Hi, I’m Dileka Gunawardana, and I’m a CPRIT summer research intern for the UT School of Public Health in Houston, working with Dr. Cici Bauer.

In my generation, pulling out a cigarette at an event is usually met with “boo’s”! This is thanks to the work of house-hold names like DARE and TRUTH and has led to a decrease in cigarette use by 67% in the last 50 years. However, a lot of people don’t know that despite this progress, lung cancer currently kills more people worldwide than any other cancer, and that certain types of lung cancer have actually increased in recent years. Some suggest this is because of better diagnostic tools, while others have speculated air pollution, farming pesticides, and even mining practices.

My goal was to create a dashboard visualizing Texas’ county-level lung cancer trends between 1995 and 2015 in addition to its potential relationships with county-level characteristics that could potentially be the source of the increasing rates for some lung cancer types.

I collected data from the Texas Cancer Registry for Texas’ 254 counties, then standardized it by age, gender, and race. I created multiple models showing the relationships across time and between counties, eventually selecting the models that had the lowest information-loss of the original data while most accurately emphasizing its inherent trends.

Overall, it appears that there are several regions in Eastern Texas with abnormally high risks to lung cancer, notably Polk and Lamar counties. I also found that the more rural a county was, the less at risk it tended to be for lung cancer. In addition, there weren’t any significant relationships with county-level poverty rates.

It’s important to determine the counties that are most at risk for lung cancer in order to set the groundwork for further analysis and even studies that can begin to establish causal relationships. In addition, public health officials need such information in order to appropriately allocate funds and diagnostic resources to these areas.

This research project was limited in that I only looked at county-level characteristics, and people with very different lifestyles can live in the same county. In the future, I hope to analyze specific cases of lung cancer or specific neighborhoods where I can gather detailed lifestyle and air quality data.