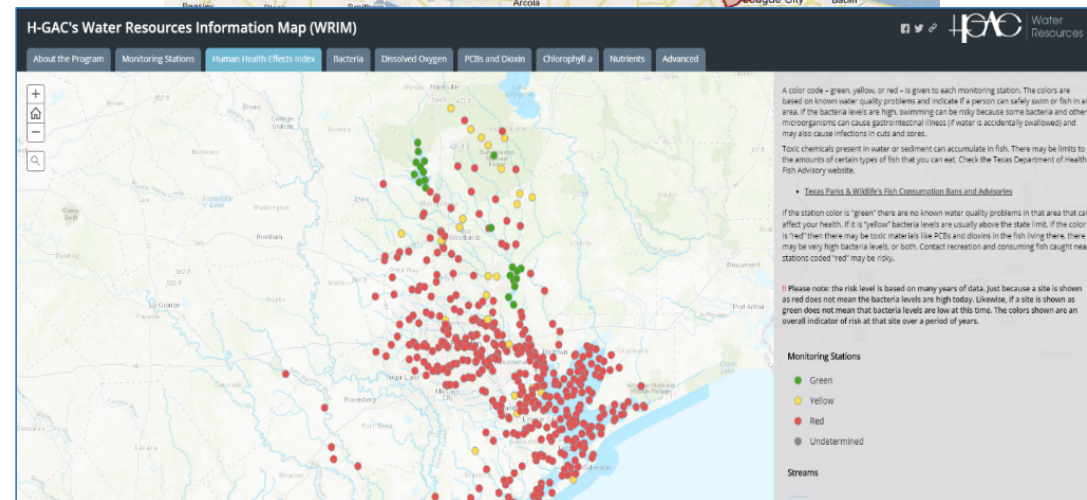
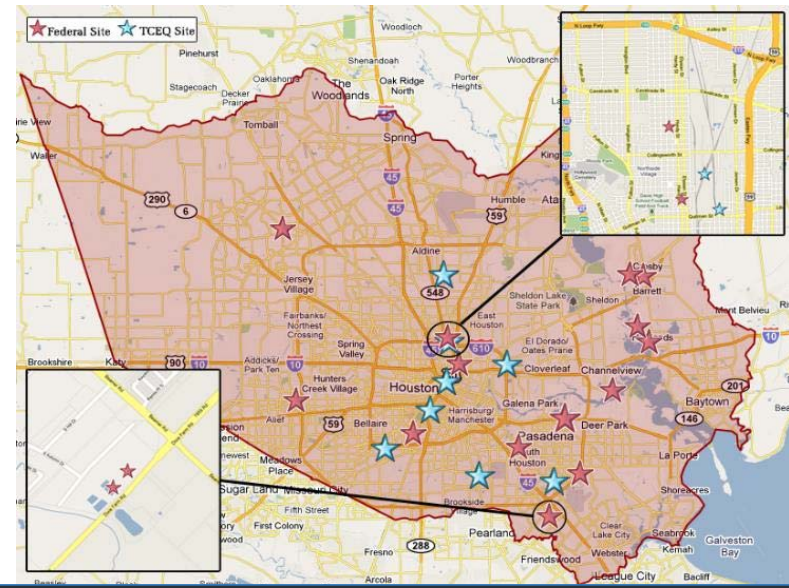


Community Engagement Core

- Mission: to develop and adapt best practices to work with residents and local leaders of affected communities to facilitate prevention and intervention strategies that result in community-level reductions in exposure to PAHs and other Superfund site pollutants
- Specific Aims
 - Provide multi-directional communications mechanisms among the BCM-Rice SRP's internal and external stakeholders
 - Assist and support BCM-Rice SRP projects and cores through CE communications activities
 - Support community projects—informed by and involving staff from our projects and cores—to reduce exposures to Superfund PAHs
 - Rigorously evaluate CE activities and disseminate best practices

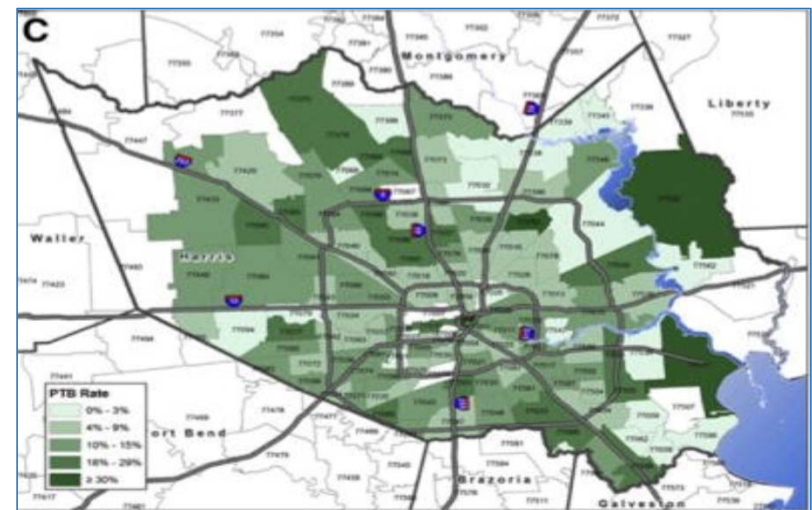
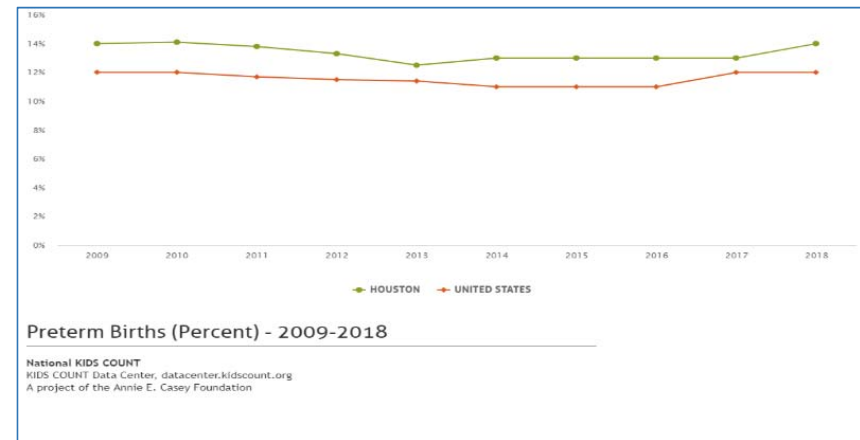
Background

- 15 Superfund sites in Harris County
- In 2018, Bayou City Waterkeeper filed suit against the City of Houston in the U.S. District Court for over 9,300 potential Clean Water Act violations



Background

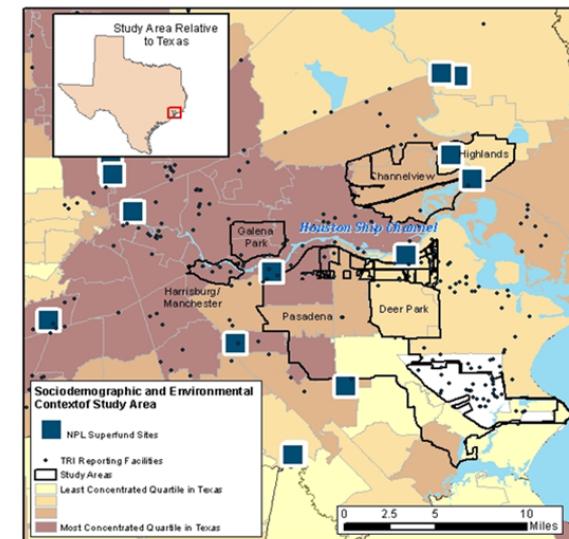
- Historically high rates of Preterm Birth
- PTB complications include chronic lung disease deficits later in life
- Overarching hypothesis is that maternal exposure to PAHs increases risk of PTBs and augments major morbidities (e.g., lung disease deficits)



Kahr MK, Suter MA, Ballas J, et al. Preterm birth and its associations with residence and ambient vehicular traffic exposure. *Am J Obstet Gynecol.* 2016;215(1):111.e1-111.e10. doi:10.1016/j.ajog.2016.01.171

Superfund Sites and Target Communities

- Target Communities surrounding the Ship Channel and Superfund sites
 - Harrisburg/ Manchester, Galena Park, Channelview, Pasadena, Deer Park, and the Highlands
 - EJ communities impacted by heavy industrialization, poverty, and environmental health effects of Superfund sites



Neighborhood	Population	Race/Ethnicity (data: ACS, 2016)					Median Income	↓ US Poverty Level (12.3%)	HS diploma or Higher
		White	Black	Asian	Other	Hispanic			
Harrisburg	53,280	62.5	3.0	2.8	31.7	87.9	37,763	22.5	51.9
Galena Park	11,119	78.2	5.6	0.1	16.1	83.8	44,467	21.5	58.8
Channelview	38,289	55.9	15.3	1.6	27.2	60.3	53,744	19.7	68.6
Pasadena	149,043	75.3	2.3	2.1	20.3	62.2	48,607	19.6	71.3
Deer Park	32,010	86.2	1.5	1.5	10.8	26.3	78,703	8.6	87.6
Highlands	7,522	84.2	3.1	0.4	12.3	24.8	58,295	17.3	82.8

Multi-directional Communication Mechanisms

- Have remained in contact with SAB, albeit no face-to-face meetings: activities include virtual meeting with CEC, surveys, interviews
- Environmental Justice *Encuentros*
 - Reflects concept of encounter or discovery to convene communities, researchers, policy makers, and others in small groups
 - Used to promote community and **research communications**
 - Increase use of EH science as basis for public health advocacy
 - Six *Encuentros*: focus on health and EH in context of disparities
 - Purpose: identify and prioritize issues and road ahead
 - Introduce concept of Community Science Workshops to facilitate community and **research projects**
- Next steps: synthesize meeting outcomes to inform Center research projects and potential new research (CSWs)

Community Project: Prenatal Education on environmental Exposures during Pregnancy Study (PEEPS)

- Linked to projects: Role of PAH Exposures in Preterm Birth (Aagaard) and Increased Risk of Premature Infants to Chronic Lung Disease (Moorthy)
- In conjunction with community clinic partner, HOPE Clinic
 - Purpose: to reduce maternal environmental exposures to toxicants through a prenatal education program to learn how to:
 - Reduce exposures from seafood
 - Understand risk to self and child
 - Make informed nutrition choices
 - Received IRB approval, IRB # 20-0026
 - Updating curricula and educational materials to reflect new guidelines
 - Written materials will be translated into multiple languages
 - Initial prenatal education classes will be piloted at HOPE Clinic



Scientific Report of the 2020 Dietary Guidelines Advisory Committee

Advisory Report to the Secretary of Agriculture and Secretary of Health and Human Services
First Print: July 2020

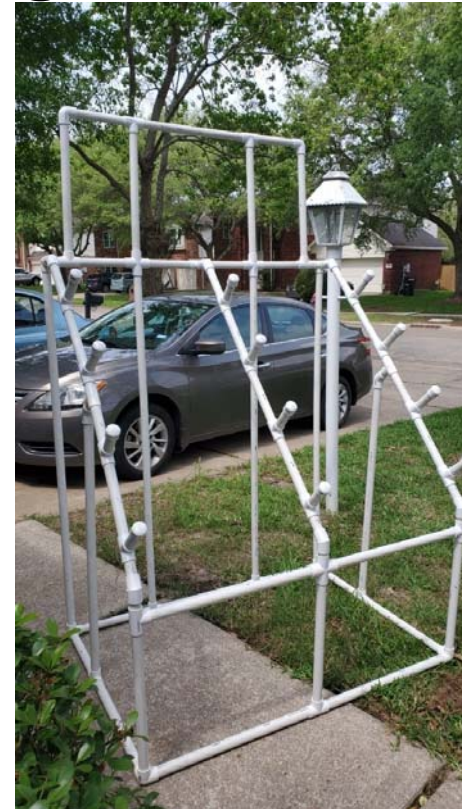
Community Project: Prenatal Education on environmental Exposures during Pregnancy Study (PEEPS)

- Upon curriculum completion:
 - Series of short videos related to seafood selection and preparation
 - Already shot footage with our (at the time) very pregnant colleague who graciously volunteered to help
 - Obtained use of a food prep station with built-in video capabilities to teach preparation and cooking



Community Project: Urban Gardening

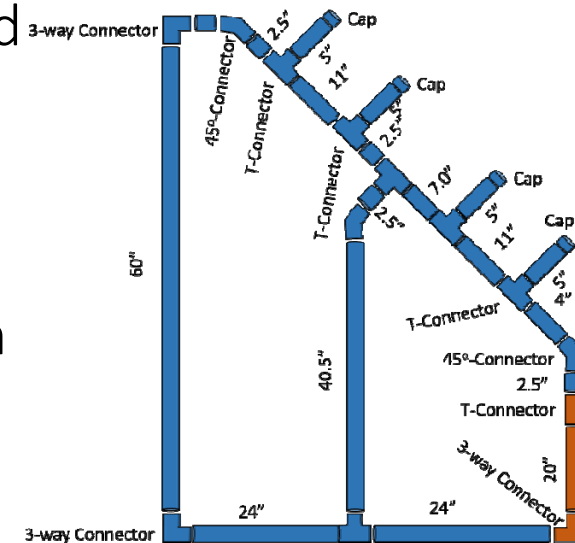
- Linked to projects: Pyrolytic Conversion of PAHs in Contaminated Sediments (Alvarez) and ID of PAHs/PACs in Environmental Samples Using Ultracompact Spectroscopy Platforms (Halas)
- Urban soil frequently contaminated. Prolonged flooding in Hurricane Harvey; many communities adjacent to Superfund sites inundated
- Air pollutants contribute to surface soil contamination
- Exposures through skin contact, inhalation, or ingestion
- CEC to teach gardening workshops on prevention, nutrition, and alternative methods of raising fruits and vegetables (e.g., hydroponic garden systems)



Hydroponic garden system to be provided for community members

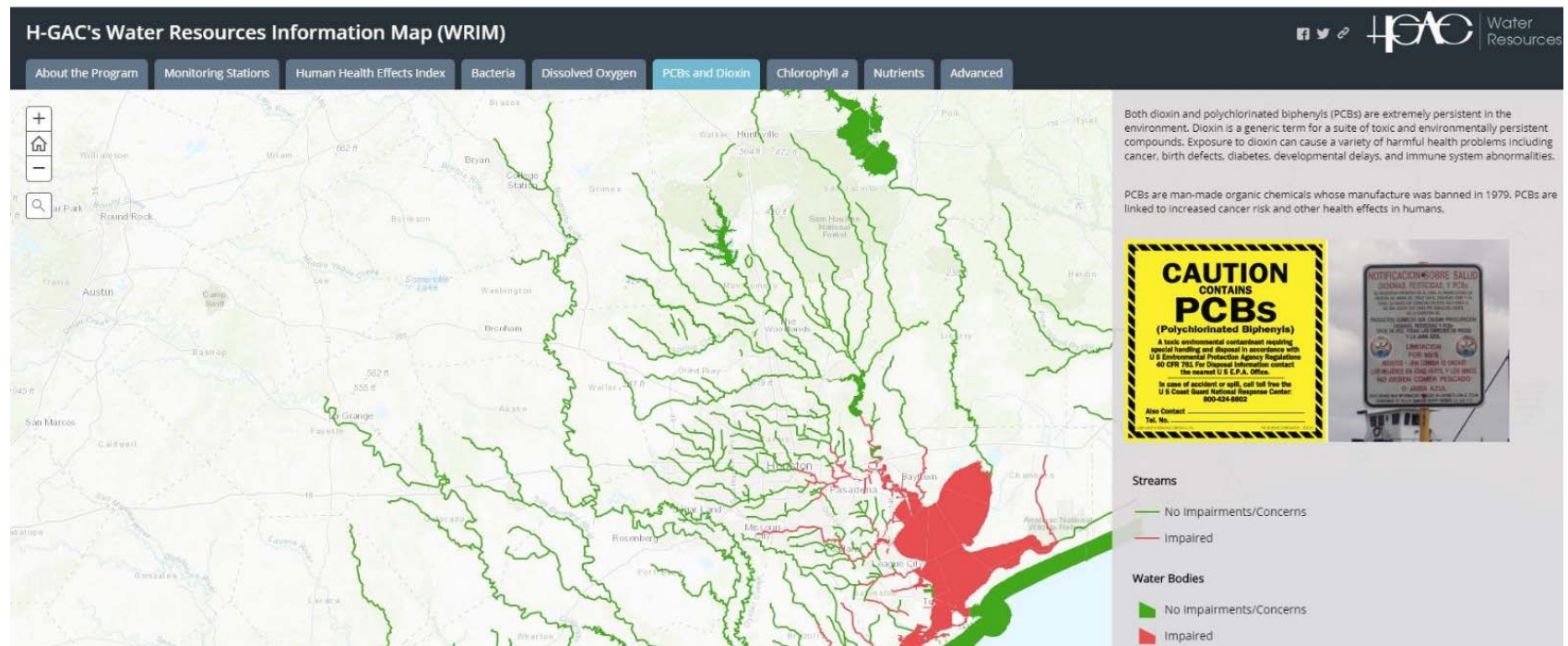
Community Project: Urban Gardening

- Developed educational curriculum and materials
 - Supply list
 - Detailed instructions for preparation and assembly
 - Instructional video
- Train the Trainer class scheduled for students targeted for recruitment for assisting with dissemination and providing training workshops
- Each participant will receive kit with pre-prepared supplies and handbook for assembly
- Workshop will focus on assembly of demonstration system (completed systems would be difficult to transport)

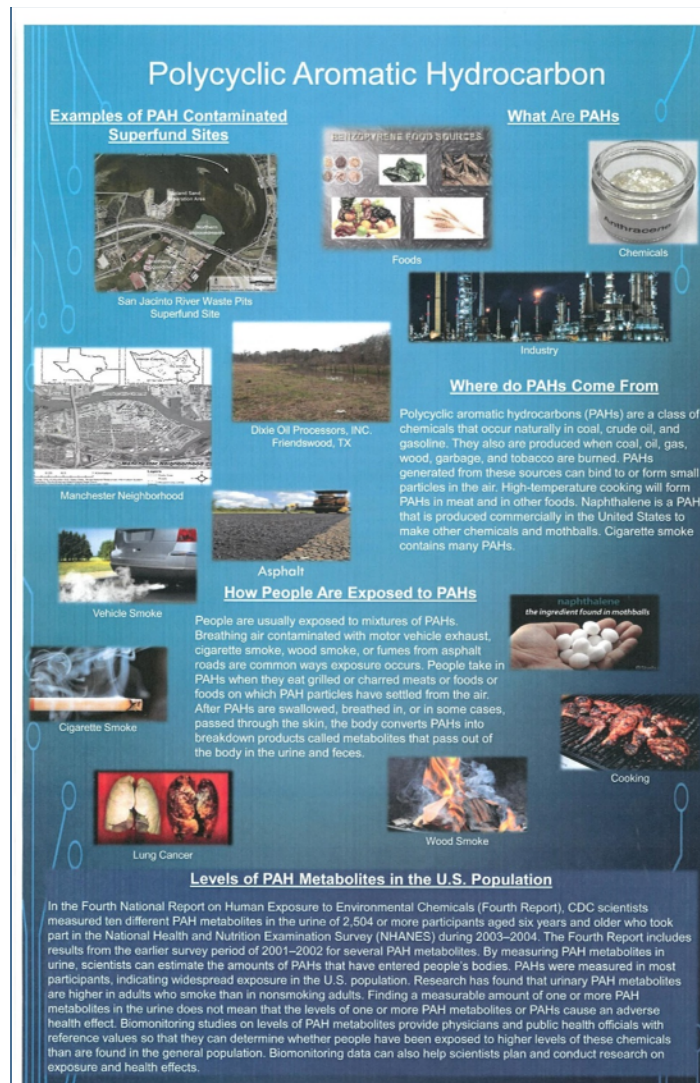
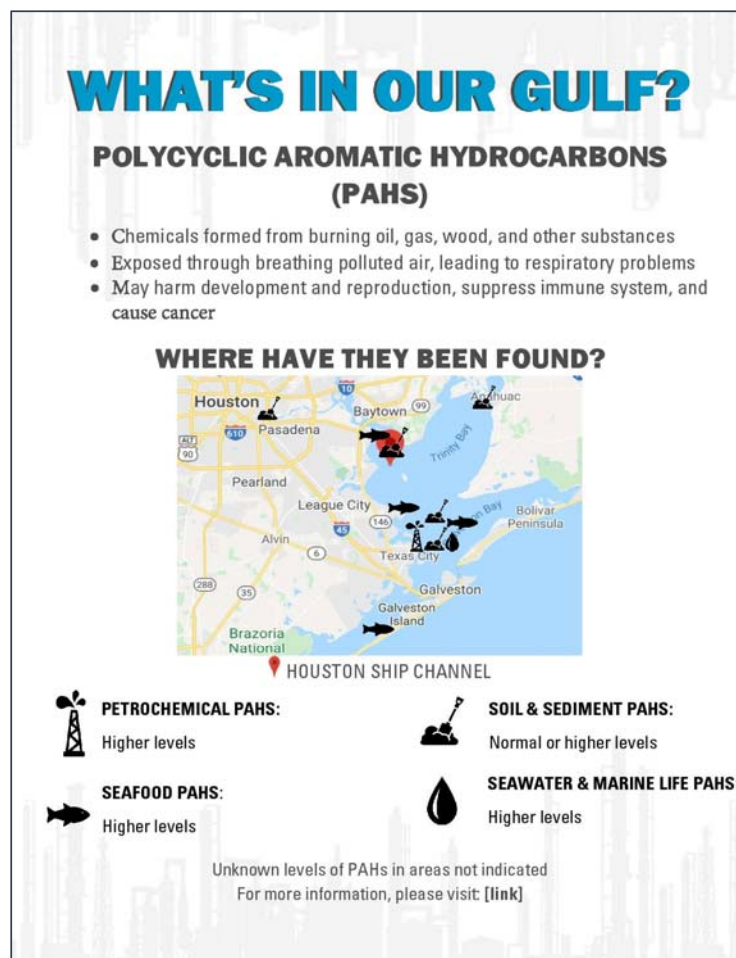


Community Project: PAH Mapping and Sampling

- Example: Houston-Galveston Area Council Map of PCBs and Dioxins
- Have collected data on PAH sampling for similar mapping project
- Also working to identify potential sources of water samples for analysis to inform outreach, research, and prevention efforts



PAH Infographics



Next Steps

- Meet with stakeholder groups to plan November *Encuentros*
- Synthesize *Encuentro* findings to inform Center research projects and potential new research (CSWs)
- Revamp Prenatal Education curriculum materials
- Draft scripts for creation of videos and short animations to teach about risk associated with seafood consumption
- Train the Trainer Hydroponic Gardening Workshop scheduled for November for students/trainees
- In discussions with Toxicology faculty member to initiate PAH sampling of soil, local waterways, and seafood to provide information education and outreach informed by specific local data