

American Cancer Society

Session 2B: Multiple Pollutant Sources and Other Environmental Exposure

Rand Sakka, MPH
Associate Scientist II



Thursday October 19

American Cancer Society



ACS Research Team: Surveillance & Health Equity Science

- Cancer Disparity Research
- **Health Services Research**
- Screening and Risk Factors Research
- Surveillance Research
- Tobacco Control Research



Health Services Research



- Evaluate access to and affordability of cancer care
- Advocate for health policies that can improve cancer care and outcomes.
- Informed the Affordable Care Act on insurance coverage, access to care, cancer stage at diagnosis, and survival following diagnosis.

Cancer Care Continuum

Early detection Diagnosis Treatment Survivorship Palliative & End of Life Care

JAMA®

RESEARCH LETTER

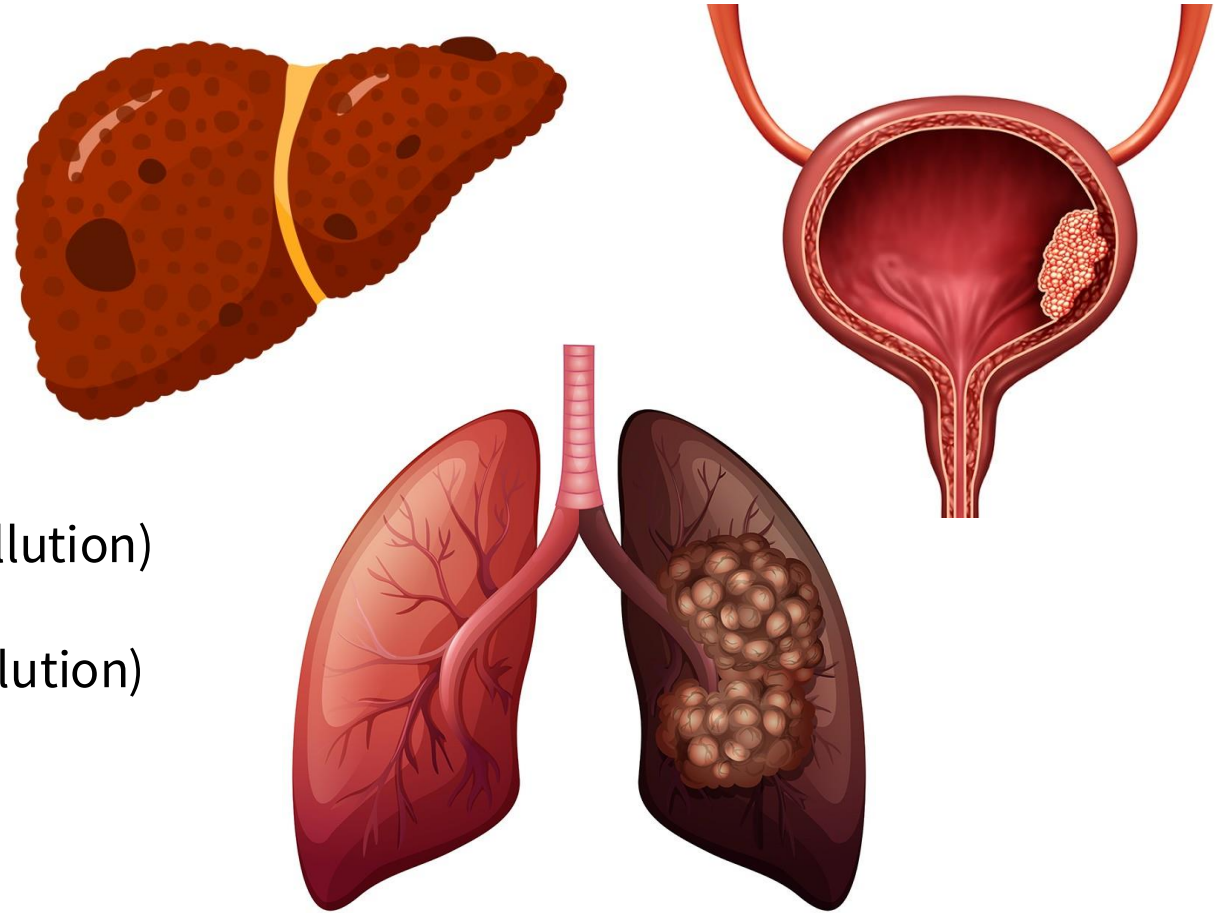
Association Between Declared Hurricane Disasters and Survival of Patients With Lung Cancer Undergoing Radiation Treatment

Leticia M. Nogueira, PhD; Liora Sahar, PhD; Jason A. Efstathiou, MD; Ahmedin Jemal, PhD; et al

Cancers linked to pollution:



1. Lung cancer – $PM_{2.5}$ (Air pollution)
2. Bladder cancer – PAHs, VOCs, Arsenic (Water pollution)
3. Liver cancer – Arsenic (Water pollution)
4. Skin cancer – UV radiation (Ozone depletion)
5. Breast cancer – Herbicides and pesticides (soil pollution)
6. Leukemia – Benzene from vehicle exhaust (Air pollution)



Association of Wildfire Exposure While Recovering From Lung Cancer Surgery With Overall Survival

Danlu Zhang, MPH; Yuzhi Xi, PhD; Daniel J. Boffa, MD; Yang Liu, PhD; Leticia M. Nogueira, PhD, MPH

IMPORTANCE With a changing climate, wildfire activity in the US has increased dramatically, presenting multifaceted and compounding health hazards. Individuals discharged from the hospital following surgical resection of non-small cell lung cancer (NSCLC) are potentially at higher risk from wildfires' health hazards.

OBJECTIVE To assess the association between wildfire exposure and postoperative long-term overall survival among patients with lung cancer in the US.

DESIGN, SETTING, AND PARTICIPANTS In this cohort study, individuals who underwent curative-intent NSCLC resection between January 1, 2004, and December 31, 2019, were selected from the National Cancer Database. Daily wildfire information was aggregated at the zip code level from the National Aeronautics and Space Administration Fire Information for Resource Management System. The data analysis was performed between July 19, 2022, and April 14, 2023.

How Satellite data can be useful for our research

Pollutant Sources:



Visualize and analyze pollution from:

1. Wildfires and other climate related disasters
2. Hazardous and polluting infrastructure



How Satellite data can be useful for our research

Pollutant Sources:

Visualize and analyze pollution from:

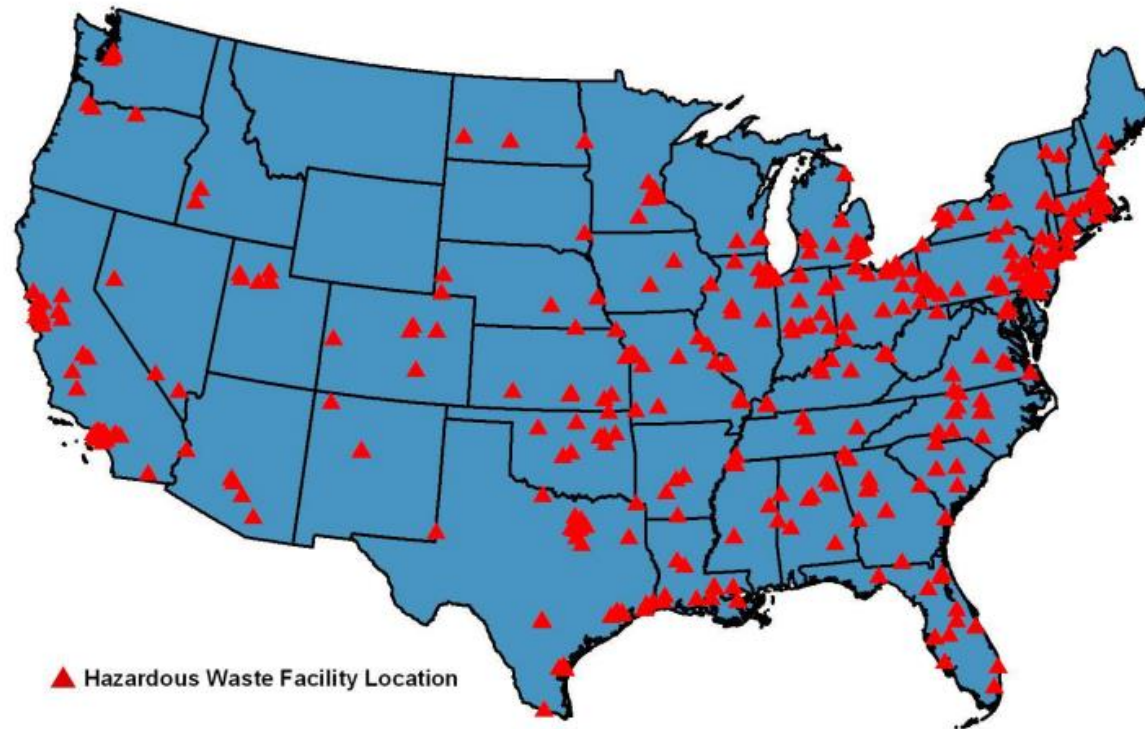
1. Landfills & waste sites
2. Concentrated agriculture
3. Concentrated animal feeding operations (CAFOs)



Toxic Wastes and Race at Twenty: 1987-2007



Grassroots Struggles to Dismantle Environmental Racism in the United States



Bullard, Robert D., Mohai, Paul, Saha, Robin, Wright, Beverly.
2007. Toxic Wastes and Race at Twenty: 1987-2007

Thank You

Rand Sakka, MPH
Associate Scientist II
rand.sakka@cancer.org

