Professor Matthew Holian and I have released a new report that was funded by the Mineta Transport Institute. Using several data sets, we present a statistical analysis of an intuitive hypothesis. Consider a metropolitan area such as Los Angeles or San Diego. If the downtown is "vibrant" in terms of jobs and nightlife and culture, does this shrink the entire metropolitan area's carbon footprint? We argue that it does. Why? If the downtown is safe and prosperous, then more people will want to live closer to the city center (less sprawl). Since public transit is low carbon and it is a commuting mode whose primary purpose is to take you downtown, people will be more likely to use this option rather than drive if the downtown is desirable. So, in a vibrant core MSA — people are more likely to work downtown and to live downtown and to play (after hours and on weekends downtown).

We believe that our report has implications for California's SB375 and we hope to work on this in the future. As applied statisticians, our niche is thinking about interesting empirical hypotheses and then collecting the data to do the analysis.

One weakness with current data sets is that we don't have detailed household level data for the same household over time in which the data are geocoded. Such longitudinal data would be very useful for addressing issues of selection bias. If we observe Matt Kahn's travel behavior when he lives in downtown San Diego and later when he moves to suburban San Diego, then we can do a better job of testing hypotheses concerning how urban form affects greenhouse gas consumption than if we rely on cross-sectional data. For an innovative paper that studies this point with a focus on urban form and its impact on obesity, I suggest that you read "Fat City".