

The Health Impact of the Exposome

Gabriela Oates, PhD, Associate Professor, Pulmonary, Allergy and Critical Care Medicine

Director, UAB Social Determinants of Health Research Core

Director, UAB Center for the Study of Community Health

Director for Population Health, UAB Lung Health Center

I lead a research program that links social and physical environments and exposures to clinical data to identify risk factors for adverse disease outcomes and develop strategies to ameliorate their effect. This research includes both epidemiologic studies as well as clinical and community-based interventions.

1. HEALThe Birmingham: Housing, Environment, And Living Conditions for Transformed Health

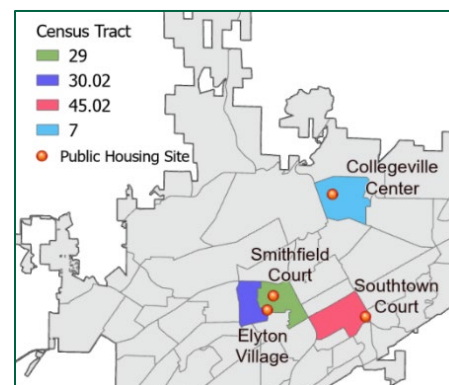
Aim 1, Natural Experiment: Assess the health effects of public housing renovation and neighborhood revitalization (the HABD Choice Neighborhood Initiative)

Aim 2, Prospective Indoor Air Quality Intervention: Assess the health effects of improved indoor air quality at sites with varying environmental contamination (Collegeville and Elyton Village)

Aim 3, Cost-effectiveness Evaluation: Compare the economic value of these different approaches and their impact on health disparities.

HEALThe ancillary pilot studies:

- *Indoor Air Quality Interventions to Reduce Cancer Risk in Rural Settings* – Jialei Shen, PhD
- *Asthma Intervention for Residential Spaces (AIRS)* – Crystal Stephens, PhD



2. Community Research Assistants (CRA) program



Train and employ community members as CRAs to recruit study participants and assist with other study tasks.

Community benefits: Workforce development, paid employment, trust in research, capacity building

Research benefits: Meeting enrollment targets, minimizing missing data, cost-effectiveness

STRIDE: Spatial Technologies for Recruitment Innovation and Decentralized Engagement

This initiative will expand the CRA program to facilitate decentralized recruitment for UAB clinical trials. It will create workforce development and paid employment opportunities for Birmingham residents while strengthening the community's capacity to engage in UAB research.

3. Superfund Research Center: Impact of Airborne Heavy Metals

The UAB Superfund Research Center addresses environmental airborne pollution with heavy metals and its impact on respiratory health in North Birmingham. The *Community Engagement Core* partners with stakeholders to reduce hazardous substance exposure in homes, schools, and community spaces impacted by these materials' toxic effects.

4. Tobacco Smoke Exposure: Prevention, Amelioration, Cessation

- **Better Respiratory Environment And Tobacco Harm Elimination (BREATHE-CF)** determines if air purifiers with dual HEPA/activated carbon filters remove second- and third-hand exposure to smoking or vaping and other pollutants and improve outcomes in children with CF living with tobacco users.
- **Clinical Effort Against Smoke Exposure in Cystic Fibrosis (CEASE-CF)** is multi-component smoking cessation intervention delivered in clinical settings as part of routine CF care.
- The **Youth Tobacco Prevention Program** delivers school-based vaping prevention curriculum and community-based tobacco prevention and cessation education and resources.
- The **Tobacco Treatment Specialist training program** is an evidence-based educational curriculum designed to equip healthcare and public health professionals with the skills and knowledge required to deliver effective interventions for tobacco and nicotine dependence