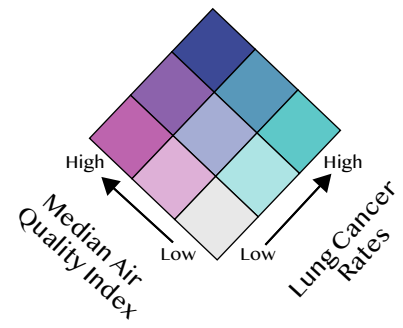


# Air Pollution and Lung Cancer Relation: How Strong is it?

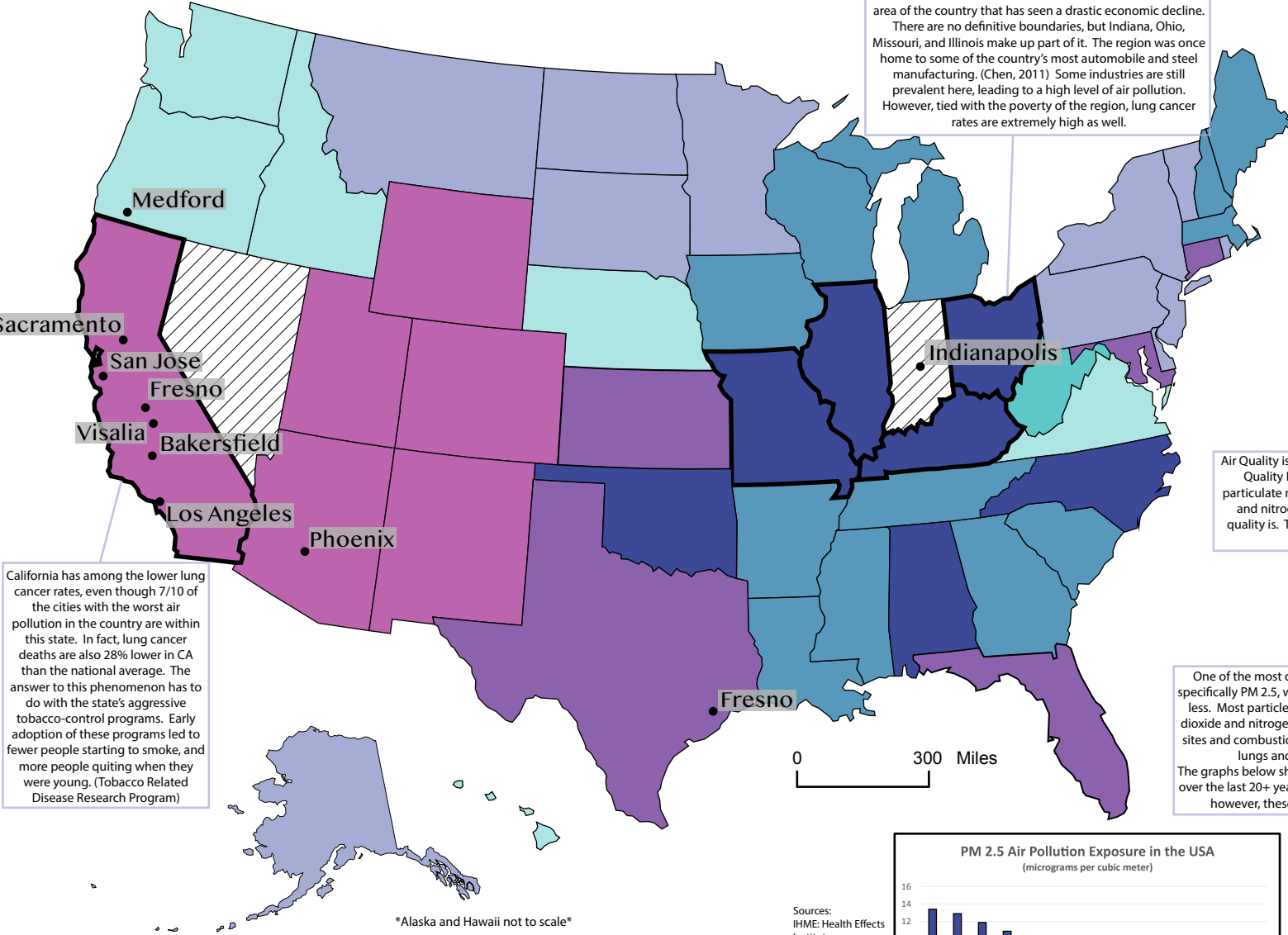
Some of the worst pollution in the country occurs in what is called the Rust Belt. The Rust Belt is a term used to refer to an area of the country that has seen a drastic economic decline. There are no definitive boundaries, but Indiana, Ohio, Missouri, and Illinois make up part of it. The region was once home to some of the country's most automobile and steel manufacturing. (Chen, 2011) Some industries are still prevalent here, leading to a high level of air pollution. However, tied with the poverty of the region, lung cancer rates are extremely high as well.



- No Lung Cancer Data
- Top Cities with Worst Air Quality

Air Quality is typically measured through AQI, which stands for Air Quality Index. AQI takes into account ground-level ozone, particulate matter (2.5 and 10), carbon monoxide, sulfur dioxides, and nitrogen dioxides. The higher the AQI, the worse the air quality is. The air quality data for this map was measured in AQI levels in counties of each state.

One of the most detrimental pollutants to human health is particulate matter (PM), specifically PM 2.5, which is fine particulate matter with a diameter of 2.5 micrometers or less. Most particles form in the atmosphere as a result of chemical reactions of sulfur dioxide and nitrogen oxides, which are pollutants emitted from power plants, industrial sites and combustion engines. These particles are so small they can get deep into your lungs and bloodstream, causing a variety of health issues. (US EPA) The graphs below show the general trends of PM 2.5 in the USA and the lung cancer rate over the last 20+ years. There are a variety of other factors that go into lung cancer rates; however, these trends show at least a correlation between these two factors.



California has among the lower lung cancer rates, even though 7/10 of the cities with the worst air pollution in the country are within this state. In fact, lung cancer deaths are also 28% lower in CA than the national average. The answer to this phenomenon has to do with the state's aggressive tobacco-control programs. Early adoption of these programs led to fewer people starting to smoke, and more people quitting when they were young. (Tobacco Related Disease Research Program)

Sources:  
IHME: Health Effects Institute  
Center for Disease Control

