Ph.D. Dissertation Defense

Young-An Kim

Date: April 23, 2018
Time: 2:00pm – 4:00pm
Location: Social Ecology II, Room 2372
Title: Activity Nodes, Pathways, and Edges: Examining Physical Environments, Structural Characteristics and Crime Patterns in Street Segments
Committee: John Hipp (chair), Charis Kubrin, Richard McCleary, George Tita, Jae Hong Kim

Abstract

The dissertation examined how land uses, street network connectivity, and physical boundaries in urban settings dictate the activity patterns of persons; and thus influence spatial crime patterns. Although existing studies successfully theorized and revealed the effects of the physical environment on crime, less attention has been paid to distinguishing the specific characteristics of the physical environment that may be most important for understanding the location of crime. Drawing on the literature on crime pattern theory and the geometry of crime, the dissertation specifically focuses on the question of what characteristics of physical environments determine why some areas seem to have more crime. Thus, my dissertation draws a comprehensive picture by accounting for the effects of physical environments and structural characteristics on crime patterns in street segments informed by routine activities theory, crime pattern theory, environmental criminology, and social disorganization theory. In the first chapter of my dissertation, I explore how different land use characteristics conceptualized as activity nodes are related to the levels of both violent and property crime in street segments. These land use characteristics include: (1) type of business, (2) number of employees (as a proxy measure of the magnitude of people moving in-and-out), (3) local ownership status (e.g., whether a business is owned and run by a local entrepreneur or a non-local franchise company), and (4) age of business (e.g., number of years since a business facility has established and started operating). The next chapter focuses on the street network configurations, conceptualized as pathways, and examines their relationship with violent and property crime in street segments. In this chapter, I propose an application of the theoretical and methodological concepts of complex network topology to street network systems utilizing several conceptions of centrality: Reach and Betweenness. The final chapter of my dissertation – edges, incorporates measures of nearness of street segments to spatial boundaries. This chapter of my dissertation tests how spatial crime patterns in street segments are affected by different types of spatial boundaries, nearness to them, and the level of land use classification difference at the street segment level.