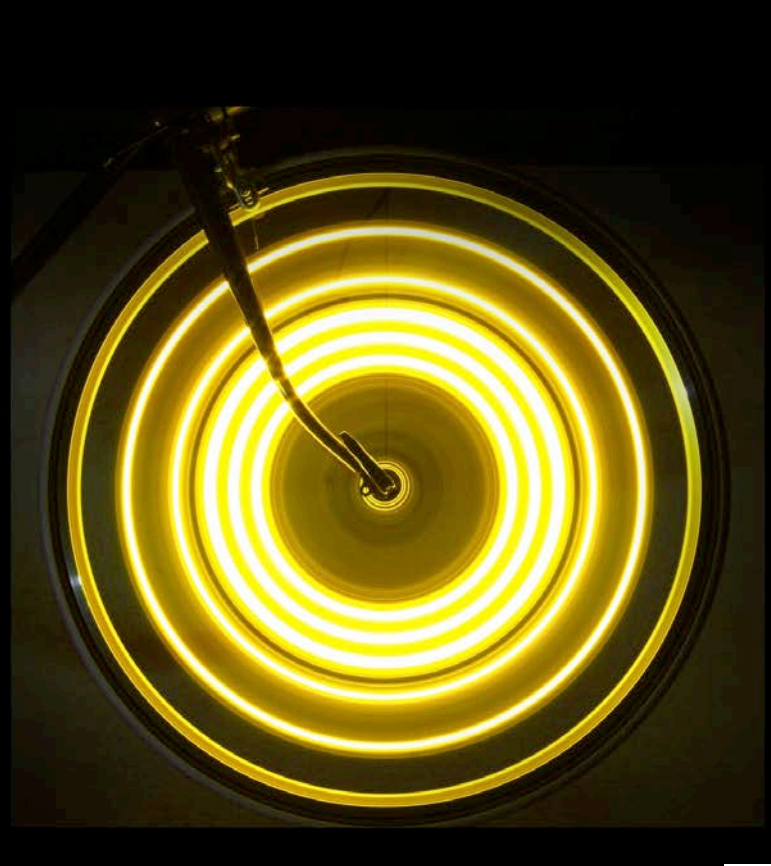


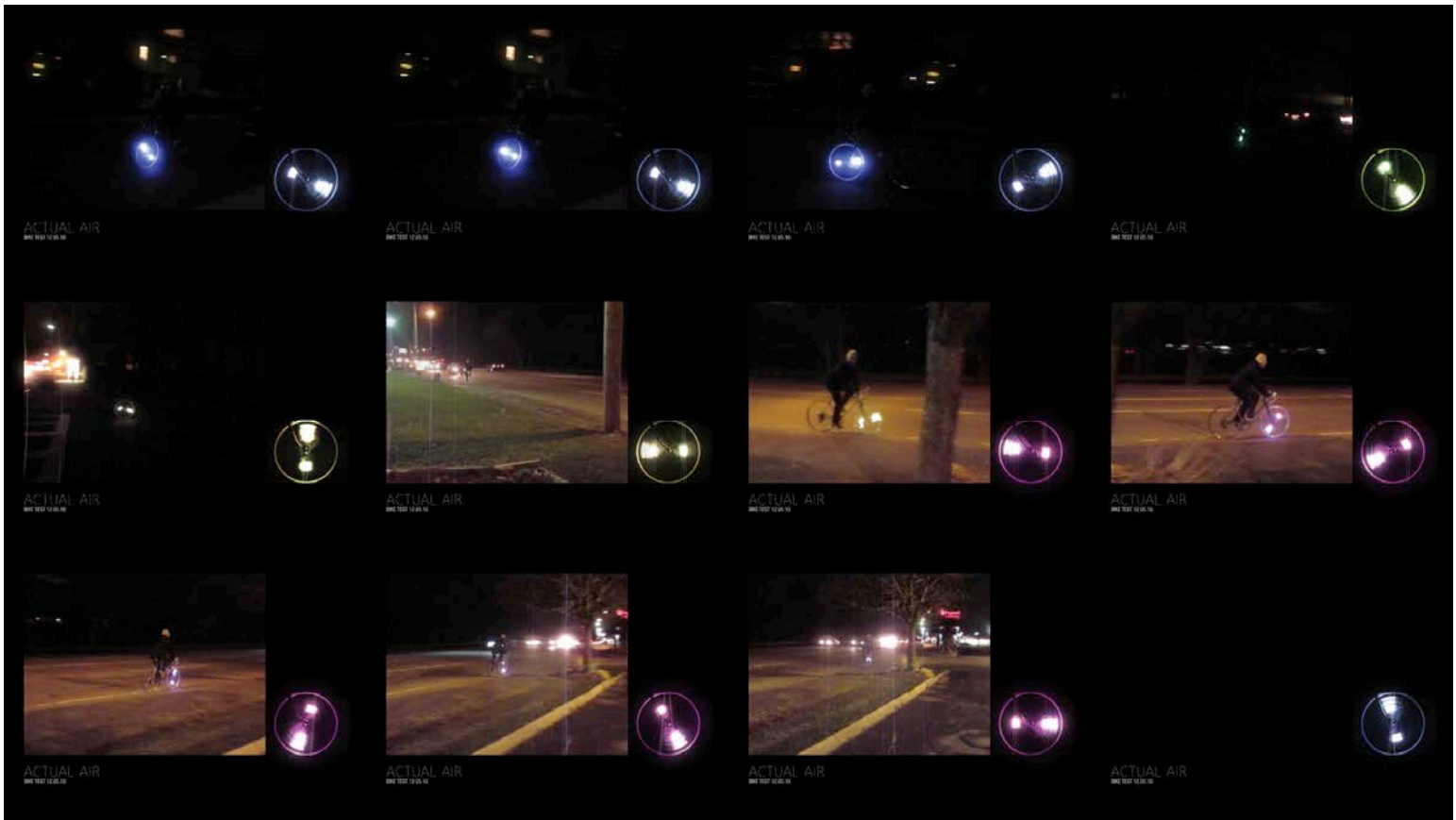
ARDUINO



SENSOR







## *Problems with Environmental Science and Health Research*

- Expensive
- Limited to hands of experts
- Lag in knowledge between experts and people on the ground
- People on ground don't own the data
- They also don't understand how it is made
- Industry has far greater capacity to generate data

*\* Slide courtesy of Jeffery Warren, The Public Laboratory*

## *Civic Science Approach to Environmental Health Monitoring*

- Community oriented and developed
- Community owned
- Tools can be adapted and spread in an open source fashion
- Supports public exploration and investigation of environments

“The term ‘civic science’ has been used to describe science “that questions the state of things, rather than a science that simply serves the state” (Kim and Mike Fortun 2005:50)

*\* Slide courtesy of Jeffery Warren, The Public Laboratory*



# Participatory Action Research (PAR)



# TRANSLOCAL TOMORROWS

Juxtaposing Continuities, Identities, and Belonging to Empower and Mobilize Hmong Youth in America

Share

## DESIGN THE RESEARCH METHODOLOGY

We took a multimodal research approach to reveal a more nuanced, multifaceted snapshot of our context. To do so, we used the following methods:



Semi-Structured Interviews



Crowdsourced Landscapes



Participant Observation



Video Ethnography



Online Surveys



Futuring Workshops



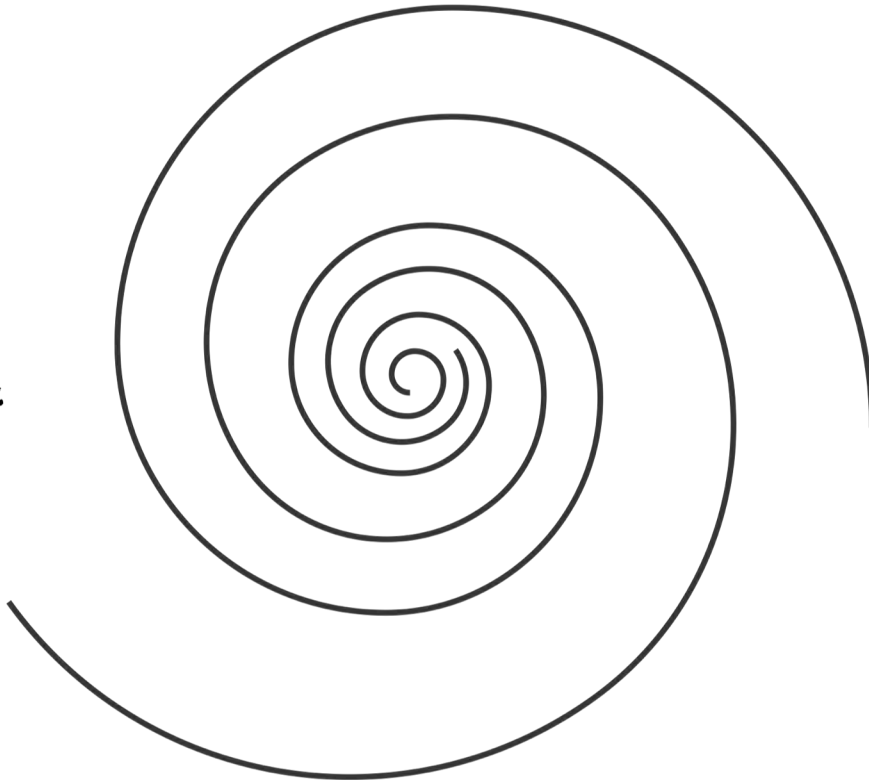
Comparative Case Study

<http://www.winniecreative.com/work#/translocal-tomorrows/>

Research

Reflect

Act



Plan

## Sensory Research with the Visually Impaired



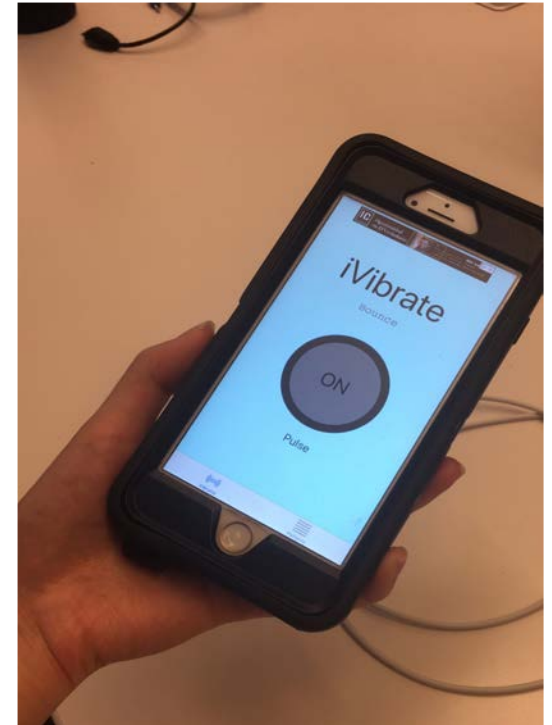
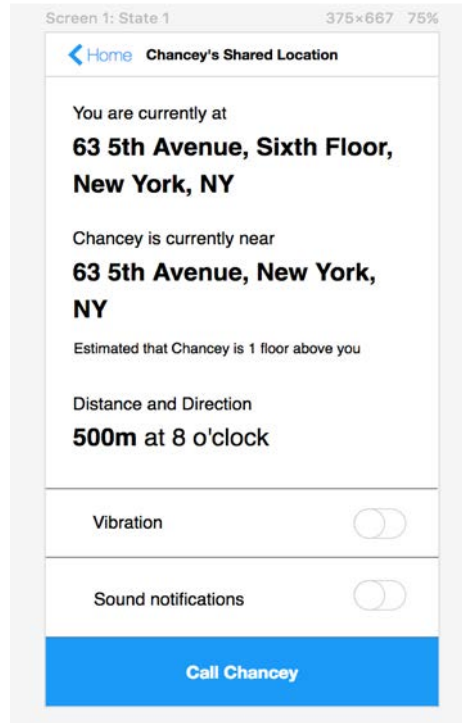
Hannah Jiang · Jenni Wu (2018)

## Participant Observation and Visual Ethnography



Hannah Jiang · Jenni Wu (2018)

# Co-Designing for Inclusivity



Hannah Jiang · Jenni Wu (2018)



## **Inclusive design benefits the whole population**

Designing for inclusivity often means creating unforeseen benefits for everyone else. For example, audio books were created for people who are visually impaired or blind to enjoy, but now has become a mainstream and popular way to listen to a book while commuting. Inclusive design gives everyone equal access to a product and drives innovation.

[\*\*Learn More\*\*](#)

<https://inclusiveprojects.org/home>



[Inclusive Design Podcast](#) • [View All](#)

## **Joanna Kao: Accessible Design in Media**







# Examining Technology used by Citizen Activists during Occupy Protests





# #SEARCHUNDEROCCUPY

EXHIBITED MARCH 1 - APRIL 1, 2012  
CONTINUES AS A LIVING ARCHIVE  
ONLINE

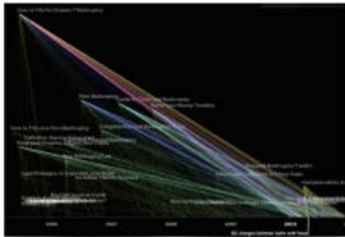
Arnold and Sheila Aronson Gallery  
Sheila C. Johnson Design Center

**SUBMIT**

A living archive of creative and critical responses to the Occupy Wall Street movement by THE NEW SCHOOL community.

- ABOUT
- EVENTS
- GALLERY
- SUBMIT
- OWS & TNS

## SPOTLIGHT



#OCCUPYDATA HACKATHON



ART PRODUCTION AS A DEMOCRATIC PROCESS

## GALLERY



VOICES UN/HEARD



KAREN'S STORY



OWS PODCASTS

#SEARCHUNDEROCCUPY



f 932

Events Gallery



#OccupyData Hackathon  
Mar 30, 2012



Art Production As A Democratic Process  
Mar 30, 2012



TEACH-IN WITH MARTIN LUCAS  
Mar 29, 2012



REMIX WORKSHOP  
Mar 28, 2012



#OCCUPYDATA

SearchUnderOccupy.org

# #OCCUPYDATA HACKATHON



9.28.12-9.29.12  
12-6:00 PM  
THE GRADUATE CENTER  
City University of New York



occupydatanyc.wordpress.com

CREDIT: "Income Inequality in the United States, 1980-2008" with Thomas Piketty, Quarterly Journal of Economics, 118(1) 2009, 1-31. Tables and Figures Updated to 2010, March 2012]

## #OCCUPYDATA HACKATHON 2

MARCH 23-24, 2012. #OCCUPY DATA SETS. DIFFERENT LOCATIONS

The Long Island Index of the 30 largest local companies in terms of stock market value had a down week for only the second time this year. Biggest gainer among stocks in the index was bank holding company Astoria Financial (+3.9%). Biggest drops on the index were United Way

### #OccupyData Hackathon II: Data Visualization for the 99%!

March 23-24, 2012  
12pm to 6pm on both days

Held in conjunction with the [#searchunderoccupy](http://searchunderoccupy.org) exhibition [searchunderoccupy.org](http://searchunderoccupy.org)

Arnold and Sheila Aronson Gallery  
Sheila C. Johnson Design Center  
66 Fifth Ave., New York, NY

Event co-organized by Prof. Nitin Sawhney and Christo de Klerk (School of Media Studies)

Unprecedented amounts of media and data were generated during the Occupy Wall Street protests last fall and continue to emerge through the ongoing movement. Join us for a 2-day collaborative Hackathon to explore, visualize and learn from such this living data archive.

During the 2-day event, we will be connecting and collaborating with other such Hackathons taking place in Cambridge, Los Angeles, San Francisco, Oakland and Washington D.C.

This event is not only for designers and hackers, but for anyone interested in the Occupy movement with experience in media production, journalism and research. Bring your ideas, skills, creativity, questions and critical perspectives as we look for ways to transform media and data collected from Occupy Wall Street into visualizations and data driven interventions!

Some of the data sets we will have access to include survey research data, twitter activity, user contributed audio/video footage online, as well as data on privately owned public spaces in New York City. Final outcomes will be showcased in the gallery as well as online in various forums.

The event is being jointly organized with **OccupyResearch, DataCenter, R-Shief Labs, and the MIT Center for Civic Media.**

For more information visit: <http://bit.ly/occupyhackathon>

To sign-up please register for the event here: <http://goo.gl/7nm58>

For more info or questions contact: [occupyresearchnyc@gmail.com](mailto:occupyresearchnyc@gmail.com)

Symbol	Price	Change	Symbol	Price	Change
12,965.69	Up 15.82		HewlettP	29.35	-0.24
Nasdaq	2,948.57	Down 3.21	HomeDp	46.92	+0.21
S&P 500	1,362.21	Up 0.57	Intel	27.16	-0.21
			IBM	193.39	-0.03
			JPMorgCh	38.46	-0.01
			JohnJn	65.04	+0.05
			Macys	36.69	+0.44
			McDs	100.49	+0.50

## OccupyData Hackathons: Participatory Inquiry of Social-Justice Narratives





projects, tools and scripts

**OccupyMosaic**  
 OccupyMosaic is a site originally developed after the May Day 2012 day of action to show a visual narrative of the events that happened that day. The site uses a crawler to scrape data from the Twitter API, as well  
 September 29, 2012 / Comments Off on OccupyMosaic



process, projects, visualizations  
**Using a free Jogging app to GPS map unofficial private space in Zuccotti Park (OWS)**

September 29, 2012 / Comments Off on Occupy's One Year Anniversary: A Twitter Story



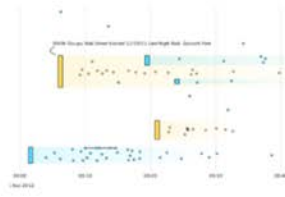
datasets, process, projects, visualizations  
**Connecting Occupy**  
 This project examines connections among Occupy groups through project partnerships.  
 May 19, 2012 / 3 Comments



process, projects  
**Occupy Video as Data: Visualizing Temporal Narratives**  
 How do we make sense of specific events occurring during the Occupy

visualizations  
**Free University Course Analysis**

Notice: This project is still in process. Project Description: For this project, we are looking at course descriptions and titles from the May Day and Sept. 18-22 Free Universities (for information on the Free University, please visit: <http://freeuniversitynyc.org/about-the-free-u/principlesidentity/>). We are  
 September 29, 2012 / Comments Off on Free University Course Analysis



process, projects  
**Occupy Video as Data presentation at NYU, 4/18**  
 Last week, a few Data Occupiers went to NYU to present to the "Topics in Visual Culture: Politics of Visual Display" class at NYU: among other things, we talked about our **Video as Data project**.  
 April 25, 2012 / One Comment



datasets, process, projects, tools and scripts, visualizations  
**is the occupy movement getting more colorful?**  
 post by srt0 and christo  
 Occuprint.org collects and distributes posters inspired by Occupy movements all around the world. For the May 18/19th hackathon, our group looked at Occuprint's collection of almost 400 posters. Our main aim was to explore possible  
 May 20, 2012 / 3 Comments



projects, visualizations  
**citizen data sets and twitter bot guards of public space**  
 Robots have been firm supporters of the Occupy movement, taking up protest signs where human arms grew weary. Mechanical automation does not need to be the exclusive domain of the physical. Indeed, drawing attention to those public

April 4, 2012 / Comments Off

## OccupyDataNYC.org



process, projects

### Occupy Video as Data: Visualizing Temporal Narratives

How do we make sense of specific events occurring during the Occupy movement through narratives emerging from social media over time? When an NYPD officer pepper sprays peaceful protestors, the event is immediately captured on camera phones with subsequent citizen

March 24, 2012 / 3 Comments



that he produced of bankruptcy related

March 26, 2012 / Comments Off



process, projects, visualizations

### Visualization of Q42 "What are you trying to achieve with your participation in the Occupy Movement?"

From the Occupy Research Demographic and Political Participation Survey, question #42, "What are you trying to achieve with your participation in the Occupy Movement?" All responses are included, and this visualization shows the 50 most frequently used words (excluding the very

March 24, 2012 / Comments Off



### march 31: ows archive day

We will be showcasing some of our outcomes from the OccupyData Hackathon in NYC and outcomes from groups around the country at OWS Archive Day this weekend at Eyebeam. Please join us! OWS Archive Day is at March 31, 2012

March 24, 2012 / Comments Off

process

### day 1 recap: works in progress at OccupyDataNYC

Group 1: State and Space We're using the web service Topsy to search for tweets related to Occupy events and police actions, positive and negative. After cleaning the tweets of web noise, e.g. http://, we visualize the prominence of particular keywords

March 24, 2012 / Comments Off



are listed in bold and

March 24, 2012 / Comments Off

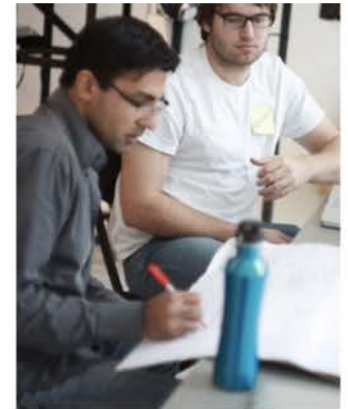


process, projects, tools and scripts, visualizations, working group

### State and Space

We're using the web service Topsy and a Ruby script to search for tweets that document police misconduct or benevolence, can be traced back to a specific officer, and are related to Occupy events. After cleaning the tweets of web

March 24, 2012 / 3 Comments

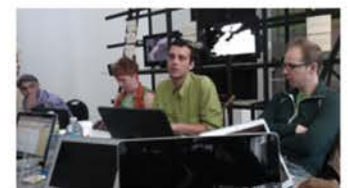


events and hackathons

### photos: occupydata hackathon2 nyc day 2

Thanks go to Peter Asaro for the photos.

March 24, 2012 / Comments Off

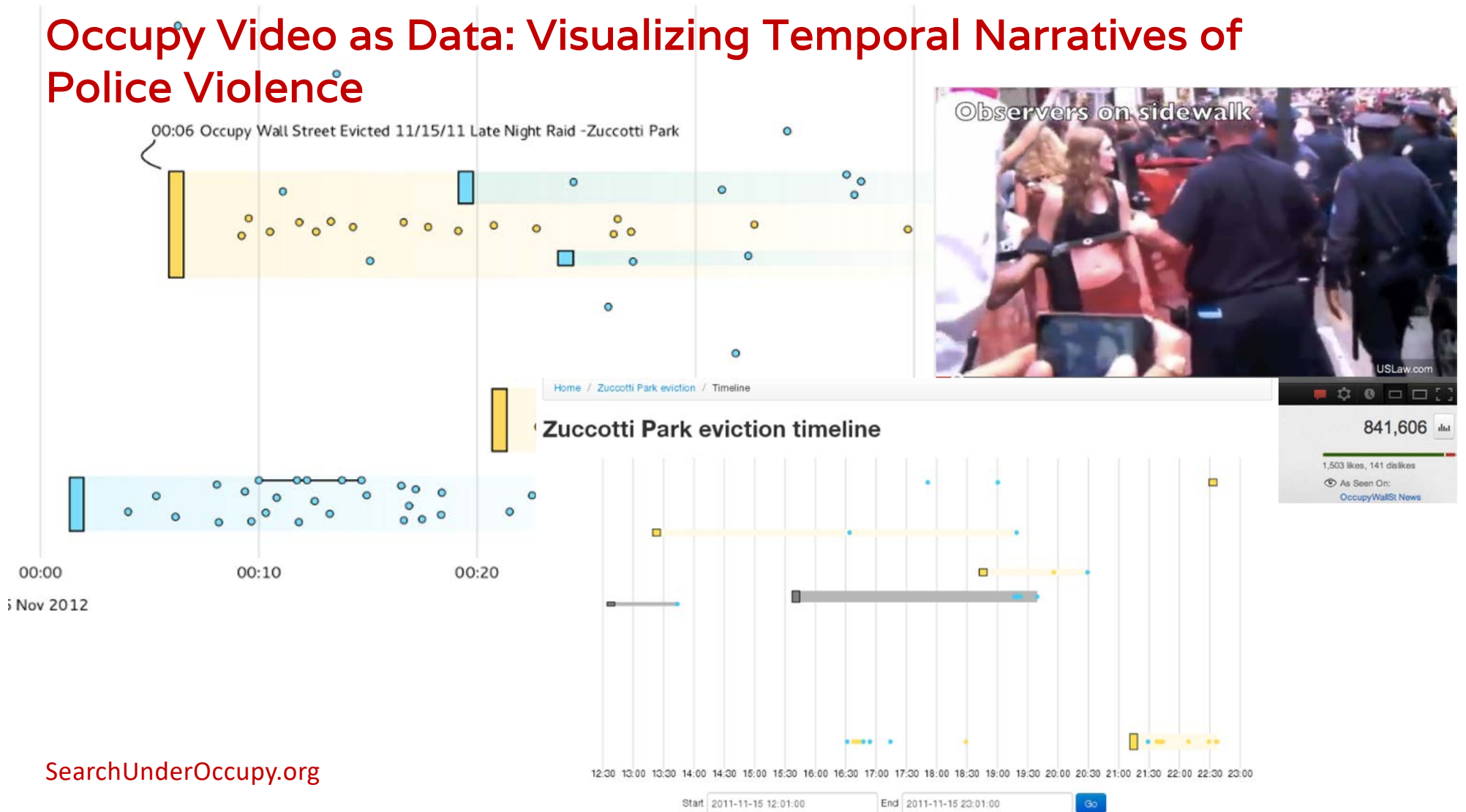


events and hackathons

### photos: occupydata hackathon 2 nyc day 1

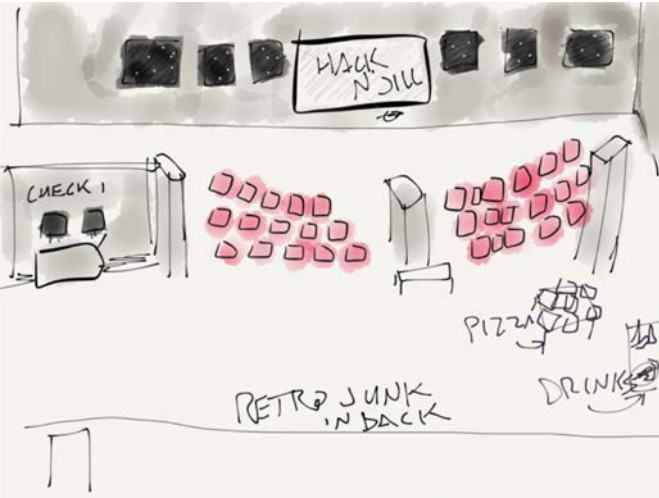
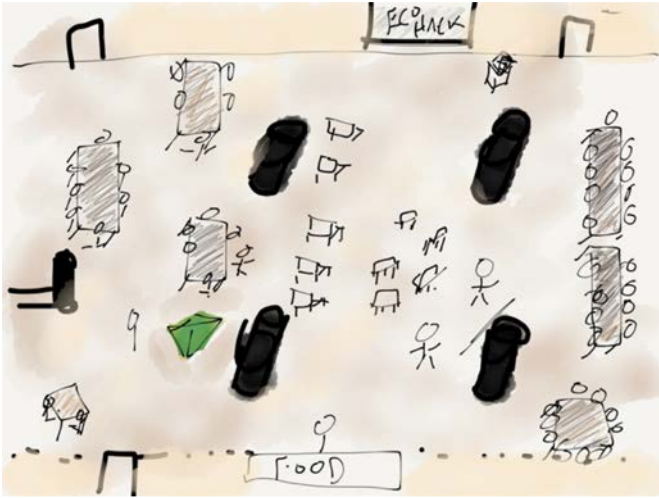
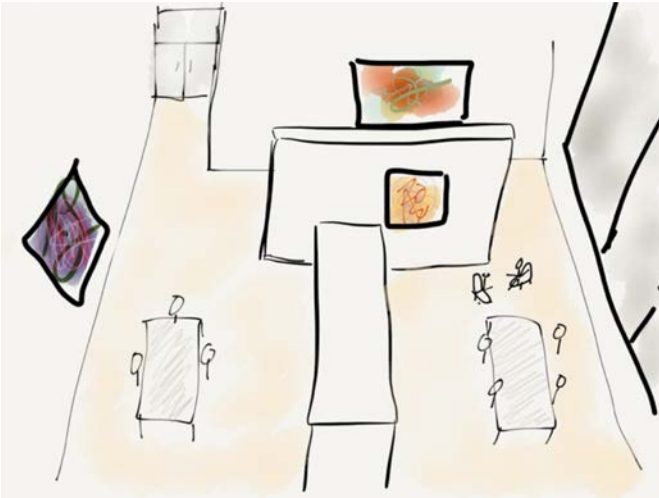
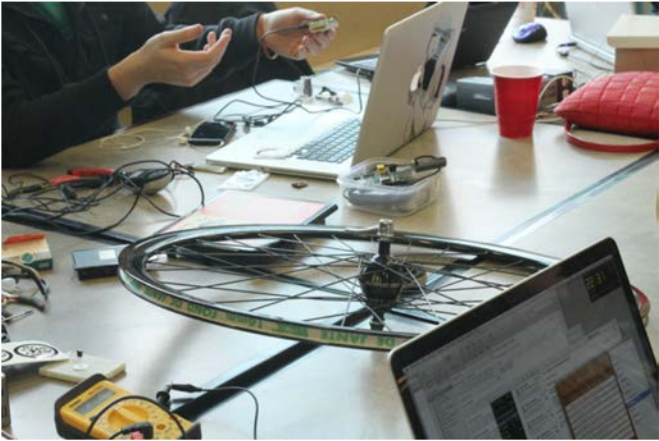
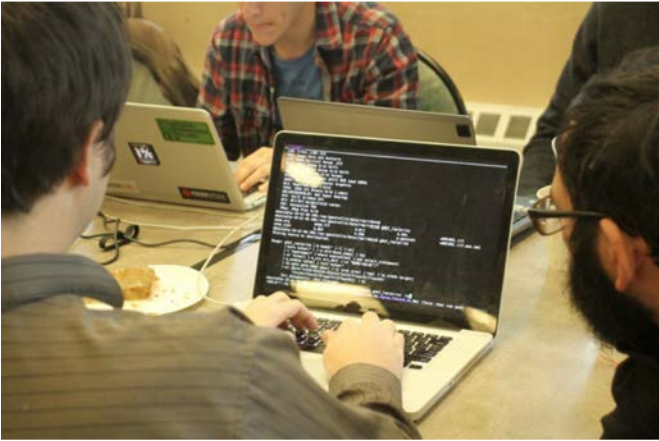
Thanks go to Farah Momin for the photos.

# Occupy Video as Data: Visualizing Temporal Narratives of Police Violence



SearchUnderOccupy.org

# Ethnography of Hackathons





# *The People's Skype*

A phone-powered, distributed voice and voting system for the #Occupy Movement



call **917-719-2006**

[www.peopleskype.org](http://www.peopleskype.org)

## Illuminating Student Debt

WHAT DOES  
MEAN TO YOU?  
ENSLAVING  
WHO ARE K  
TO MAKE A  
TUDENT DEBT  
(202)999-3273  
THE PEOPLE  
WLEDGABLE  
DIFFERENCE...

Chris Rogy (2012)

## Illuminating Student Debt

THE GENERAL REVENUE  
CORPORATION  
ADDS 25% TO  
THE LOAN AS A  
COLLECTION FEE

Chris Rogy (2012)

# CONTESTATIONS IN CIVIC DATA MAPPING MOBILITY AND POWER IN NEW YORK CITY

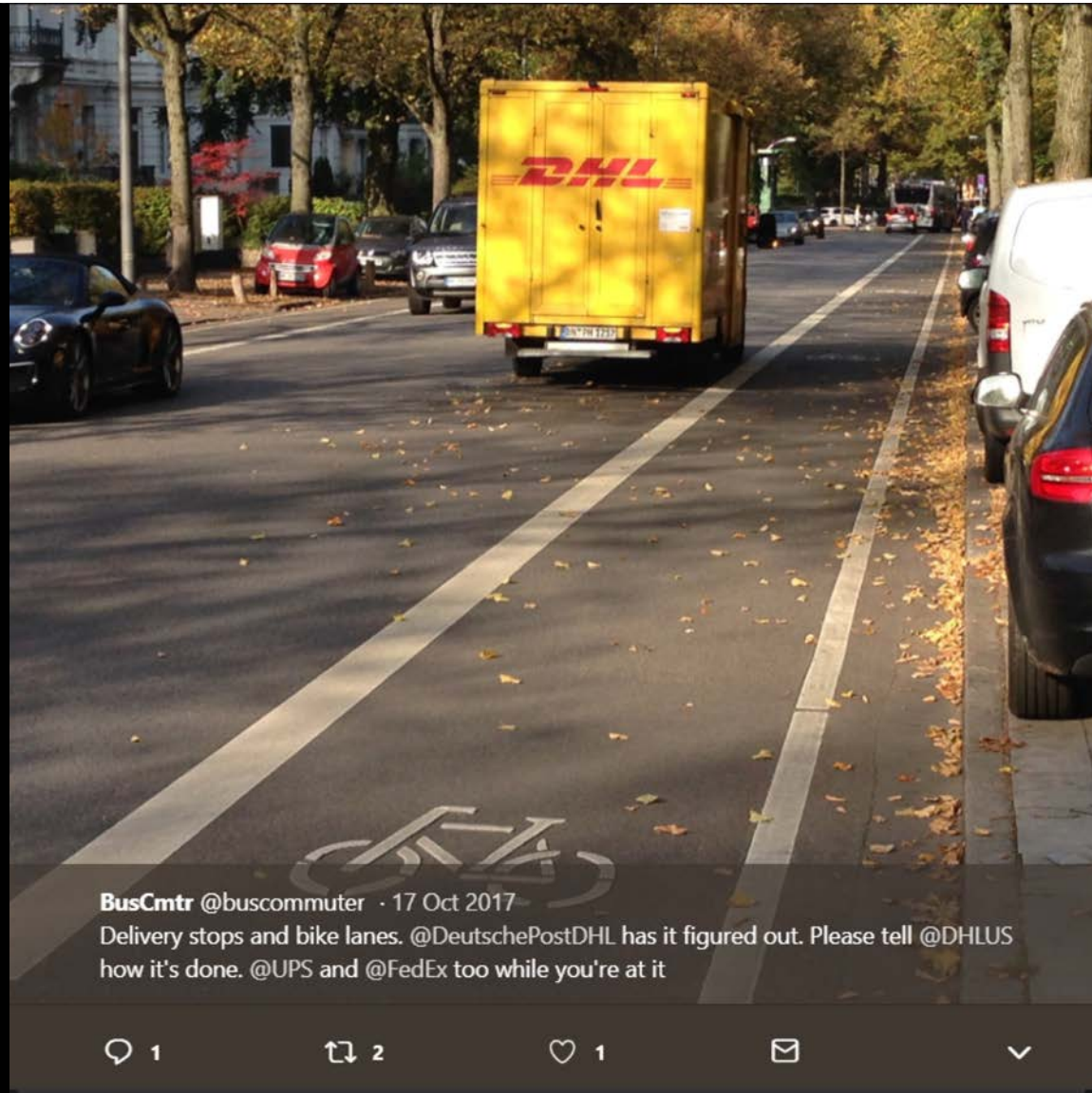
When: November 29, 10:00 AM - 12:00 PM

Where: 6 E 16th St, Room 1203B

Led by Adriana Young, Stephen Larrick, Crystal Penalosa, and Sam Wu of Stae.co

Is civic data neutral? How can data that represents our urban lives be used as a form of power? This workshop will explore how open data can be used as a tool for both cities and citizens to envision collective futures. We'll start with an overview of the history of civic data. We'll then work in small groups to dig into live city data sets that reveal competing values and priorities for the city, community groups, technologists, and businesses. This will be a hands-on, interdisciplinary workshop — while no technical experience is needed, we encourage people to bring a laptop to use.

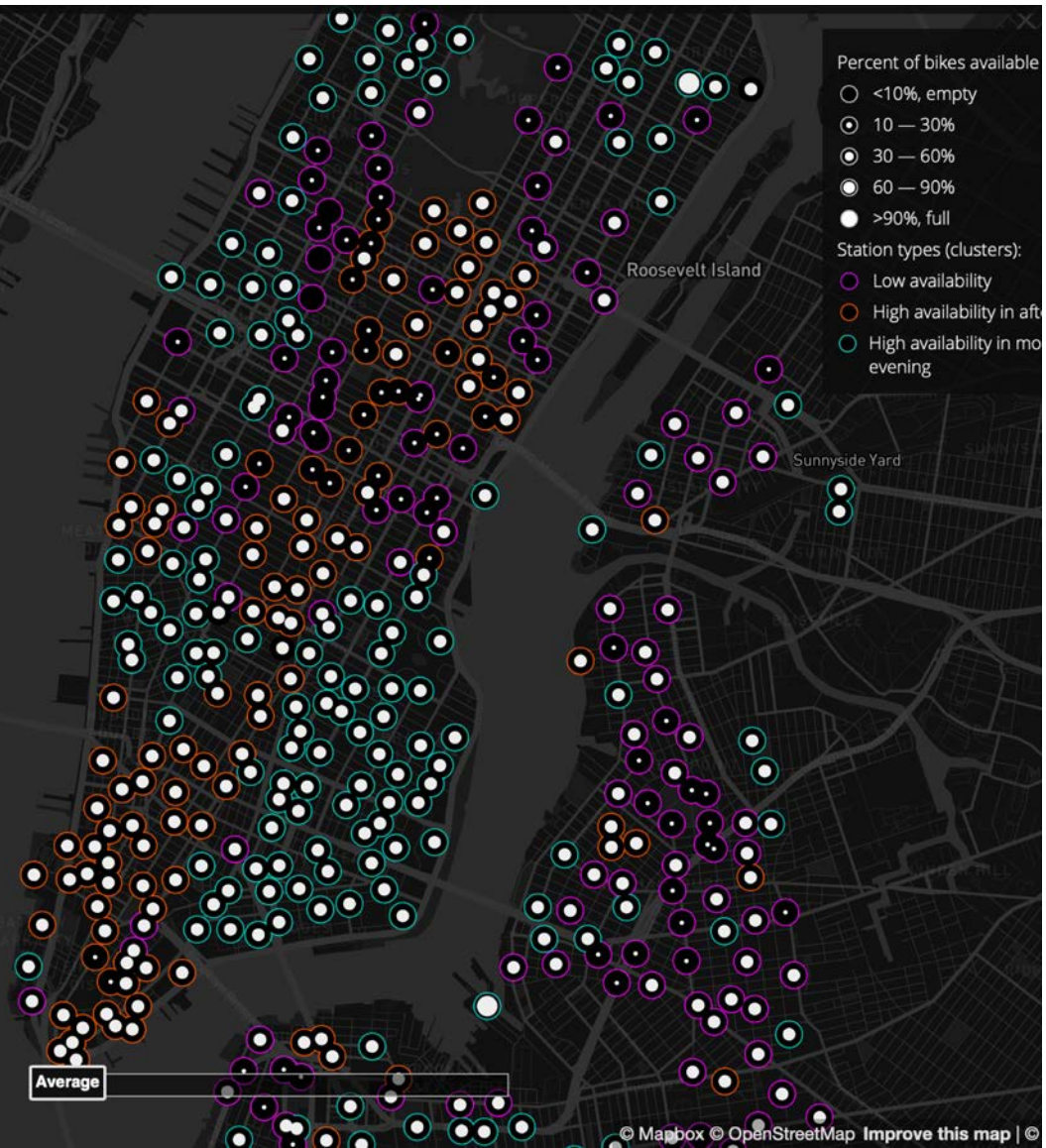
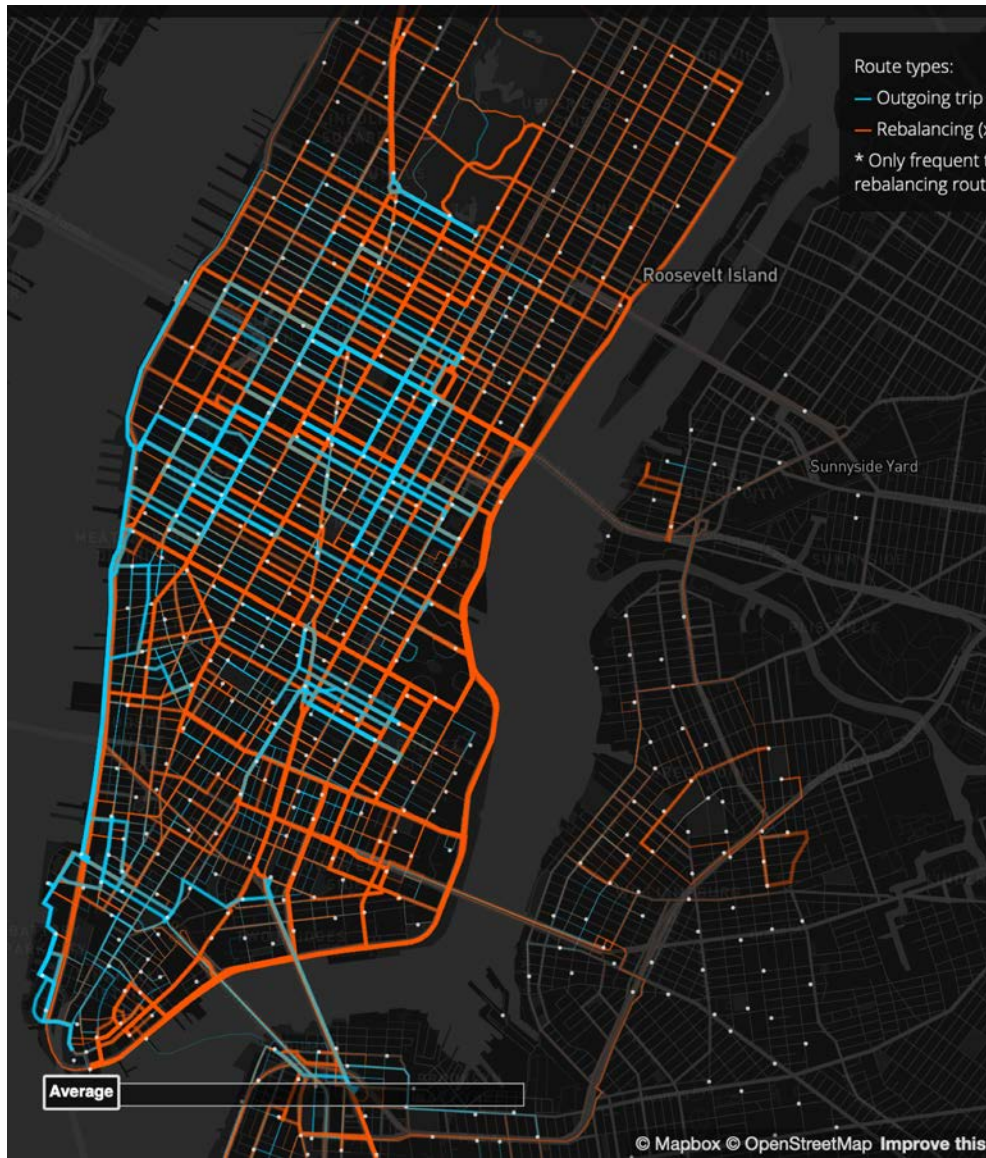
Part of a workshop series hosted by Prof. Nitin Sawhney, Faculty Fellow, Graduate Institute for Design, Ethnography and Social Thought (GIDEST)



BusCmtr @buscommuter · 17 Oct 2017

Delivery stops and bike lanes. @DeutschePostDHL has it figured out. Please tell @DHLUS how it's done. @UPS and @FedEx too while you're at it





# Workshop: Analyzing Bike Lanes as Contested Space

Insights Data Sources

1 filter, showing 5 rows. Filter Export

Show data matching All of the

Notes Contains

Field

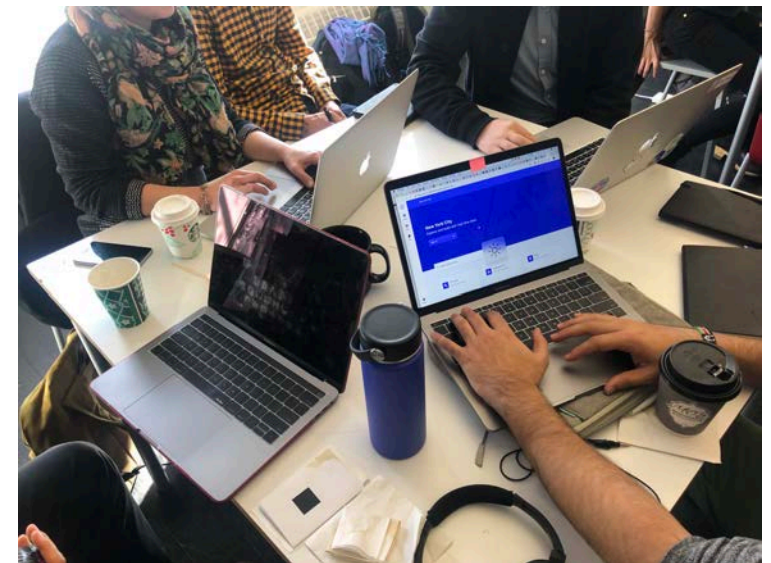
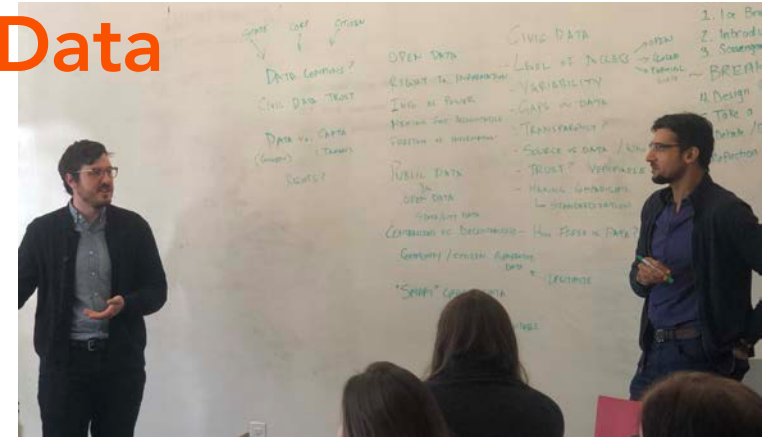
ID	Received	Reco				
4636817	07/04/18 9:26am	07/03				
445775	03/22/13 1:11pm	-				
445952	03/22/13 5:43pm	-	02/25/18 10:56pm	Other	Closed	Ny
444191	03/20/13 1:00pm	-	02/25/18 10:58pm	Other	Closed	This
597896	06/26/13 9:31am	-	02/25/18 10:53pm	Other	Closed	This



Images courtesy of Adriana Young, Stae.co (2019)

# Engaging Contestations in Civic Data

- Data Literacy to create capacities for people to participate & leverage localized knowledge
- Using Civic Data to create multi-vocal and contradicting narratives
- Negotiating Access, Trust & Legitimacy of Corporate, State vs. Citizen-generated data
- Supporting Open Data Commons, Policies and Standards
- Rethinking Big Data vs. Thick Data – engaging qualitative experiences of urban life



# Politics of Participation

- Conducting Cooperative and Reflexive Research
- Negotiating Domain Expertise and Fostering Inclusivity
- Recognizing inherent Power, Privilege, and Social Dynamics
  - Influences of class, gender, race and cultural norms
- Revealing Shared and Conflicting Values in Design Research





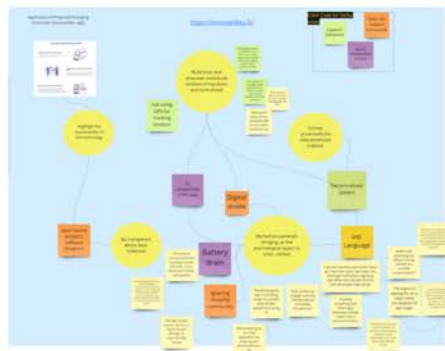
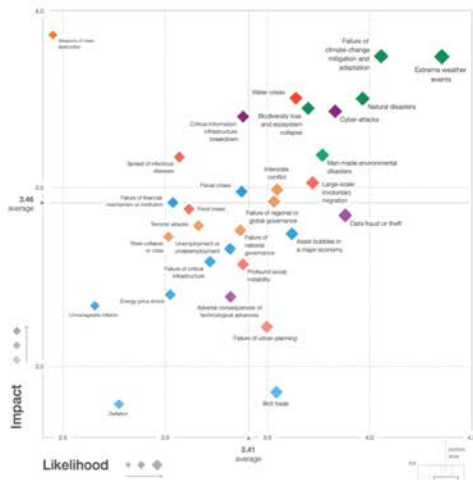
# Human-Centred Research and Design in Crisis

Aalto University :: CS-E4002 :: Summer 2020  
<https://hcrdcrisis2020.wordpress.com>

Home  
 About

Weekly Sessions  
 Course Schedule

Participant Bios  
 Readings



## The Role of Human-Centered Design in Contact Tracing Applications



## Final Project Presentations

The Human-Centred Research and Design in Crisis course had its last session on September 2. The session's agenda started with...