



# The Analytics for Equity Initiative

## Do equity improvements in exposure to environmental stressors translate to equity improvements in health outcomes for overburdened communities?

**Lead Researcher:** Glenn Sheriff

**Lead Institution:** Arizona State University

**Research Theme:** Environmental Stressors and Equity

**Research Questions:** How do interactions between multiple chemical and non-chemical stressors increase susceptibility to pollution exposure for individuals living in overburdened communities? What methods or tools can be utilized to identify and characterize exposure and begin to account for interactions between them? How can analysis of cumulative impacts contribute to characterizing the distribution of environmental burdens and benefits across communities and populations?

**Data:** Risk-Screening Environmental Indicators Geographic Microdata, Air Quality System, Moderate Resolution Imaging Spectroradiometer, PLACES, American Community Survey.

### Abstract:

The project uses statistical modeling to identify associations by demographic group between cumulative exposure to three environmental stressors (PM2.5, hazardous air pollutants, urban heat) and health over time. People of color (POC) suffer a disproportionate exposure to many contaminants. For some pollutants, national air quality improvements over recent decades have narrowed the exposure gap between POC and white communities. Similarly, POC bear a disproportionate exposure to non-chemical stressors such as urban heat. Global warming, however, has increased urban heat exposure, and it is unclear how this exposure gap has changed over time. Although these stressors are linked to adverse health outcomes, uncertainty remains about how they interact to increase individual susceptibility, and whether changes in exposure gaps translate into changes in health outcomes. Understanding such interactions is crucial to efficiently designing and accurately evaluating benefits of policies intended to help these communities.

