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TITLE:

Decision Support in POP: Understanding Displacement and Diffusion of Crime via Agent-Based Models

ABSTRACT:

This presentation will show preliminary work in the use of spatially explicit agent-based modeling as a decision support tool in the planning phase of a Problem-Oriented Policing (POP) initiative. POP is a situational crime prevention approach following the SARA model, where a law enforcement agency will (S)can their jurisdiction for a problem, (A)nalyze the issue, execute a (R)esponse to the problem, and finally, (A)ssess the effects of the response. The most common criticism with POP initiatives is they are geographically focused, with the benefit to the response area coming at the expense of surrounding areas within the jurisdiction. An agent-based model with law enforcement patrols as agents and a GIS environment comprising of law enforcement patrol areas, historical crime rates, and demographic attributes of the populace can be used to model these response plans. The modeled law enforcement agents can be deployed with varying decision behaviors on how to respond to the pre-identified crime problem and any emergent spatial displacement or diffusion of the crime given their response can be assessed and fed back into the response planning. This capability can allow for response planners to asses multiple scenarios to make more informed decisions. The approach presented will attempt to integrate the SARA model and agent-based modeling to allow for a better understanding of the emergent behavior of crime as a function of law enforcement response.