

# Urban Oil Drilling, Environmental Justice and Community Concerns

---

Jill Johnston, PhD

University of Southern California

March 2024



USC

Environmental Health Centers

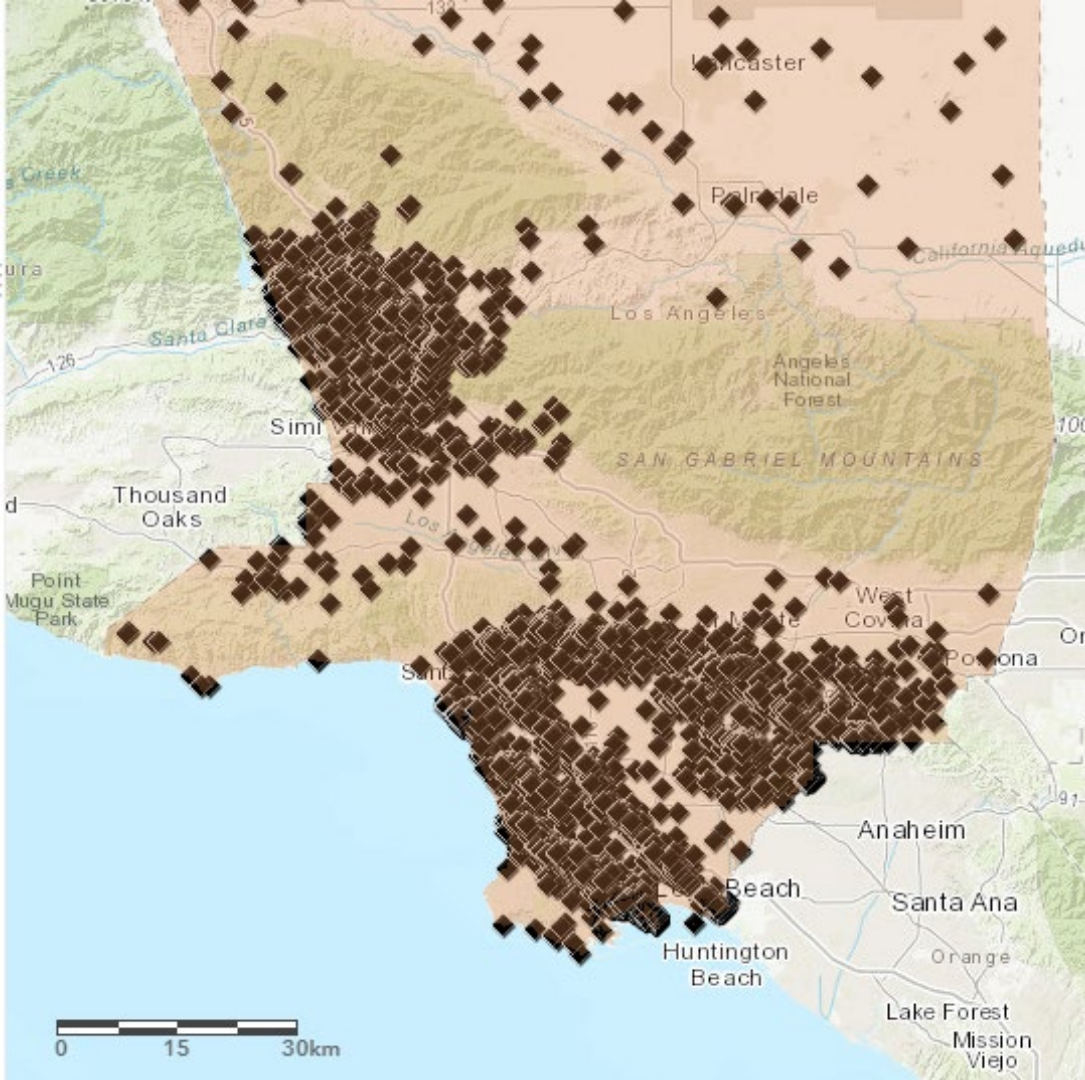
# Los Angeles: 1920s



Photo Credit: The Atlantic

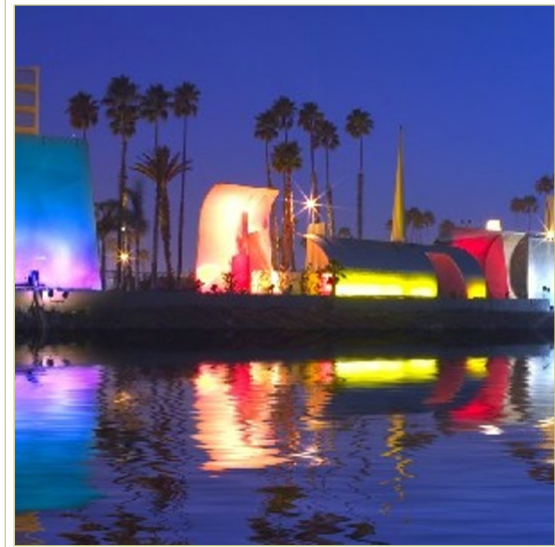
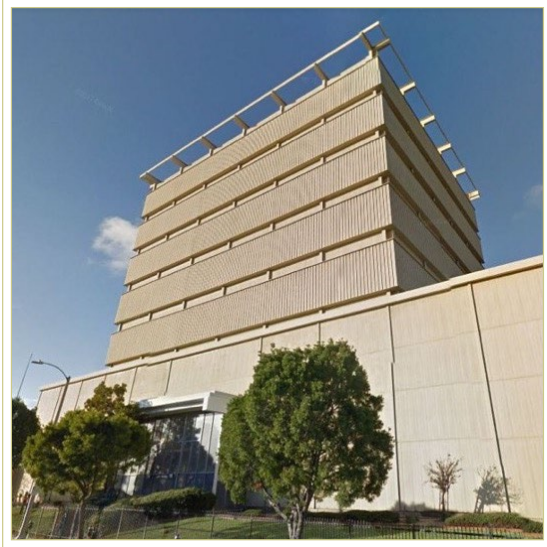


Photo Credit: Andreas Feininger



# A Patchwork of Oil Wells across LA County

- ~20,000 oil wells across 70 oil fields
- Region developed in tandem with fossil fuel extraction
- Historically underregulated



# Aesthetic Mitigation Technology or “Hidden in Plain Site”

# COMMUNITY VOICES



Photo Credit: Sandy Navarro / LA Grit Media

## CALIFORNIA

SUNDAY, SEPTEMBER 22, 2013 :: LATIMES.COM/CALIFORNIA

**Homecoming queen:** A transgender student sees a win for equality. **31**

**Obituary:** Stephen Crohn was resistant to AIDS but not to survivor's guilt. **33**

LOTTO 31 :: MILITARY DEATHS 33 :: OBITUARIES 33 :: WEATHER 36



FRANCISCO OSA / Los Angeles Times

**SABINO VALENCIA** helps son Jonathan after the boy had a nosebleed at their home in University Park. Residents there worry about the possible health effects from a nearby oil field, but state air quality officials say the odors emanating from it pose no threat.

## Fuming over an oil field

Chemical odor and a rise in health problems have South L.A. residents worried about a resurgent pumping operation in their neighborhood

By LOUIS SAHAOUN

covered wall. Behind it, on land leased from the Catholic Archdiocese, its air sampling, the odors are harmless and pose no health risk. can smell it, it's not safe," he said. "These people are experiencing

## ERASING POLICE FROM CAMPUS ROLES

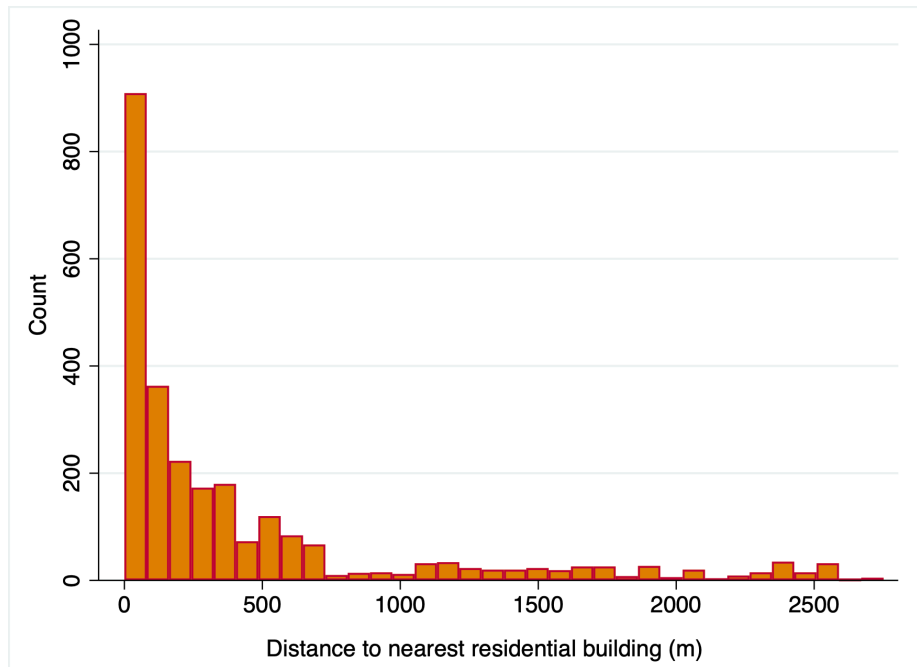
Pasadena district decides to handle most student offenses with school discipline.

By TERESA WATANABE

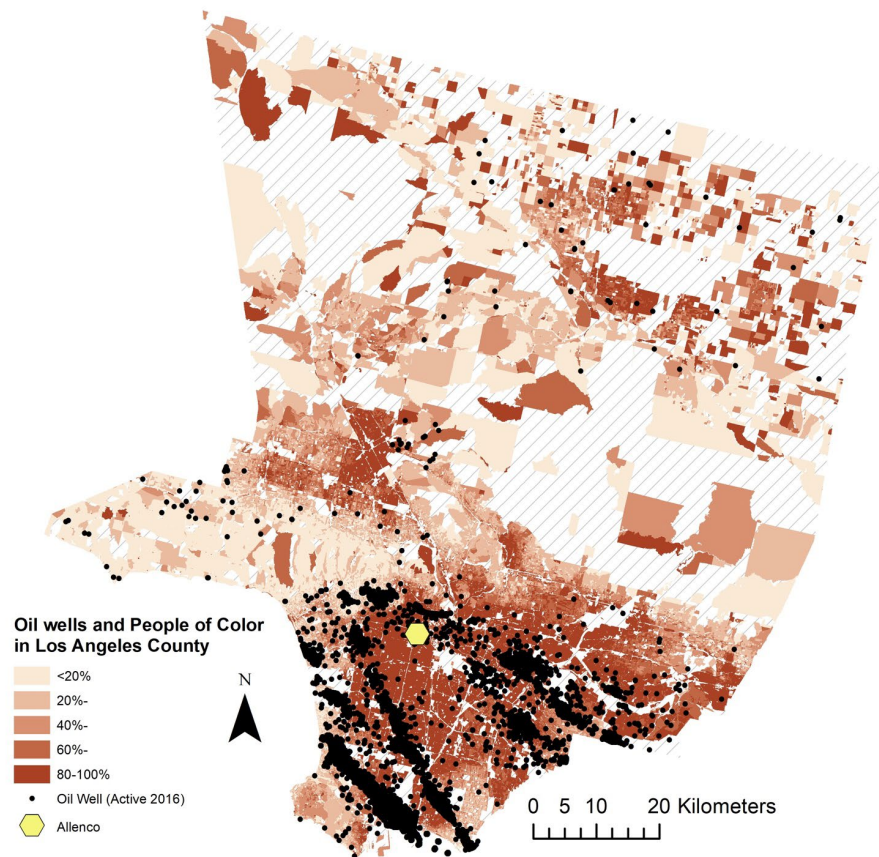
A new agreement to limit the role of Pasadena police on school campuses marks a California milestone in the national movement to minimize student encounters with the criminal justice system, advocates say.

As school districts in Los Angeles, San Francisco, Oakland and elsewhere grapple with rising concerns about police actions on campuses, Pasadena officials have agreed to handle all but the most serious offenses with school-based disciplinary actions rather than citations and arrests. Police officers will intervene only in cases involving assault, weapons, narcotics sales and other major offenses that state law requires them to handle.

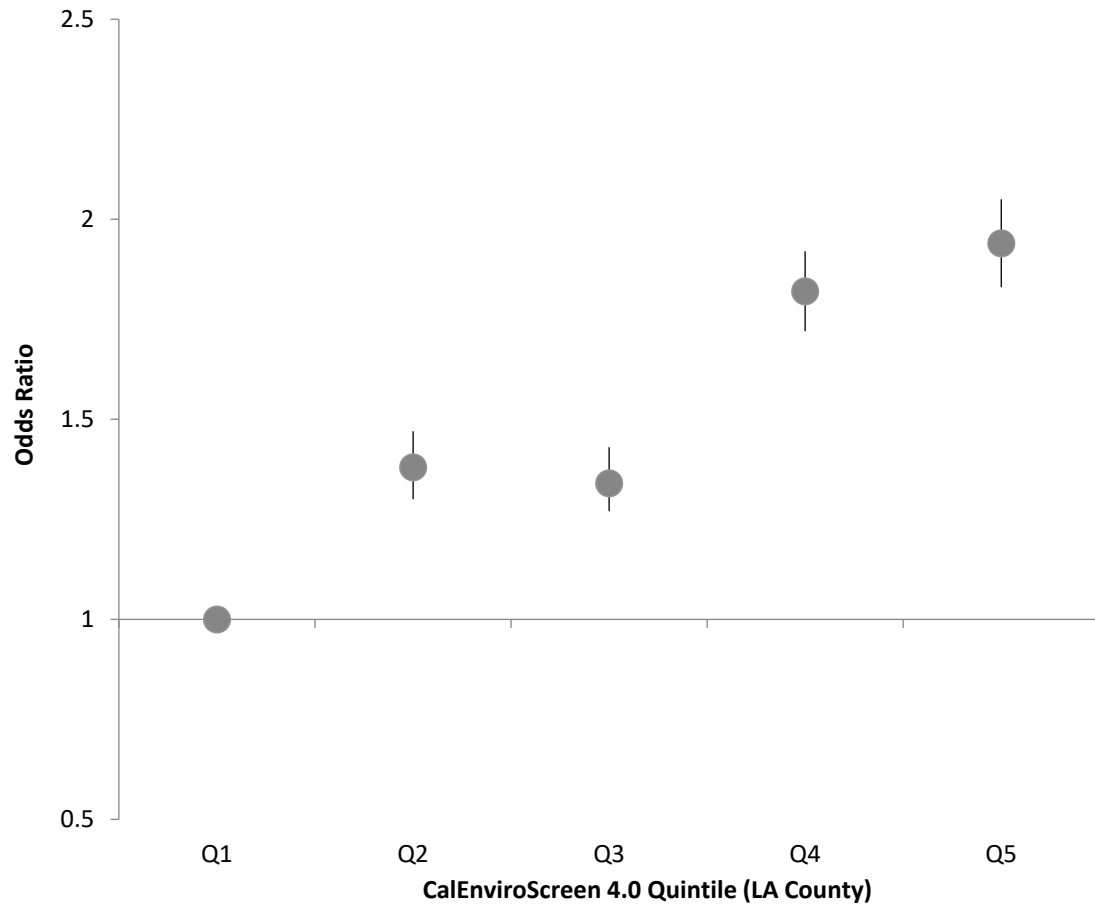
David Sepp, an attorney with the American Civil Liberties Union of Southern California, said the pact was "unlike anything we've seen"

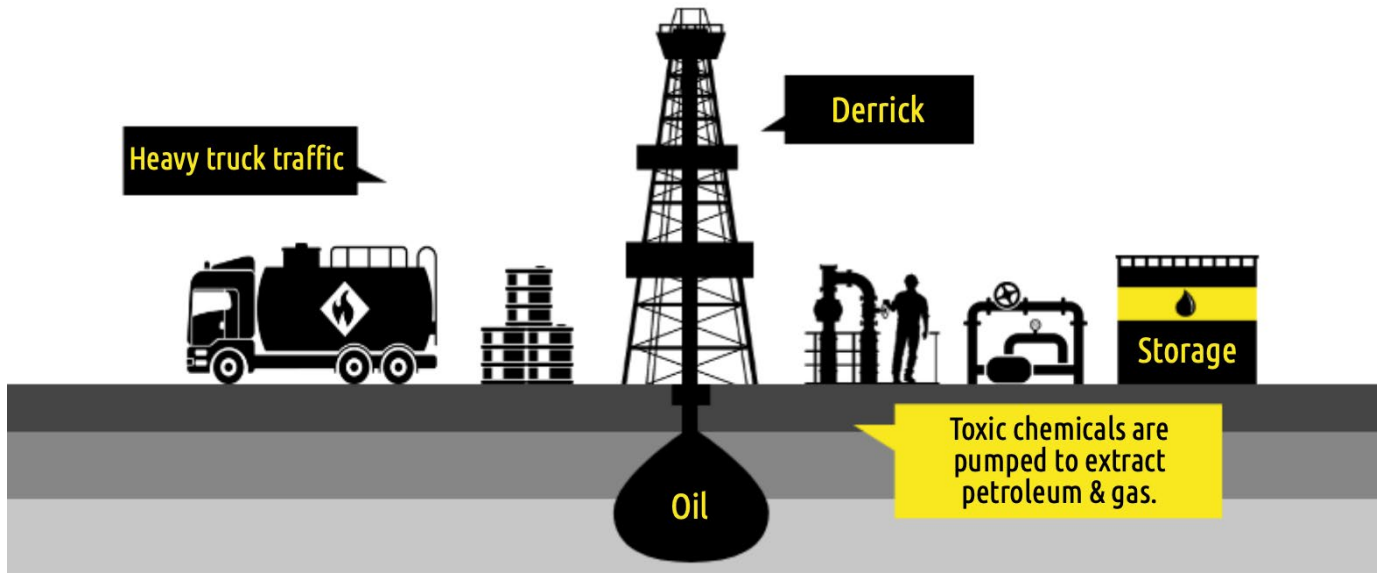


# Unmatched Density and Proximity of Urban Oil Drilling



Cumulative  
Burden and Oil  
& Gas Well  
Presence in LA  
County





## WHAT ARE THE CUMULATIVE IMPACTS?



People who are most impacted are low-income communities of color.



# Community Concerns



Runny nose, nosebleeds



Headaches, dizziness



Eye, throat, skin irritation



Adverse birth outcomes  
(low birth weight)



Respiratory ailments



Homes



Schools



Parks



Churches



Health-care facilities

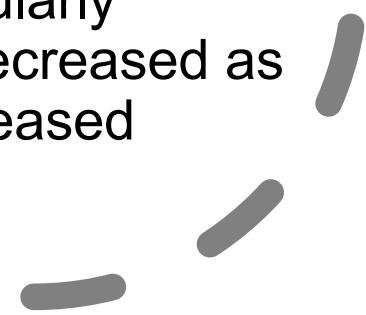
**Vulnerable  
Places**

Infographic by: Sandy Navarro, LA Grit Media





Key Health  
Findings in  
South LA  
neighborhoods

- Proximity associated with LOWER lung function (both strength & size)
    - Similar to impacts of secondhand smoke
  - Stronger effect (worse lung function) among participants living CLOSER and DOWNWIND
  - Blood pressure, and particularly diastolic blood pressure, decreased as distance from oil wells increased
- 

# Neighborhood Air Quality



- Methane emissions were heightened near urban oil and gas facilities.
- Decrease in air toxics when wells stop producing
- Non-methane hydrocarbons spikes related to oil and gas activity.

# Toxic Metals in residents <1 km from oil wells

25 Mn manganese	7 Ni nickel	33 As arsenic
48 Cd cadmium	82 Pb lead	51 Sb antimony

## FINDINGS

Toenail metal grouped into  
3 potential sources:

**Factor One:  
Pb, Cd, Sb, As**

Industrial

**Factor Two:  
Mn, Ni**

Oil Drilling

**Factor Three:  
Hg, As, Sb**

Diet

# Acknowledgements

- **Esperanza Community Housing**
  - **Redeemer Community Partnership**
  - **Community Health Promotores:** Ruth Andrade, Alejandra Castillo, Deisy Gutierrez, Sandy Navarro, Leticia Ortiz, Toby Rodriguez, Sandra Serrano, Blanca Valdez and Nicole Wong
  - **USC Team:** Temuulen Enebish, Sandrah Eckel, Amanda Jimenez, Kelly Koh, Esther Lim, Veronica Ponce de Leon
  - **Occidental College:** Bhavna Shamasunder
  - **University of Colorado Boulder Hannigan Lab**
  - Supported in part from **NIEHS ES027695**
  - Jill Johnston, [jillj@usc.edu](mailto:jillj@usc.edu)
- Social Media @JillJohnstonPhD @ USCEnviroHealth



Environmental Health Centers



University of Colorado **Boulder**

