LIBERATORY
INFRASTRUCTURES LAB

# Academic-Community Partnerships for Climate Justice

Maya Elizabeth Carrasquillo
Assistant Professor, Civil & Environmental Engineering
University of California, Berkeley
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Berkeley
UNIVERSITY OF CALIFORNIA


ARCADIS

National Society of Black Engineers

VIVE CHURCH

# Today's goals

- Share examples of community-academic partnerships from my own work
- Challenge us with a call to action for climate justice

# What is the goal of community academic partnerships?

*Adapted from Prof. Charisma Acey*

# GRASSROOTS INFORMATION

# SOURCE

# MAINSTREAM / INSTITUTIONAL INFORMATION

GRASSROOTS INFORMATION FLOW

**GR INFO TO GR AUDIENCE**

*Cultural events: arts, music, church, etc.*

*Alternative news outlets, community newspapers, etc.*

*Community art projects, etc.*

*Door knocking, surveys, petitions, visits, etc.,*

**GR INFO TO MS AUDIENCE**
*Boycotts, protests, marches, rallies, etc.*

**MS + GR INFO TO GR AUDIENCE**
*Social media, internet, cell phones, networking, etc..*

*Government reports, policy briefings, official statistics, etc.*

**MS INFO TO GR AUDIENCE**
*Mainstream media outlets, print media, etc.*

**GR INFO TO MS AUDIENCE**
*Boycotts, protests, marches, rallies, etc.*

**MS INFO TO MS AUDIENCE**

*Official government data, Census, Academic studies*

*Official presentation of data, closed meetings, sharing through informal relationships, etc.*

*City council president, policy makers, CEOS, etc.*

*Government reports, police reports, academic studies*

MAINSTREAM INFORMATION FLOW

**RIGHT TO KNOW**

**RIGHT TO BE HEARD**

# GRASSROOTS AUDIENCE

**GR AUDIENCE**
*Impacted communities: elders, youth, neighbors, workers, etc.*

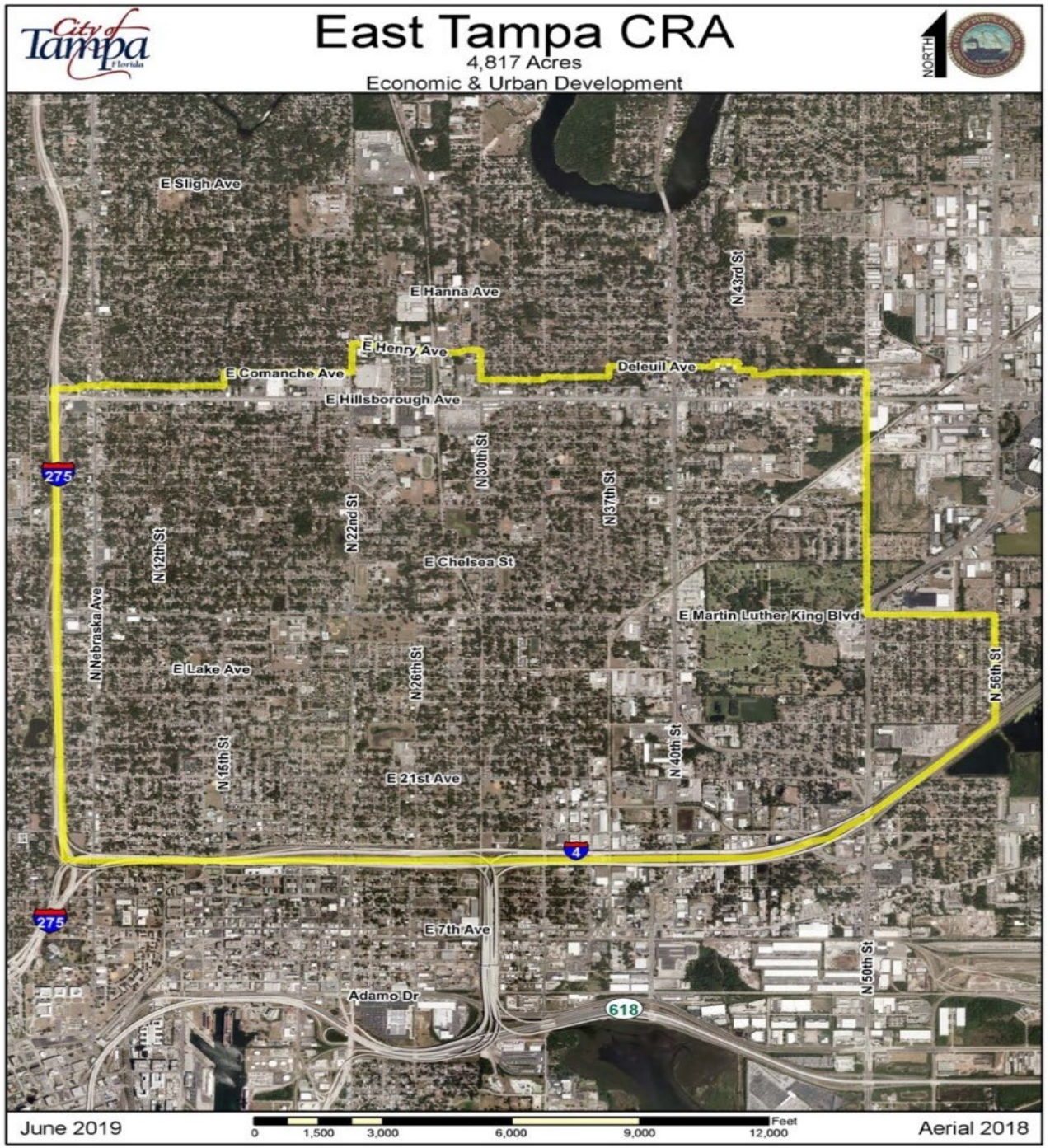
# AUDIENCE

# MAINSTREAM / INSTITUTIONAL AUDIENCE

# Examples from research

# East Tampa

- Community Redevelopment Area (CRA)
- 7.53 sq. miles (largest CRA in FL)
- ~20 neighborhood associations
- Surrounded by two major highways (I-4/I-275) & has 4 state roads
- 70+% African American population
- Largest density of stormwater ponds of any community in city




https://www.tampabay.com/news/2020/07/01/even-before-the-pandemic-poverty-was-a-way-of-life-for-many-black-children-in-tampa-bay/

# E. Genesee Street

# History of East Tampa Stormwater Management

## Fair Oaks Community Lake

Part of a stormwater retention pond beautification pilot program, the Fair Oaks Community Lake project was completed. Located at 34th and E. Ellicott Streets, the pond was transformed into a community lake featuring park-like qualities. A perfect extension of the adjacent Fair Oaks Park and Community Center, the lake area now features paved walking paths with seating areas, a covered picnic pavilion site and lush, colorful landscaping. Funding for the $1 million project was provided by TIF and Community Development Block Grant (CDBG) revenues.

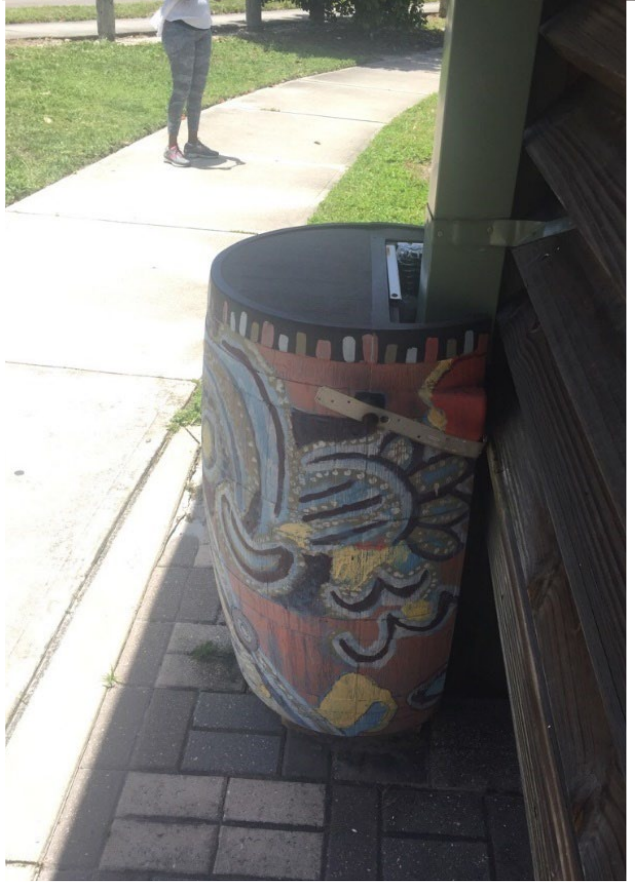

## 2009

## Dr. Martin Luther King Jr. Retention Pond Beautification

The retention pond located on North 17th Street and Dr. Martin Luther King Jr. Boulevard is the second site completed and converted into a community lake. The features include a covered two-story observation tower, pier, boardwalk and walking path. The cost of this project was $1.1 million in TIF funding.








# Robert L. Cole Sr. Community Lake

# Green Infrastructure in East Tampa

**"...one of the things that I hear more from any of our partners that we work with is people want jobs. ... A one-time job does not help anybody. ...young people that have don't really have any hope, and start giving them a career in green infrastructure and construction maintenance..."**

**[Titus Hayes, December 17, 2019]**

Environment

## A $36.6M bond will establish green infrastructure initiatives in Tampa

WUSF Public Media - WUSF 89.7 | By Christina Loizou
Published October 12, 2021 at 5:00 AM EDT

https://wusfnews.wusf.usf.edu/environment/2021-10-12/36-6m-bond-set-to-establish-green-infrastructure-initiatives-in-tampa

# GSI By & For Communities (Funded by EPA's WQIF)

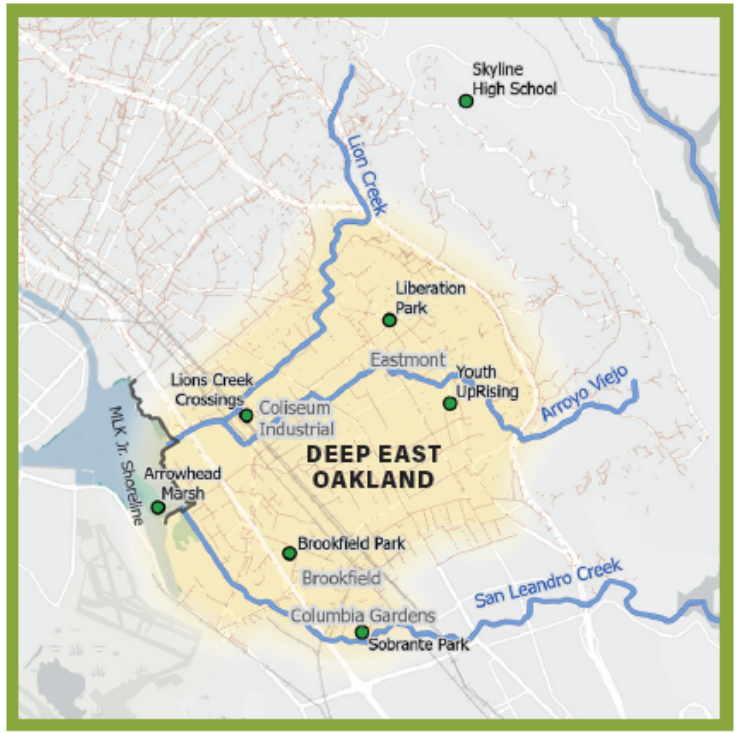
# Green Stormwater Infrastructure by and for Communities

## PROJECT MAPS

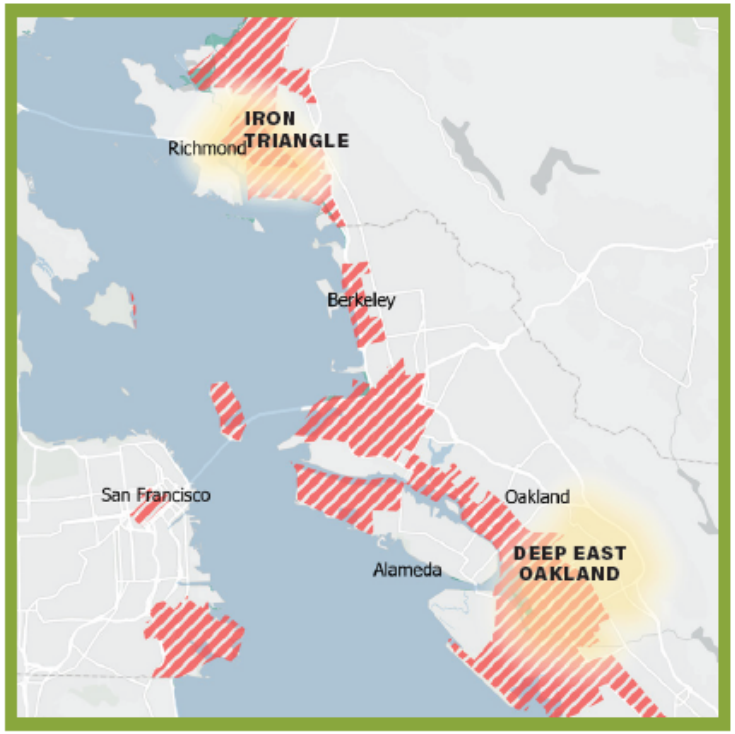
PROJECT MAP FOR PROPOSAL TO THE EPA WATER QUALITY IMPROVEMENT FUND 2022

SUBMITTED BY THE SAN FRANCISCO ESTUARY INSTITUTE, SEPTEMBER 20, 2022


**Map Figure 1:** The Iron Triangle community engagement area and education/installation sites in Richmond.




**Map Figure 2:** Deep East Oakland community engagement area and education/installation sites.



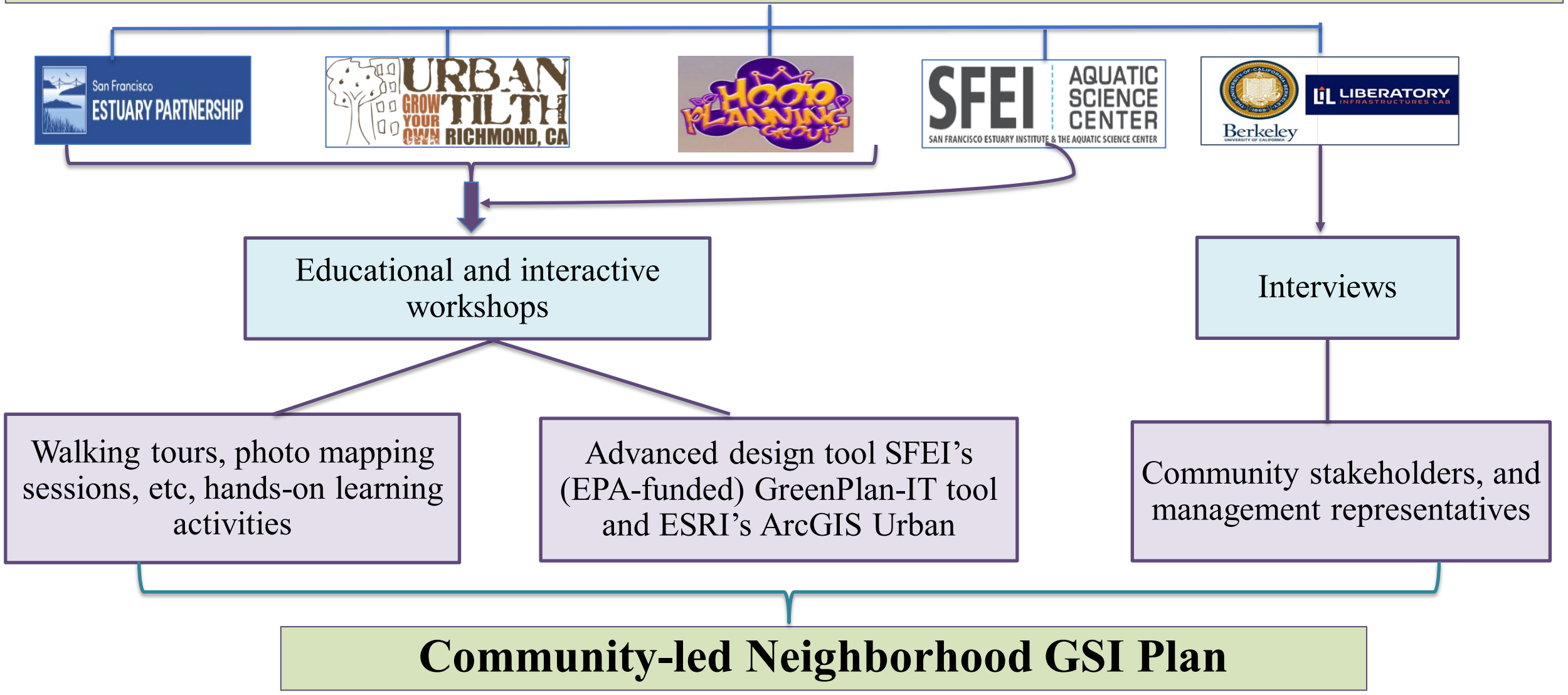

**Map Figure 3:** Location of focus communities (Iron Triangle in Richmond and The Deep in East Oakland) relative to the Underserved Communities Identification Map and represented by the CalEPA disadvantaged communities areas for the purposes of SB 535.

Urban hydrology and the green stormwater infrastructure (GSI) that supports a healthy watershed are too often invisible or inaccessible to the general public. GSI, which offers a multitude of stormwater, health, social and ecological benefits, has received less implementation funding in underserved communities relative to other areas of higher socio-economic status.

Yet, when GSI is constructed in underserved areas, it has the potential to contribute to gentrification in those neighborhoods. In order to implement GSI in underserved communities in a way that serves the local residents and does not exacerbate gentrification, the process of this implementation must be inclusive, engaging and culturally relevant.

In the communities of **East Oakland** and **Richmond**, this work seeks to deepen understanding of the urban watershed, build community insight into GSI design, provide employment opportunities to build and revitalize existing GSI, and illuminate the flow of water through our communities to enhance both community and watershed health.

# GSI By & For Communities (Funded by EPA's WQIF)



Work led by PhD Candidate, Bavisha Kalyan

# MOBILE LEAD TESTING UNIT


*Recruitment Poster*


*Newark Community Members*

*XRF Analyzer*

***A community-driven project to measure lead exposure sources in Newark***

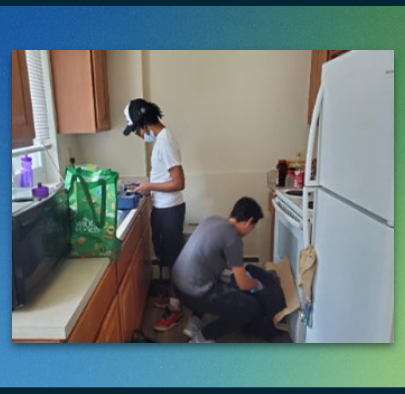
Work led by PhD Candidate, Bavisha Kalyan

# METHODS WERE DEFINED AFTER INTERVIEWING MULTIPLE STAKEHOLDERS

## HOME SURVEY
N = 282


Demographics, Home Conditions, and Health History Questionnaire

## WATER
N = 312



eXact Lead Spectrophotometer
Instant results above 3ppb
1st & 5th Liter draw sampling

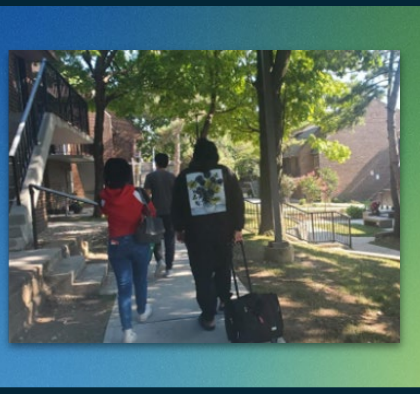
## PAINT
N = 294

Portable X-Ray Fluorescence (XRF) machine to measure lead concentrations from multiple building components in home

## SOIL
N = 38

XRF machine to measure lead concentrations in-situ
Collected soil samples to dry and sieve and re-measure using the XRF

## DUST
N = 256



Ghost wipes were used to collect 2 samples per home (1 sq ft each) in high traffic floors and window sills & measured via ICP-MS

N = Homes Sampled


# How the testing unit impacted our community

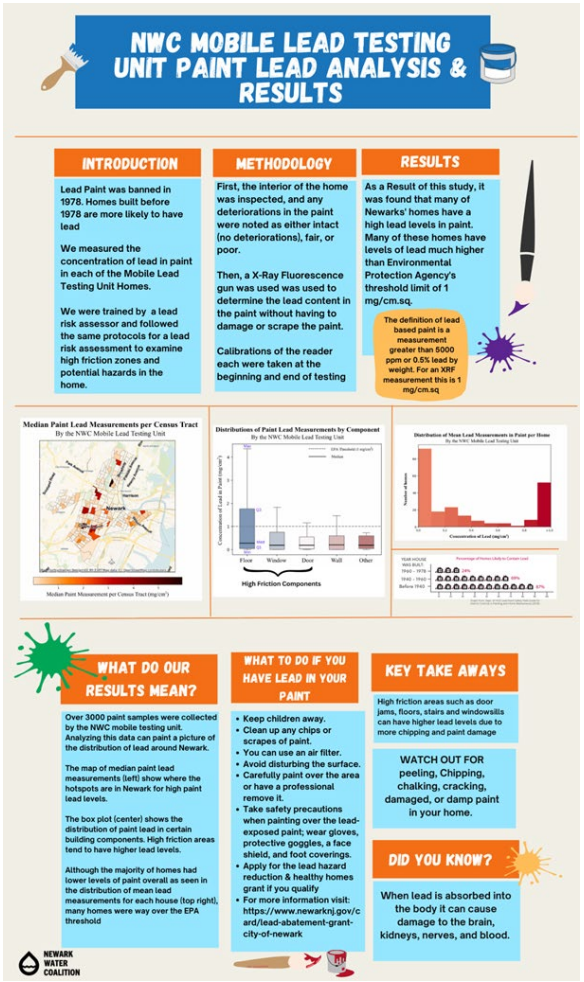
Workshops for Applying to College and Learning Python for Data science

Our highschoolers and team members are pursuing STEM higher education

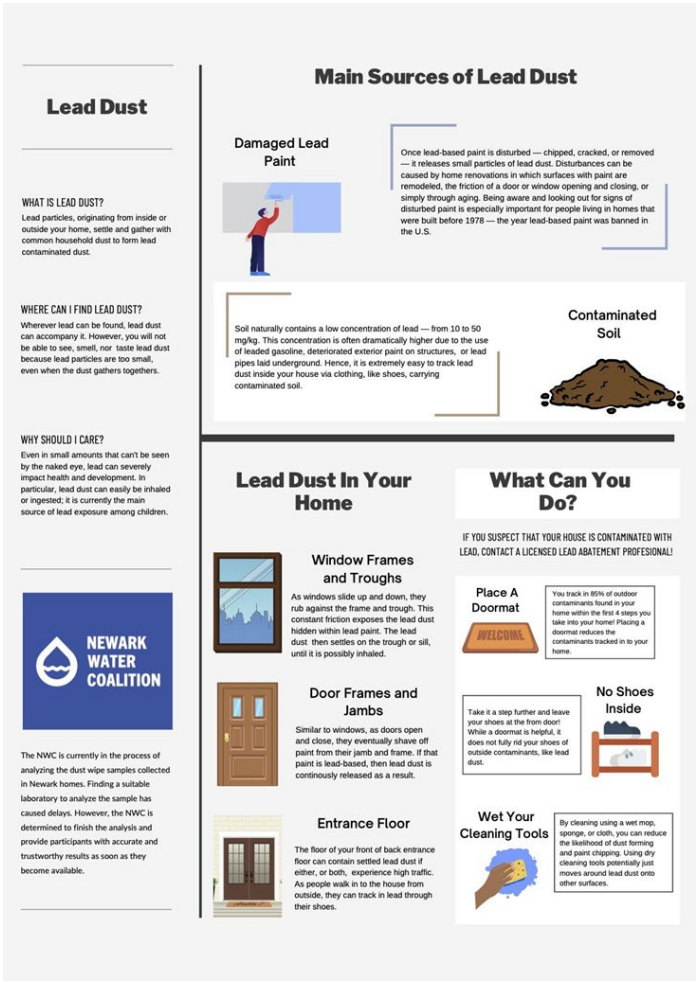
- Environmental engineering
- Computer engineering
- Biomedical engineering

# Environmental Health and STEM literacy

Public Data Share Back From Mobile Lead Testing Unit Jan 14
Community report
Community voice paper published in Environmental Justice
Individual reports to participants
“Get the Lead Out” documentary




Romir Anand
Saneitta Wicks
Danny Feliciano
Nia Wakefiled




Cristian Cerrato


Micah Demarest
www.newarkwatercoalition.com

# Key Takeaways and Future Work



- Portable XRF allowed for community driven science (avoid expensive and destructive ICP-MS paint chip analysis)
  - Huge barrier for analysis: Lead Dust Wipes cost
- Soil lead levels were consistently high and should be investigated further - currently analyzing our data to see if the soil contributes to the lead dust concentrations age of the households
- Initiation of similar projects with other community-based organizations and universities (Rutgers University, Stevens Institute of Technology, NJ Institute of Technology)
- STEM education and literacy of team and residents was integral to project
- Assessment methods and lead risk assessor training were outdated with newest XRF technology (no longer using a X-ray beam) and safety protocols need to be updated
- Starting a lead risk assessor training center

# Where do we go from here?

“For one part of the world—the richer part—adaptation is a matter of erecting elaborate climate defense infrastructures, and of building homes that ‘float on’ water. In the other part adaptation means people themselves learning to ‘float in’ flood water. Unlike people living behind the flood defenses of London and Los Angeles, young girls in the Horn of Africa and people in the Ganges Delta do not have a deep carbon footprint.” – Desmond Tutu, 2007

“We risk a ‘climate apartheid’ scenario where the wealthy pay to escape overheating, hunger and conflict, while the rest of the world is left to suffer.” – Philip Alston, 2019

# Call to Action

1. Recognize the impact of climate apartheid.
2. Decarbonization!
3. Before building, ask the question is this project necessary?
4. Shifting from “community-based” to “community-driven” projects.
5. Assist CBOs in accessing available funds.

# Thank you

**Maya Carrasquillo, Ph.D., ENV SP**
Assistant Professor, Civil and Environmental Engineering (CEE)
Faculty Director, Community Engaged Education in CEE ($CEE^2$)
University of California, Berkeley

Personal Website: www.mayaecarrasquillo.com
Lab Website: www.liberatoryinfrastructures.com
Email: mcarrasquillo@berkeley.edu
Phone (office): 510-664-4661
@drmayaelizabeth

## Lab Group

Bavisha Kalyan
J'Anna Mare Lue
Jasmine McAdams
Natalie Alvarado
Fouzia Oyshi Hossain
Kristida Chhour
Alexandra Grayson
Migdalia Sanchez
Nanthaya Verweij
Hanifah Abatcha