

New Research on the Effects of Emissions-Reduction Policies on Historically Marginalized Communities

Three newly funded studies

1

STUDY 1
Seattle & NYC

2

STUDY 2
Chicago

3

STUDY 3
Los Angeles



WHAT THESE STUDIES ADD

This is the first set of studies funded under HEI's Community Health and Environmental Research Initiatives (CHERI) Program. This body of research will provide answers about whether recent air quality actions taken at the state and federal levels equitably improve emissions, air quality, and health for historically marginalized communities potentially affected by the growing system of goods and freight movement.

Who is the Health Effects Institute?

HEI is an independent nonprofit research organization that funds, oversees, and evaluates scientific research to inform decisions that foster a healthier environment and better health for all. Joint funding from government and industry and a rigorous research model ensure the impartiality and quality of HEI's work.

Overview of Studies

STUDY 1

GOAL: Identify the health and equity impacts of state and local zoning policies for minimizing traffic-related air pollution (TRAP) from commercial vehicle fleets as well as distribution centers serving residential delivery in the Seattle and New York City areas.

HOW?: Develop scenarios and analyze the health effects and equity implications of future low- and zero-emission vehicle procurement programs, truck delivery efficiency improvements, and changes in urban land use policies. The project integrates stakeholder interviews, policy scans, traffic demand modeling and simulation to estimate the health risks of chronic exposure to e-commerce related TRAP in marginalized communities.

RESEARCH TEAM LEADER:

Anne Goodchild, University of Washington

CHERI MISSION

HEI's CHERI program facilitates, supports, and funds scientific research, special projects, and research translation to reduce environmental inequities for historically marginalized communities.

STUDY 2

GOAL: Examine the air quality, health, and equity implications of adoption of Phase 1 of US EPA's Clean Trucks Plan, along with California's Advanced Clean Trucks regulation and vehicle omnibus regulation, in Chicago and whether policy-driven air pollution changes in Chicago are transferable nationwide.

HOW?: 1. Use new satellite data, along with other publicly available datasets, to improve the accuracy of nationwide heavy-duty vehicle emissions, with a focus on emissions from warehouse environments. 2. Use updated emissions estimates in a high-resolution chemical transport model to understand how warehouse-related emissions and emission reduction policies affect exposures, health, and equity.

RESEARCH TEAM LEADER:

Daniel Horton, Northwestern University

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STUDY 3

GOAL: Assess the effects of California's Advanced Clean Trucks and Advanced Clean Fleets regulations on air pollutant exposure and health disparities in Southern California.

HOW?: Estimate the impact of recently adopted zero-emission truck regulations changes on tailpipe and non-tailpipe pollutant emissions, refine an air quality model to simulate the corresponding changes in air pollutant concentrations, and assess disparities in exposures and health outcomes (mortality and asthma emergency department visits) in freight transport communities in Southern California.

RESEARCH TEAM LEADER:

Jiachen Zhang, University of Southern California

