

Why Data Are Not Enough to Solve Health Inequities: Environmental Injustice, Corporate Influence and Public Health

- Tracey Woodruff, PhD, MPH
- Dept. of Obstetrics, Gynecology & Reproductive Sciences
- October, 2020

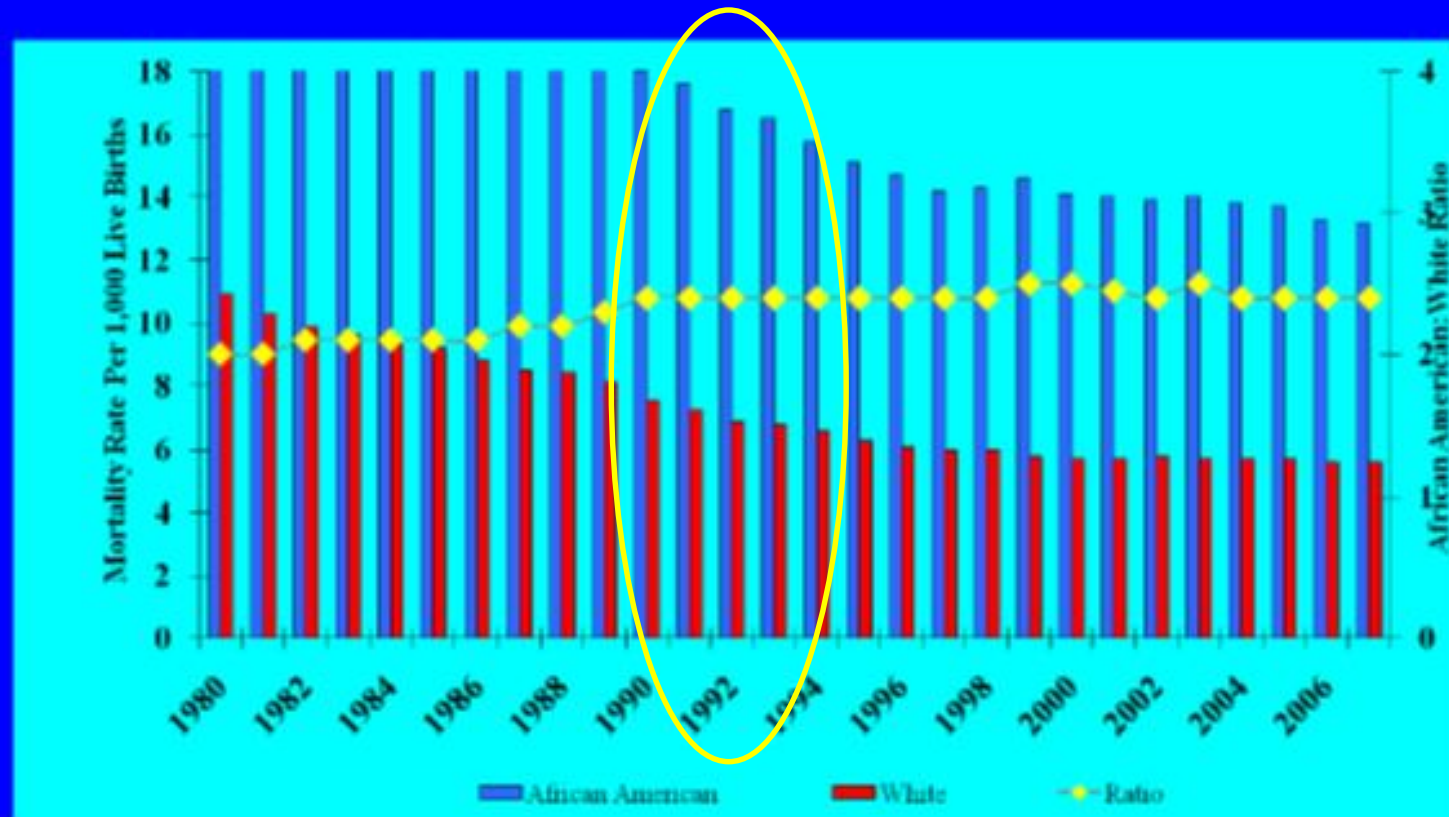




Healthier Environments for Healthier People
Targeted Research * Improved Clinical Care * Just Public Policy



African Americans and Whites, 1980-2007







Toxic Environmental Chemicals Are Found Everywhere, Everyday ... In Every Body



Chlorinated byproducts, pesticides,
microorganisms, inorganic & organic
chemicals, radionuclides



ozone, particulate
matter, lead. Hazardous
air pollutants



pesticides, heavy metals (Hg), persistent
organic pollutants (DDT, PCBs)



phthalates,
formaldehyde,
parabens,
toluene,
1,4 - dioxane



Bisphenol a

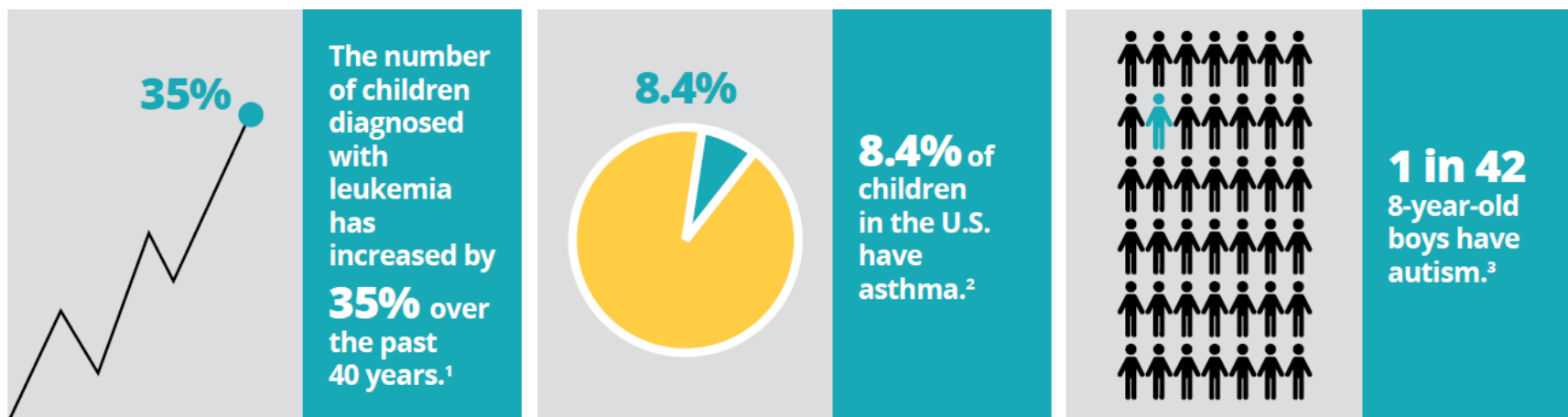
Pesticides



PBDEs, phthalates,
formaldehyde



Our children could be healthier



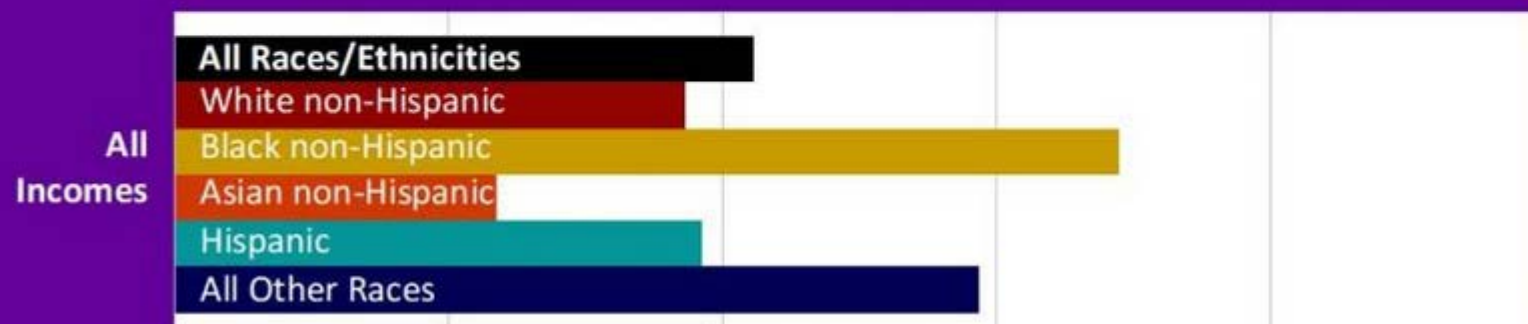
Children in the U.S. are at high risk for chronic disease

Source: NIEHS/EPA Children's Environmental Health and Disease Prevention Research Centers Impact Report 2017



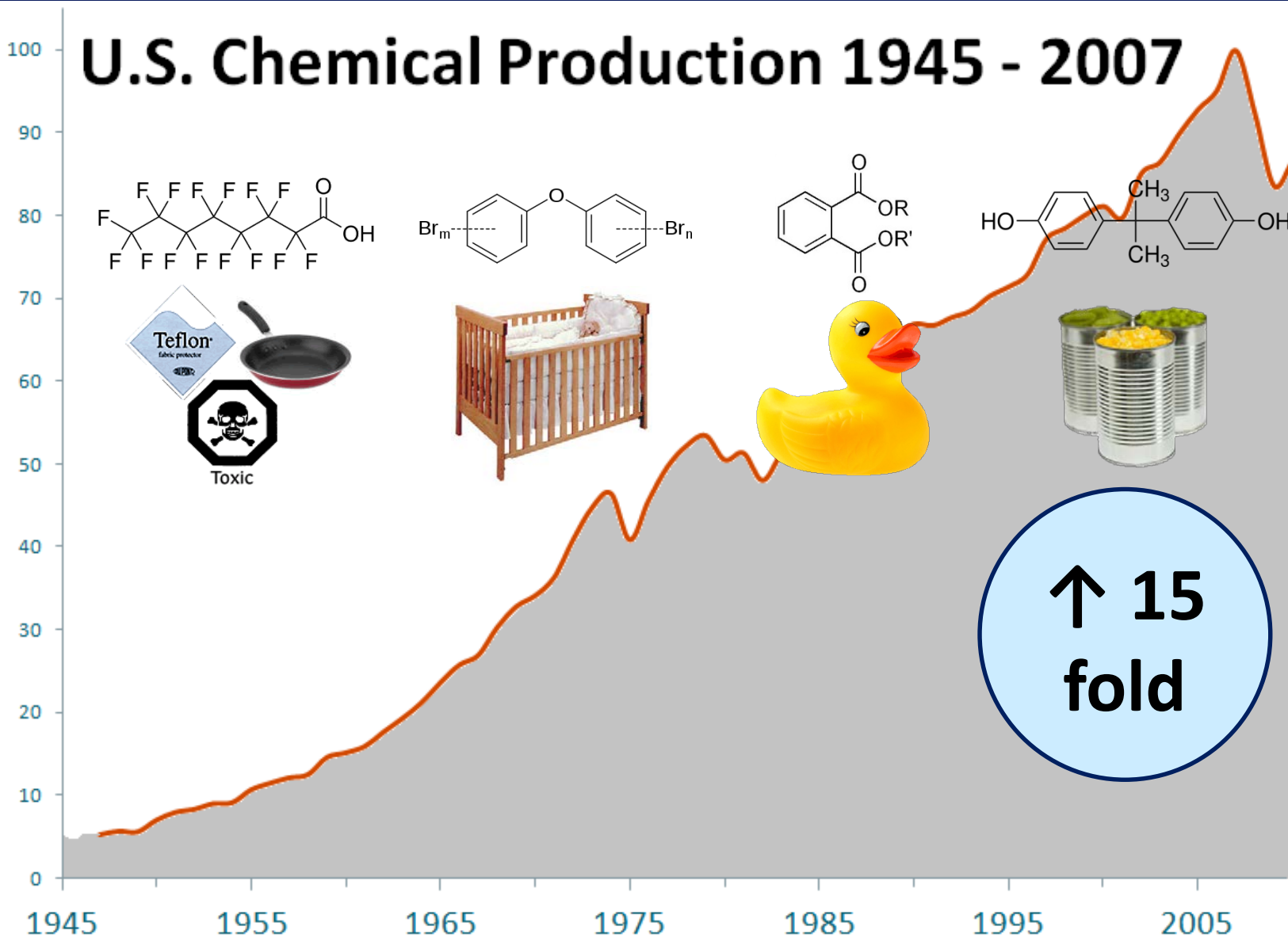
Indicator H2

Percentage of children ages 0 to 17 years reported to have current asthma, by race/ethnicity and family income, 2014-2017

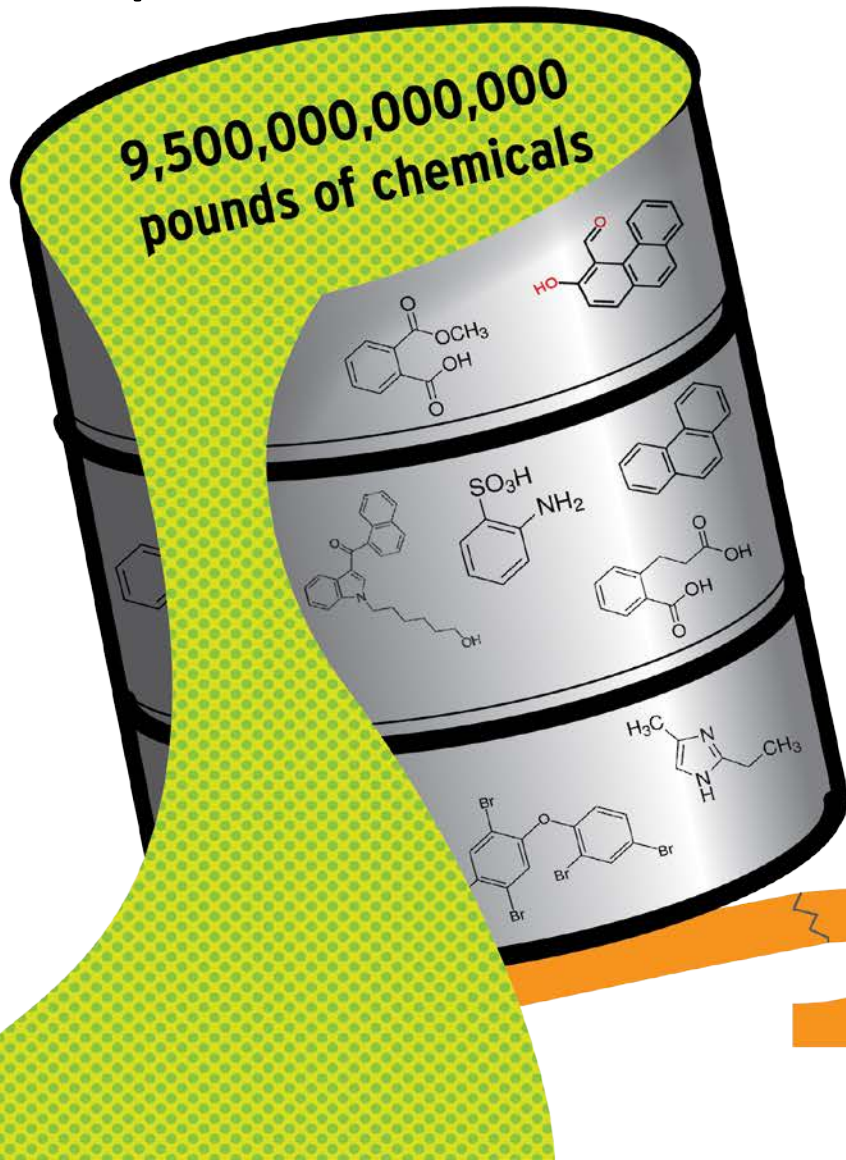


U.S. Chemical Production 1945 - 2007

Production compared to the year 2007



U.S. Chemical Production Volume Compared to Population



- **30,000 pounds of chemicals per person** 🧑

**U.S. POPULATION:
313,000,000**



US EPA CDR Fact Sheet: Chemical Snapshot, June 2014. The total reported (domestically manufactured and imported) for 2012.



Exposures start in utero to Toxic Chemicals

Industrial Chemicals in Virtually Every U.S. Pregnant Woman

43 +
industrial chemicals found
in pregnant women

Perchlorate	PCB-170
1-Hydroxypyrene	PCB-153
3-Hydroxyphenanthrene	PCB-146
2-Hydroxyphenanthrene	PCB-118
1-Hydroxyphenanthrene	PCB-110
1-Naphthol	PCB-105
2-Naphthol	PCB-101
2-Hydroxyfluorene	PCB-99
3-Hydroxyfluorene	PCB-74
9-Hydroxyfluorene	PCB-66
Mono-(3-carboxypropyl) phthalate (MCPP)	PCB-52
Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP)	PCB-49
Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)	PCB-44
Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)	PCB-28
Mono-ethyl phthalate (MEP)	PBDE-153
Mono-n-butyl phthalate (MnBP)	PBDE-100
Mono-isobutyl phthalate (MiBP)	PBDE-47
Mono-benzyl phthalate (MBzP)	Perfluorononanoic acid (PFNA)
Benzophenone-3	Perfluorooctane sulfonic acid (PFOS)
Hexachlorobenzene	Perfluorooctanoic acid (PFOA)
p,p' - Dichlorodiphenyldichloroethene (DDE)	PCB-138 and -158
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	



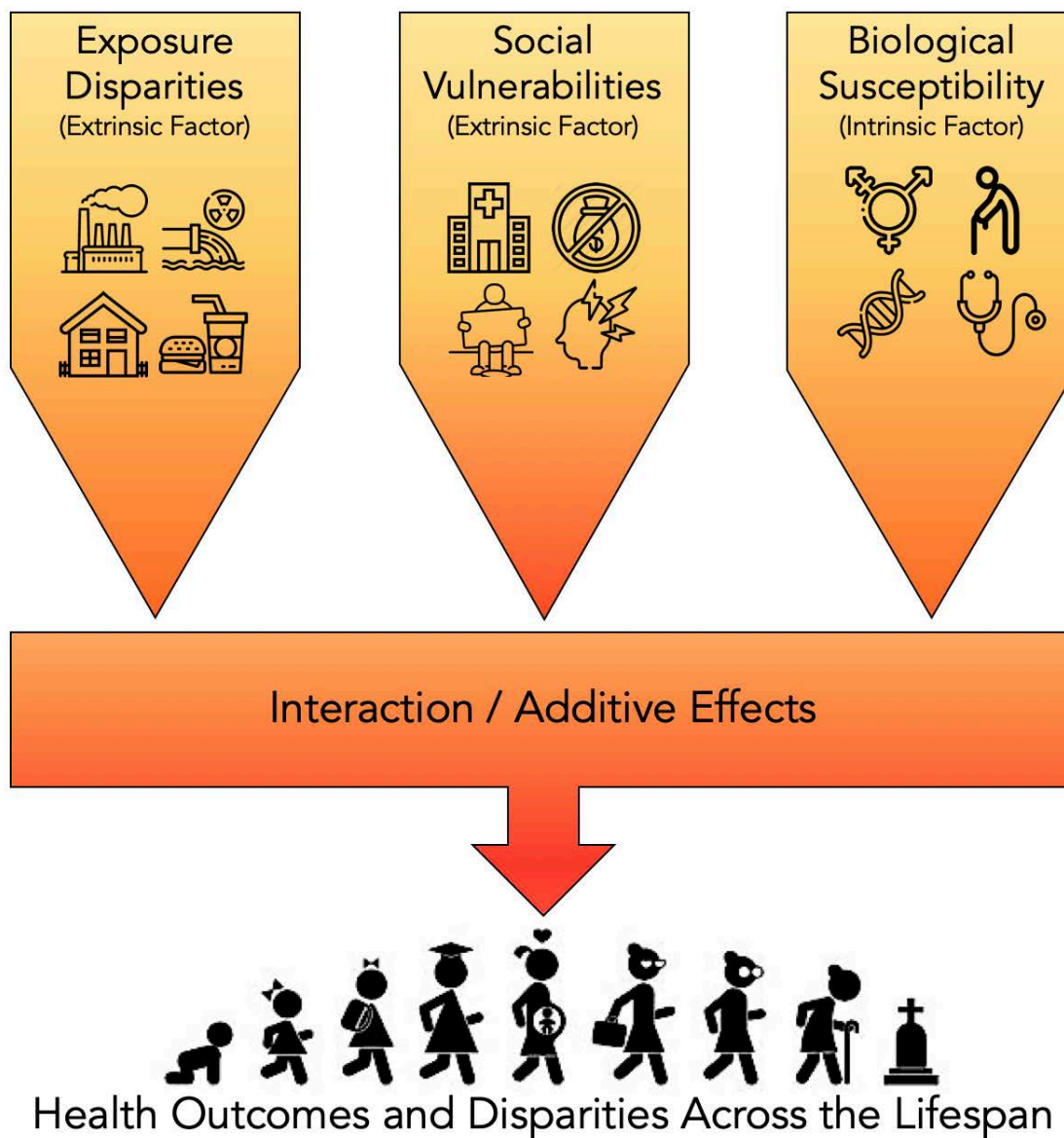


... “ to a disturbing extent,
babies are born pre-polluted.”

National Cancer Institute



Triple Jeopardy of Social Inequality



Morello-Frosch et al., 2011
Gee and Payne-Sturges, 2004
O'Neill et al. 2003
IOM, 1999

The Emergence of Environmental Justice Advocacy: Warren County, North Carolina



WARREN CO

- 1978, a waste hauler illegally dumps over 30,000 gallons of waste contaminated with PCBs on roadways in 14 counties in North Carolina

- U.S. EPA designates roadsides as Superfund site to trigger clean-up process

- 60,000 tons of highly PCB-contaminated soil is scraped up from 210 miles of roadside shoulders in North Carolina.

NC selects Warren County to put the waste
65% African Americans, one of the poorest counties in the nation



1978-1982: Protesting Landfill Siting in Warren County and Beyond



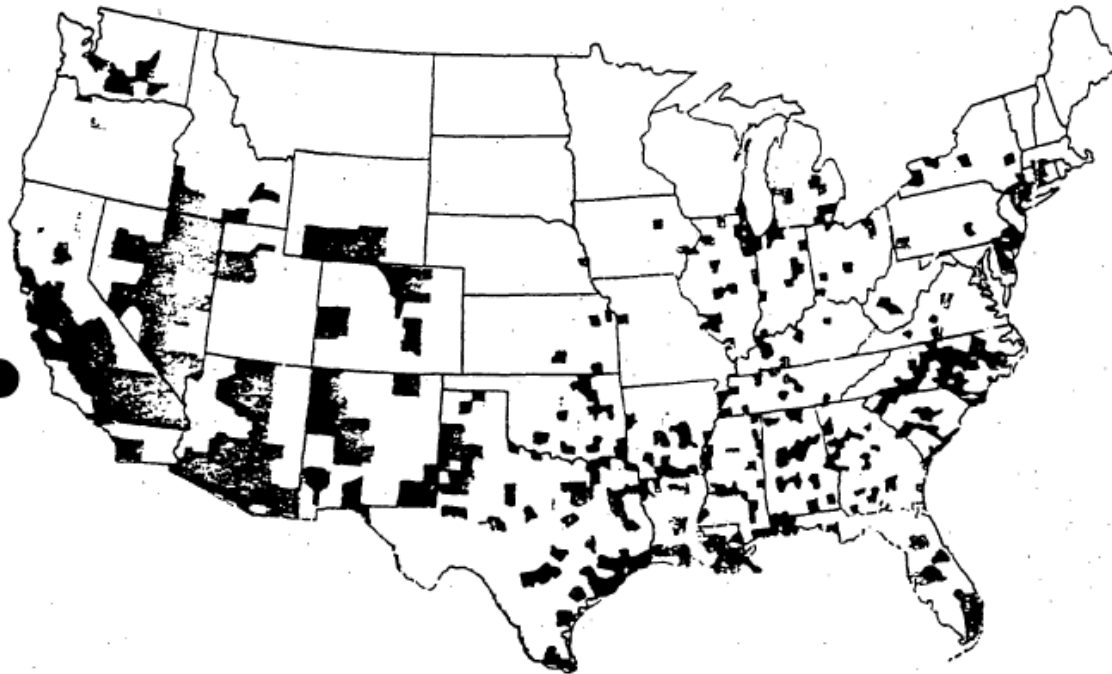
[Washington Post](#) described Warren County's PCB protest movement as "the marriage of environmentalism with civil rights"



TOXIC WASTES AND RACE

In The United States

**A National Report on the Racial and Socio-Economic
Characteristics of Communities
with Hazardous Waste Sites**



COMMISSION FOR RACIAL JUSTICE
United Church of Christ
©1987



Researchers and regulators pushed by EJ advocates to better address cumulative impacts

Consider social inequality and links to environmental degradation & health disparities:

- **Multiple** hazards where communities live, work, and play
- **Vulnerability** due to chronic social stressors
 - poverty, malnutrition, discrimination chronic health problems





United States
Environmental Protection
Agency

Policy, Planning
And Evaluation
(PM-221)

230-DR-92-002
February 1992

Environmental Equity Draft

Reducing Risk For All Communities



Report To The Administrator
From The EPA Environmental
Equity Workgroup

Initiated in 1990 Report Finds

- PCB protest movement "the watershed event that led to the environmental equity movement of the 1980's."
- There are clear differences between racial group in terms of disease and death
- Racial minority and low-income populations experience higher than average exposure to selected air pollutants, hazardous waste facilities, contaminated fish and agricultural pesticides in the workplace



Cumulative Exposure Project



Cumulative Exposure Project

About the Project

The objectives of the Cumulative Exposure Project are to:

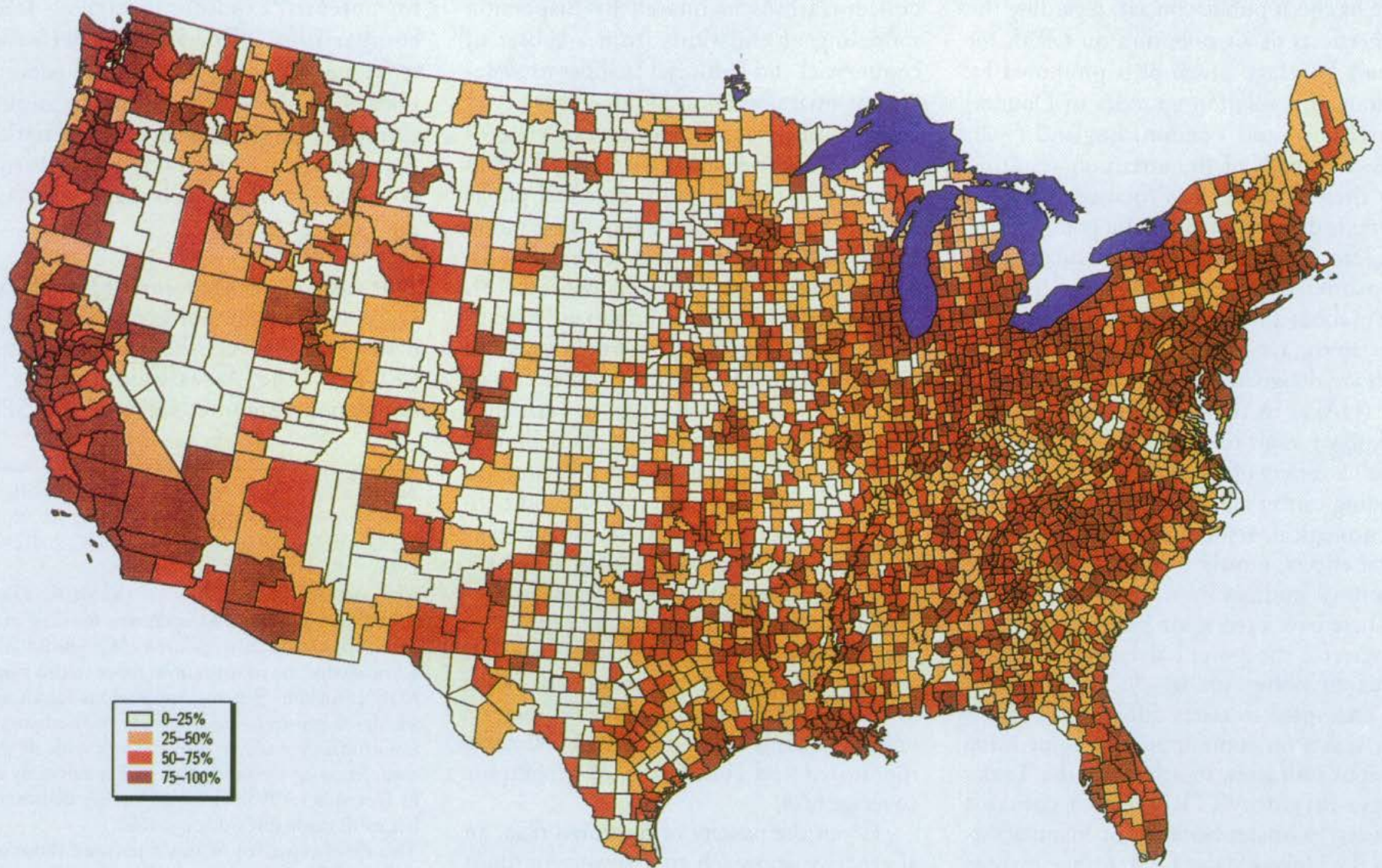
- estimate exposure levels for a wide variety of toxic pollutants;
- characterize the national distribution of these estimated exposure levels across communities and demographic groups;
- identify the types of communities and demographic groups which appear to have the highest exposure levels; and
- identify potentially important emission sources and pollutants for which information is most uncertain.

Many of EPA's exposure analyses and risk assessments focus on a single pollutant, a single source or category of emissions, or a single environmental medium (such as air or water). In reality, people tend to be exposed through multiple pathways to numerous pollutants originating from a variety of sources.

The Cumulative Exposure Project (CEP), initiated in 1994 by EPA's [Office of Policy](#), uses existing data and methods to evaluate the combined exposures to multiple through three different pathways -- air, food, and drinking water. The goal is to examine the cumulative impacts of multiple pollutants and to determine the important contributors to cumulative exposure.



148 toxic air contaminants * 60,803 census tracts * 1990



National Air Toxics Assessment

CONTACT US

SHARE



2014 NATA

View the [2014 NATA Map](#) to see NATA results anywhere in the nation.



On August 22, 2018, EPA released the most recent update to the National Air Toxics Assessment (NATA). NATA uses emissions data from 2014 to estimate health risks from toxic air pollutants.

[Learn more](#)

[En español](#)

Learn about NATA

- [Overview](#)
- [Limitations](#)

2014 NATA Assessment

- [2014 Assessment Results](#)
- [2014 NATA Map](#)

Quick Links

- [Previous versions of NATA](#)
- [Other environmental screening tools](#)
- [Learn about risk assessment](#)
- [Hazardous Air Pollutants website](#)



Integrated Risk Information System

CON

IRIS Program Outlook Document Released

- Dec 2018: [IRIS Program Outlook Document](#)

- Qualitative and quantitative health effects information on >540 substances
- Provides information on CANCER and noncancer Hazard and Ris

November 21, 2019

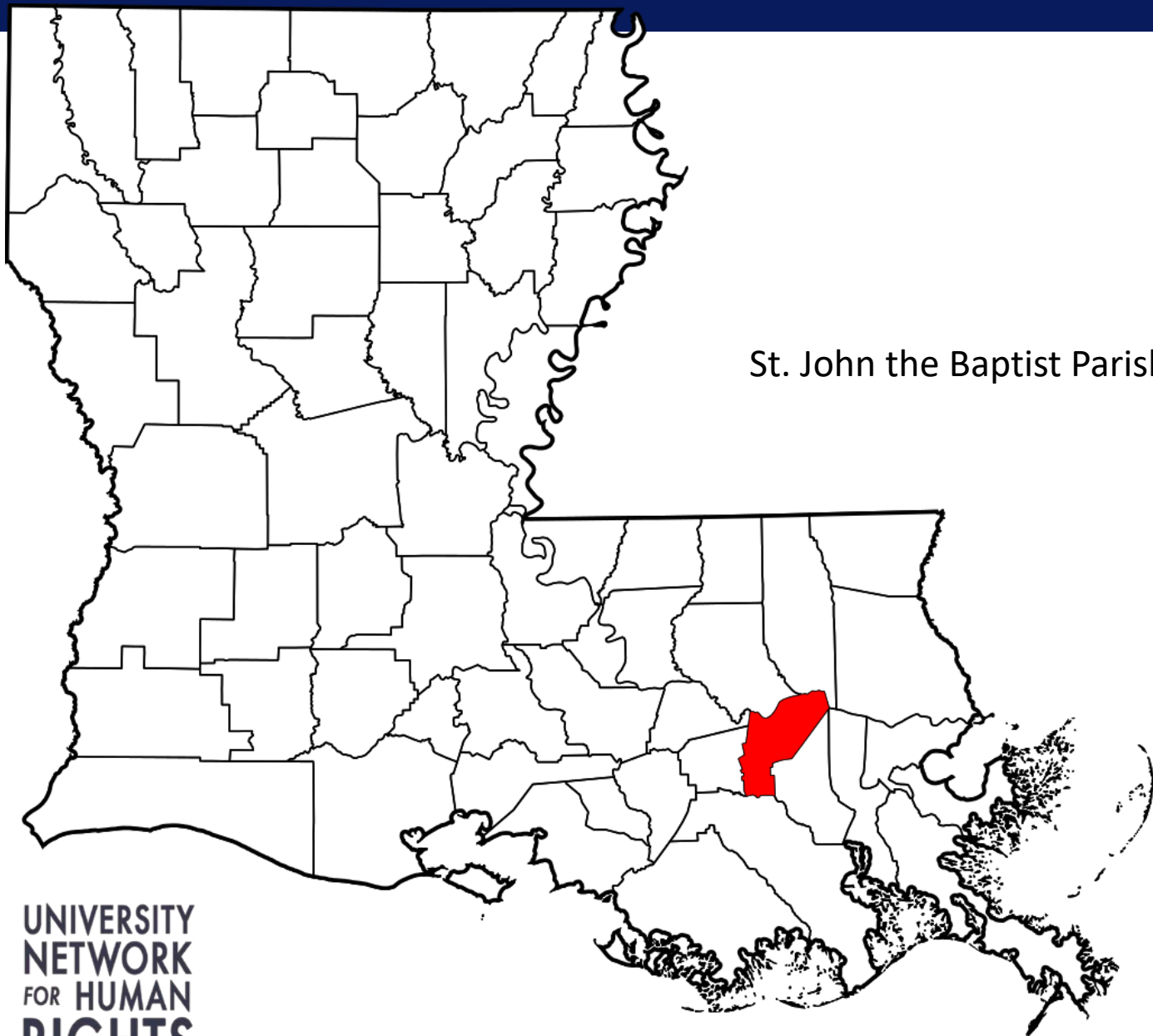


Robert Taylor and Mary Hampton outside EPA headquarters in Washington, DC.

Matt Roth for Earthjustice

<https://theintercept.com/2017/03/24/a-louisiana-town-plagued-by-pollution-shows-why-cuts-to-the-epa-will-be-measured-in-illnesses-and-deaths/>





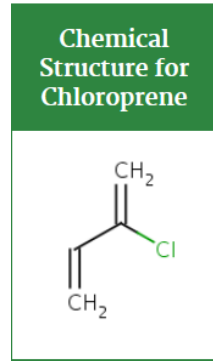
St. John the Baptist Parish



UNIVERSITY
NETWORK
FOR HUMAN
RIGHTS







TOXICOLOGICAL REVIEW OF CHLOROPRENE







(CAS No. 126-99-8)

In Support of Summary Information on the
Integrated Risk Information System (IRIS)




September 2010

Likely Carcinogen

Tumor Sites

- 
[Dermal](#)
- 
[Gastrointestinal](#)
- 
[Hepatic](#)
- 
[Ocular](#)
- 
[Reproductive](#)
- 
[Respiratory](#)

Critical Effect Systems

- 
[Immune](#)
- 
[Nervous](#)
- 
[Respiratory](#)

The NTP (1998, 042076; 2005, 093207) described chloroprene as reasonably anticipated to be a human carcinogen

The International Agency for Research on Cancer (IARC) classified chloroprene in as “possibly carcinogenic to humans” 1999





LEGAL
Wilmington, Delaware 19898

(A)

8EAP-92-13131
INIT
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October 18, 1992

Document Processing Center (TS-790)
Office of Pollution Prevention and Toxics
Environmental Protection Agency
401 M Street., S.W.
Washington, D.C. 20460
Attn: Section 8(e) Coordinator (CAP Agreement)

Dear Coordinator:

8ECAP-0025

On behalf of the Regulatee and pursuant to Unit II B.1.b. and Unit II C of the 6/28/91 CAP Agreement, E.I. Du Pont de Nemours and Co. hereby submits (*in triplicate*) the attached studies. Submission of this information is voluntary and is occasioned by unilateral changes in EPA's standard as to what EPA now considers as reportable information. Regulatee's submission of information is made solely in response to the new EPA §8(e) reporting standards and is not an admission: (1) of TSCA violation or liability; (2) that Regulatee's activities with the study compounds reasonably support a conclusion of substantial health or environmental risk or (3) that the studies themselves reasonably support a conclusion of substantial health or environmental risk.

The "Reporting Guide" creates new TSCA 8(e) reporting criteria which were not previously announced by EPA in its 1978 Statement of Interpretation and Enforcement Policy, 43 Fed Reg 11110 (March 16, 1978). The "Reporting Guide states criteria which expands upon and conflicts with the 1978 Statement of Interpretation. Absent amendment of the Statement of Interpretation, the informal issuance of the "Reporting Guide" raises significant due processes issues and clouds the appropriate reporting standard by which regulated persons can assure TSCA Section 8(e) compliance.

Based on clarification of
reporting requirements
1991



Medical Research Project No. MR-77

The Toxicity of Monovinyl Acetylene,
Chlorobutadiene and Phosphine

Haskell Laboratory of
Industrial Toxicology
Wilmington, Delaware

Medical Research Project No. MR-77

Distribution

5/28/41



Medical Research Project No. MR-77

The Toxicity of Monovinyl Acetylene,
Chlorobutadiene and Phosphine

Toxicity of Chlorobutadiene

Experimental and clinical studies made during the last three and one-half years in the Haskell Laboratory have shown that the earliest detectable effects of exposure to concentrations of toxic vapors, gases, or fumes, which might eventually cause serious disturbance of health, are a simple list of complaints made by workers and significant trends in the level of the various blood pressure factors.

The symptoms usually met are headache, ease of fatigue, gastric disturbance (nausea, loss of appetite, frequent belching, distention of the stomach, pain in the epigastrium), dizziness, respiratory distress on exertion, pain around the heart, palpitation, and tingling or pain in the arms. The changes in blood pressure depend upon the atmospheric concentration of the toxic chemical, and are, in general:

The greatest number of complaints was found in workers with chlorobutadiene, and the least in those working with monovinyl acetylene. In decreasing frequency of occurrence, the complaints were:

Nervousness

Fatigue

Indigestion (heartburn, gas on
stomach, or gastric fullness)
Dizziness

Palpitation

Headache

Nausea

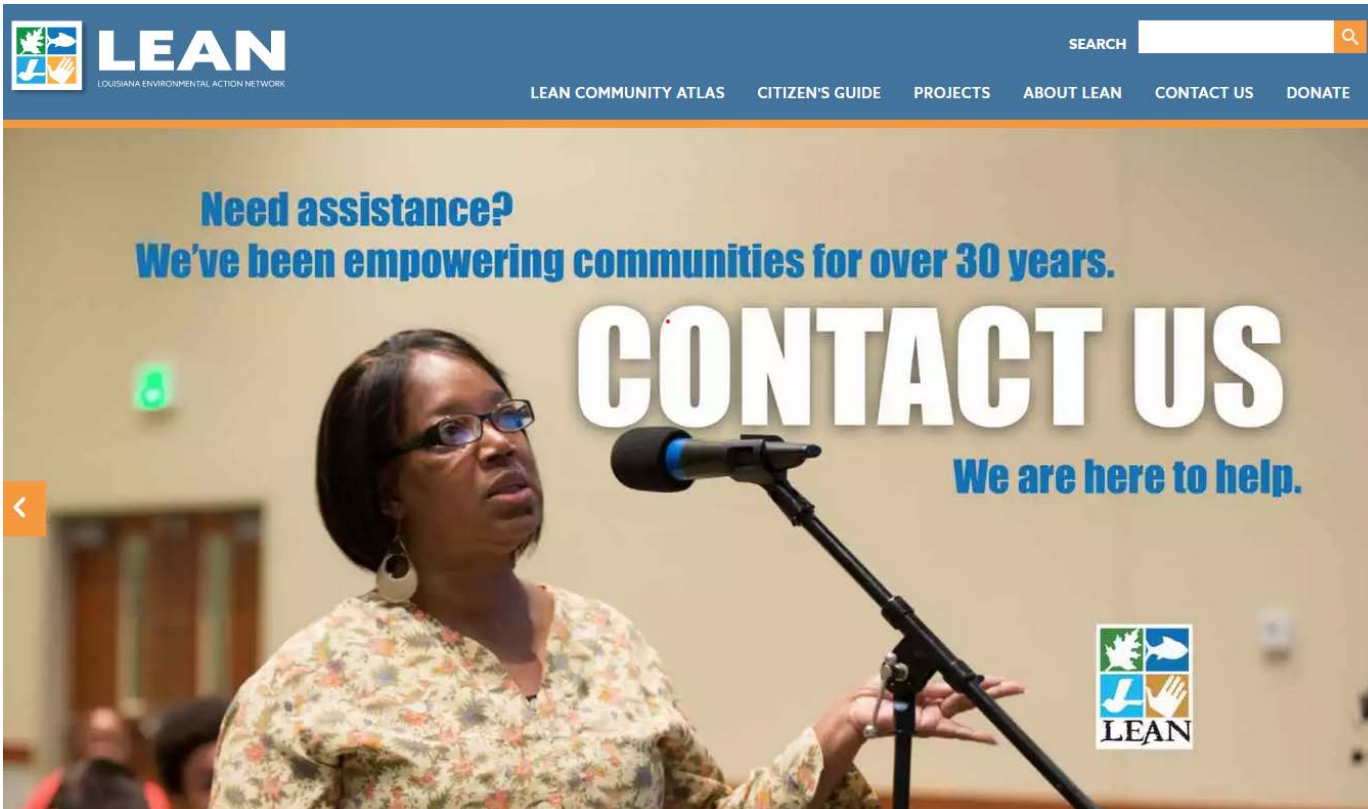
Epigastric pain

Precordial pain

Constipation or Diarrhea

The most marked signs were circulatory abnormalities (slow or rapid pulse, moderately elevated or low blood pressure and pulse pressure). There was also frequent abnormality in the response of the circulation to change from a lying to a standing position. These





- December 2015 - EPA's 2011 National Air Toxics Assessment (NATA) released
 - Risk of cancer from Denka neoprene facility ~50 times national average from chloroprene
- May 2016 - EPA sends memo to EPA Region 6 about chloroprene cancer risk, recommends a lower emissions level
- Region meets with Louisiana Environmental Action Network



CASE CLOSED

?



Going to EPA to meet with IRIS staff

Meetings & with who

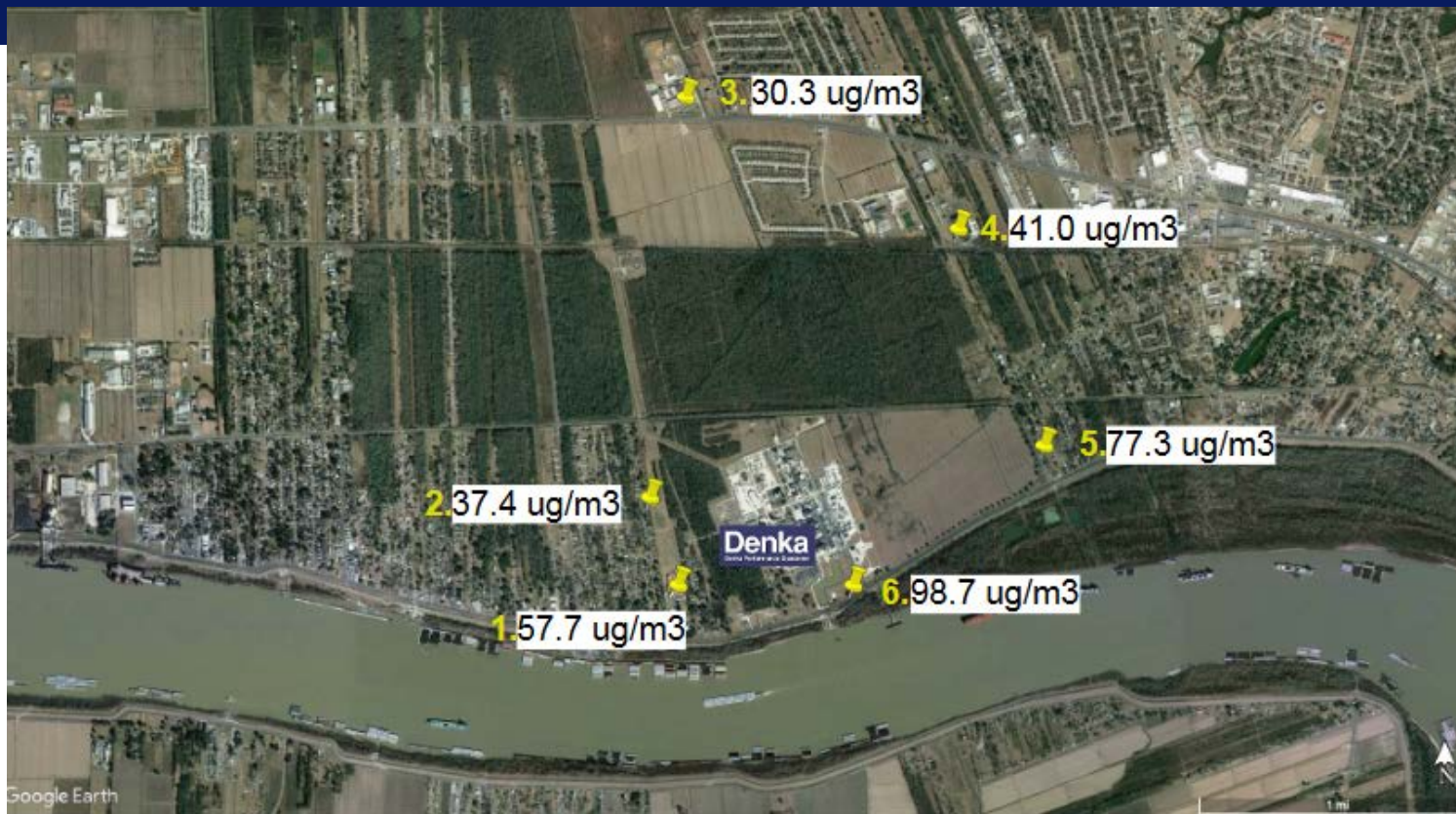
- Aug, 2016 - industry
- Oct, 2017 - industry
- July 2018 - industry
- June 2019 - industry
- Nov 2019 (citizens and environmental health groups - note that there is NO EPA people recorded attending)
- Feb 2020 - industry

- Industry asking for reconsideration of chloroprene officially since 2017

Industry meetings with EPA

- Denka Performance Elastomer (DPE)
- Ramboll Consulting
- Environ
- Bracewell
- Karv Communications
- Cardno ChemRisk
- Andersen ToxConsulting





Chloroprene Air EPA Integrated Risk Information System Limit 0.2 ug/m3

EPA Air Sampling Locations - highest concentration of 2018

1. Fifth Ward Elementary School - 57.7 ug/ms
2. 238 Chad Baker Street - 37.4 ug/m3
3. East St John Highschool - 30.3 ug/m3
4. Oschner Hospital - 41.0 ug/m3
5. Acorn at Highway 44 - 77.3 ug/m3
6. Mississippi River Levee - 98.7 ug/m3

150-about 500 times greater than the EPA limit



November 21, 2019



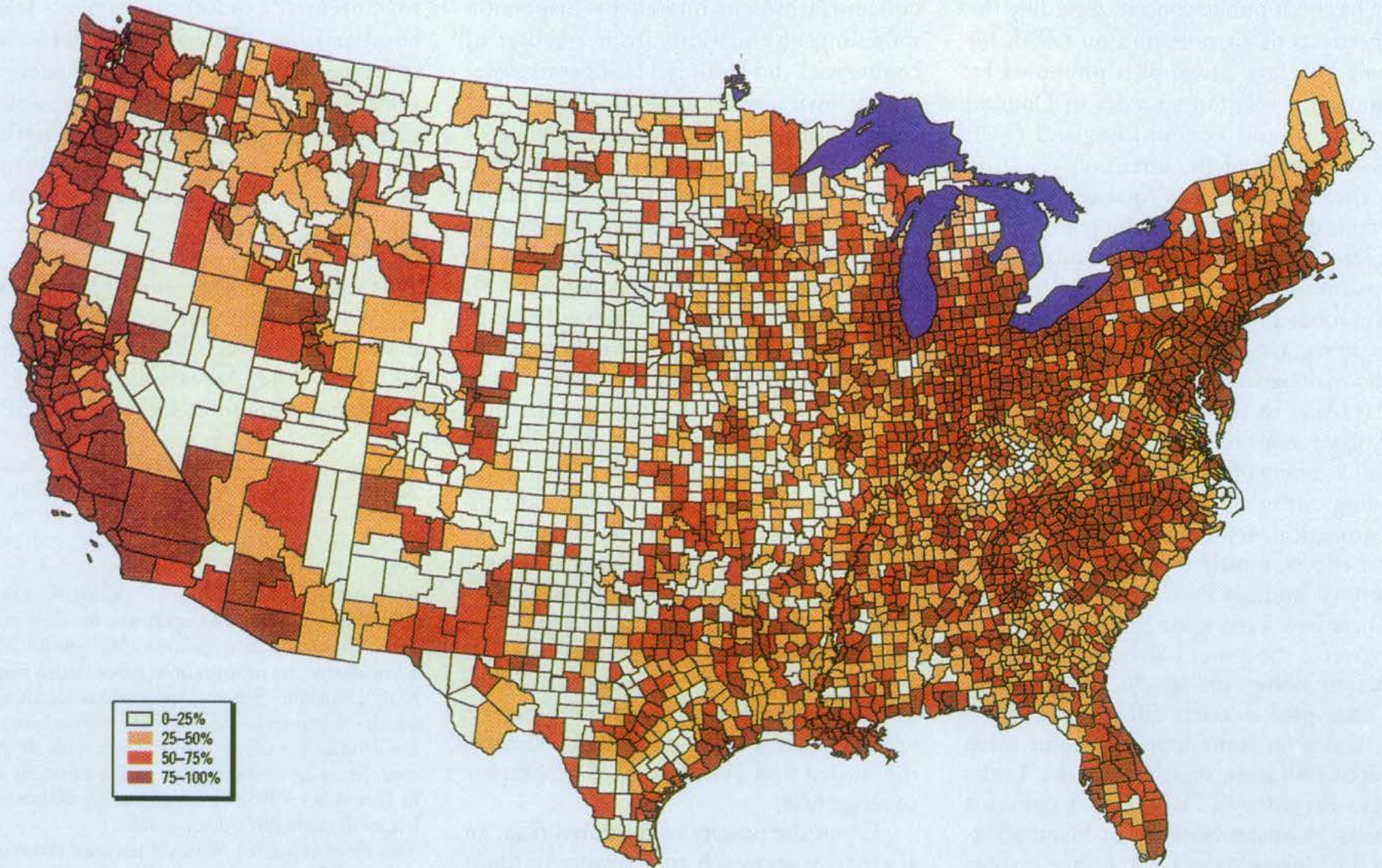
Robert Taylor and Mary Hampton outside EPA headquarters in Washington, DC.

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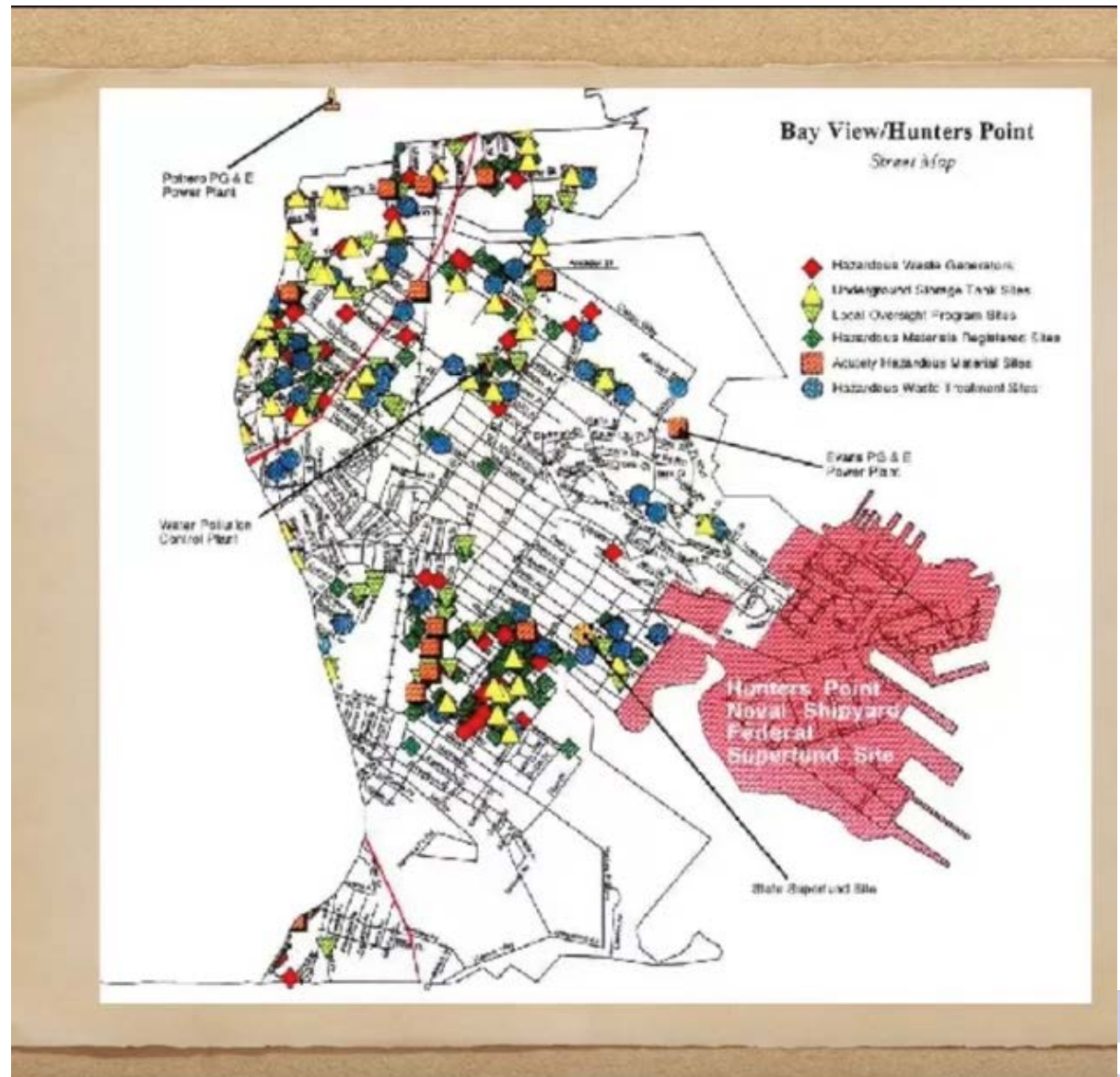


148 toxic air contaminants * 60,803 census tracts * 1990



Closer to Home – Bay View Hunters Point – 1994-97

- 340 Business handling hazardous materials
- 160 Hazardous waste generators
- 100 Brownfield sites
- 1(2) Superfund Sites



BAYVIEW HUNTERS POINT SAYS:



Tetra Tech was responsible for radiological remediation at the Shipyard, consistent with a Superfund cleanup plan known as a Record of Decision ("ROD"). Rather than conducting a proper cleanup, however, Tetra Tech faked potentially thousands of soil samples, substituting known "clean" samples to prove remediation had been completed when it had not discarded "dirty" samples altered data to avoid further cleanup; used potentially contaminated soil as backfill on the Shipyard; permitted potentially contaminated soil to be shipped offsite to locations not permitted for radiological waste; and falsified building surveys to make them appear clean enough for "free release."



Tetra Tech committed widespread radiological fraud at a Superfund site in a neighborhood long known to be burdened by serious pollution.



Industry Documents Library / About

About

Overview

Image Credits

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OVERVIEW

The Industry Documents Library is a digital archive of documents created by industries which influence public health, hosted by the [University of California San Francisco Library](#). Originally established in 2002 to house the millions of documents publicly disclosed in litigation against the tobacco industry in the 1990s, the Library has expanded to include documents from the drug, chemical, food, and fossil fuel industries to preserve open access to this information and to support research on the commercial determinants of public health.



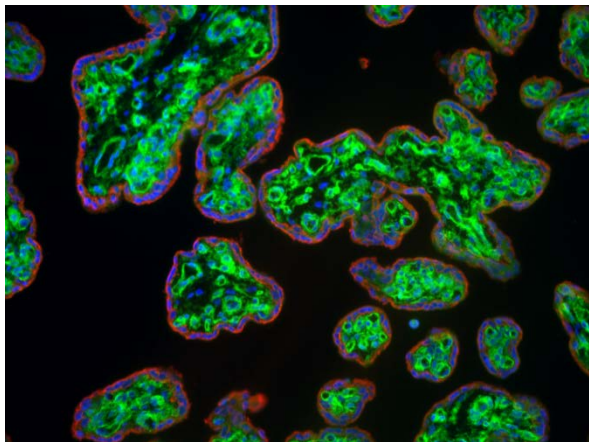
"I'm afraid there's not much I can do for you now. You should've come in sooner, before you got sick."



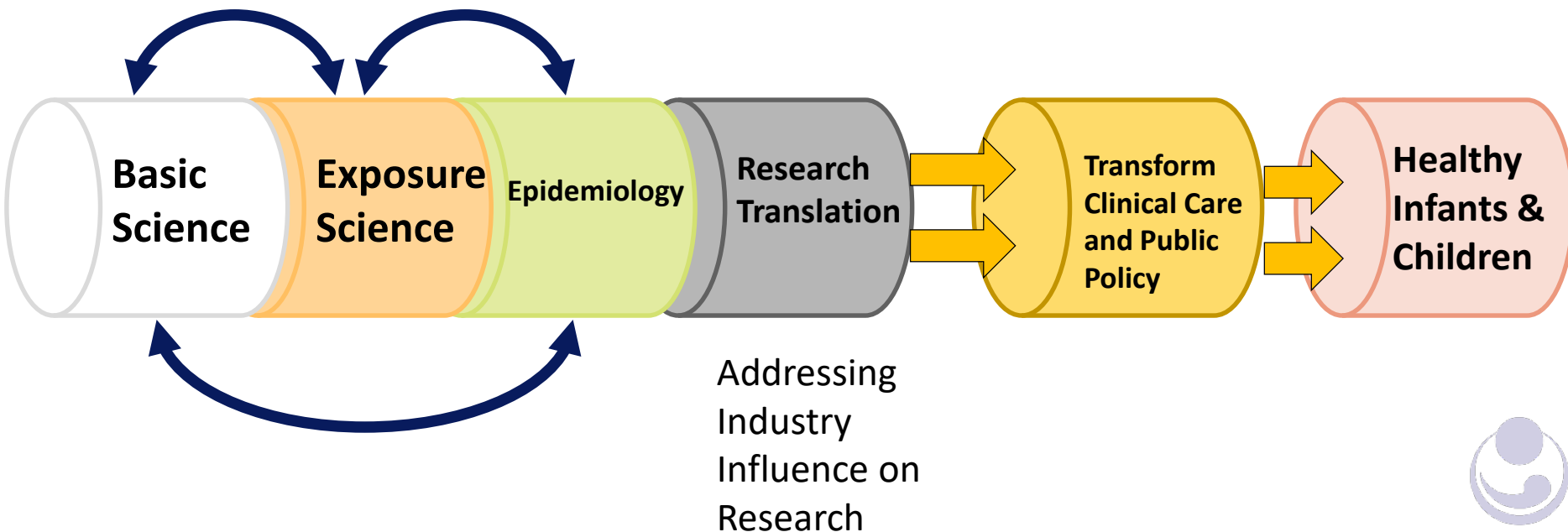
Beyond our individual control.....



Multi-Prong Strategy



Research that matters





INTERNATIONAL FEDERATION OF GYNECOLOGY & OBSTETRICS

Recommendations for Preventing Exposure to Toxic Chemicals

Recommendation 1: Advocate for policies to prevent exposure to toxic environmental chemicals

Recommendation 2: Work to ensure a healthy food system for all

Advocate for policies to prevent exposure to toxic environmental chemicals

Work to ensure a healthy food system for all

Make environmental health part of health care

Champion environmental justice

Recommendation 3: Make environmental health part of health care

Recommendation 4: Champion environmental justice

Governor signs cap-and-trade bills

Oct 1, 2012, 1:36pm PDT

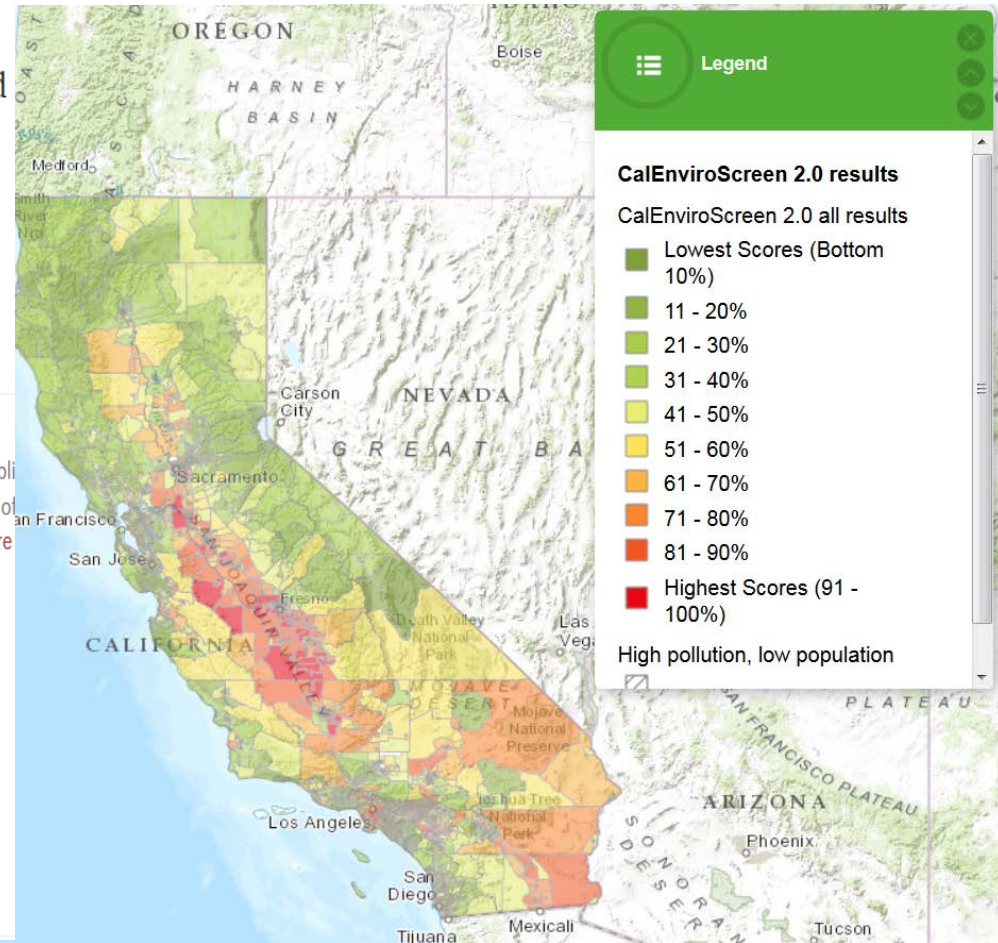
INDUSTRIES & TAGS Environment, Energy, Cleantech

A two-bill package that establishes how proceeds from the sale of carbon permits will be spent under California's cap-and-trade regulation was signed into law by Gov. **Jerry Brown** on Sunday.

The bill package, which sends a significant portion of the proceeds to disadvantaged communities, was supported by a broad coalition of environmental and civil rights groups.



A two-bill package that establishes how proceeds from the sale of carbon permits will be... [more](#)



requires a minimum of 10 percent of revenue generated by the cap-and-trade program to be directed to disadvantaged communities to reduce pollution and develop clean energy.



At Home



Student Recommendations on the Future of Community Engagement at UCSF

We speak directly from our experiences as researchers, community advocates, and students at UCSF in saying that our institution has not earned the trust of the communities we serve. We write as members of the Do No Harm Coalition and other student allies.



- Community Leadership Boards
- UCSF should redistribute small percent of large philanthropic gifts toward community partnership
- Consistent with recommendations from School of Medicine Community Action Group
 - Wylie Liu, myself - cochairs



UCSF Center for Community Engagement



Conclusions

- Environmental chemical exposures is ubiquitous and is adversely affecting health inequitably
- Science alone cannot move systematic change
 - But engagement by scientists and health care providers is critical
- Research and translation that leads to less biased science
- Community partnership/support



THE PLANT NEXT DOOR

A Louisiana Town Plagued by Pollution Shows Why Cuts to the EPA Will Be Measured in Illnesses and Deaths



Acknowledgements

- Sharon Lerner
- University Network for Human Rights
- Community in St. John the Baptist Parish, LA

Reading

- Waiting to Die – University Network for Human Rights – <https://www.humanrightsnetwork.org/waiting-to-die>
- The Plant Next Door <https://theintercept.com/2017/03/24/a-louisiana-town-plagued-by-pollution-shows-why-cuts-to-the-epa-will-be-measured-in-illnesses-and-deaths/>



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The Clarence E. Heller Charitable Foundation



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Harim Lee	Hunters Point Community
Joshua Robinson	Advocates





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