

## THE GEOGRAPHY OF VIOLENCE IN A US CITY. ALCOHOL, DRUGS AND NEIGHBORHOOD COHESION.

**Robert Lipton**, *University of Michigan, United States*

**Xiaowen Yang**, *Beth Israel Deaconess Medical Center, Israel- Harvard Medical School , United States*

**Background and Aims:** We determine, in the city of Boston in 2008, what geographic/environmental and individual factors are related to the production of violence (including subjective and objective assessments of the environment/neighborhood) as well as assessing dynamic relationships between adjacent geographic areas.

**Methods:** Data from the Boston Police Department (violence, drug arrests and 911 call data), the census, survey data on neighborhood collective efficacy and Massachusetts state data on alcohol outlet type and location. Spatial modeling, including lags to assess adjacency, is employed (census block groups) and maps of hot spots for violence, alcohol outlets and drug markets are produced.

**Results:** Census block groups with high levels of violence were associated with high levels of drug trafficking arrests, and high densities of liquor stores and bars, within a given area as well as adjacent to the "target" area, controlling for neighborhood disorganization and collective efficacy. Model based violence hot spot areas were found to be adjacent to areas with high drug arrest rates and high densities of liquor stores. There was no difference found between models including and excluding 911 call data.

**Conclusions:** Spatial effects were, above and beyond typical socio-demographic measures, found to play a role in the prevalence of violence in Boston in 2008. Further, model based hot spots were identified that were found to be associated with significantly higher values for social-demographic, alcohol outlet and drug arrest measures. This is one of the first analyses in which drug arrest and alcohol outlet data, as well as subjective and objective environmental measures, were included in assessing the prevalence of violence. Further, we include the effects (lags) of adjacent area measures/features on target area violence prevalence. Socio-demographic, environmental and drug arrest information were all found, to some degree, to be significantly related to violence, while controlling for spatial autocorrelation.