

## Saturday, April 3, 2004

7:30 am - 11:30 am

Registration

*Mezzanine*

8:00 am - 9:30 am

Concurrent Panels

**Spatial Technology Showcase Session**  
*General Audience*

*Hancock*

**Concentrating GIS Applications at the University Level**  
*General Audience*

*Berkeley*

**Moderator**

**Peter Manning**

**Northeastern University**

**Presenters**

**Cynthia Lum**

**Northeastern University**

***Challenging Place-Based Theories and Methods: The Example of the Spatial Relationship Between Street-Level Drug Activity and Crime***

Despite criminological and sociological interest in spatial patterning of crime, a number of theoretical and methodological questions remain unresolved or untested, some of which have become unwarranted assumptions used in policy applications. To explore and challenge existing theoretical and methodological assumptions of place-based research, this research uses the example of analyzing spatially the relationship between street-level drug activity and violent crimes. This investigation uses exploratory spatial data analysis (ESDA) and regression modeling to examine these two types of deviance. Additionally, a modified ESDA technique was developed to analyze the spatial dependence between multiple categories of events. Interesting findings emerged, specifically, that social disorganization is still valid in explaining patterning at both micro and macro geographic levels. Systemic/routine variables may not be strongly connected with the drug-violence relationship, and disorder may not be connected to drug and violent crime hot spots as once believed. Early methodological approaches may have misled place-based criminologists.

**Jennifer Robinson**

**Northeastern University**

***Spatial Interplay: Measuring the Effects of Conjoined Cues in Environmental Criminology***

“Spatial interplay” describes the combined effects of key elements in the urban environment that may contribute to the occurrence of crime. Although the effects of spatial influences on crime may be measured at various levels of spatial aggregation, Dr. Robinson’s research argues for an increased focus in environmental criminology at the meso level (see also Mayhew, 1991). The meso level of spatial aggregation, as portrayed in this study, is described as land zoning and land use characteristics surrounding the site subject to criminological inquiry. This study argues that methods of measurement of spatial interplay remain to be developed.

**Sean Varano**

**Northeastern University**

***Applying Innovative Analytical Techniques to Old Problems: Data Driven Approaches to Firearm Violence***

Levels of firearm violence, both real and perceived, continue to cause serious concern in many urban communities. In recent years, public safety officials are increasingly focused on innovative strategies that result in long-term reductions in gun violence. The success of such initiatives is highly contingent on a comprehensive analytical framework that provides a clear understanding of the problem. Meaningful front-end analyses not only provide a comprehensive picture of the problem, but also offer natural linkages to type and dose of interventions. Using data from a large urban center in Massachusetts, this presentation will document a preliminary framework for analyzing gun violence along with accompanying suggestions for potential interventions.

**Crime Mapping Issues**

***Stanbro***

***General Audience***

**Moderator**

**Daniel B. Bibel**

**Massachusetts State Police**

**Presenters**

**Jim B. Pingel**

**Wisconsin Sentencing Commission**

***SACSI and COMPASS: Reflections on NIJ's Data-driven Problem-solving Initiatives***

From 1999 to 2002, NIJ awarded grants to 13 cities under two separate but closely-related programs aimed at using GIS and other tools to improve local problem-solving and collaborative decisionmaking. This presentation attempts to summarize the efforts and accomplishments of these 13 sites and presents a model for collaborative, data-driven decisionmaking that can be implemented in any community. The model blends the strengths of both SACSI and COMPASS into a balanced, comprehensive data-sharing and problem-solving model.

**Kim Rossmo**

**Texas State University - San Marcos**

***Criminal Investigative Failures***

Failures in the criminal investigative process result in unsolved crimes, unsuccessful prosecutions, and wrongful convictions. What causes a major crime investigation to go wrong? The key factors can be grouped into three areas: (1) cognitive tunnels; (2) probability errors; and (3) organizational issues. The role of crime mapping and analysis in both exacerbating and mitigating such failures is discussed. Case examples are used to illustrate the issues.

**Daniel B. Bibel**

**Massachusetts State Police**

***Using NIBRS Data for Mapping***

(Daniel B. Bibel, Donald Faggiani)

The National Incident Based Reporting System (NIBRS) has the potential of providing useful data for policy makers, practitioners, and researchers. However, the national data set lacks

any data that would allow for mapping. The addition of a small number of data elements would permit the generation of crime incidents maps. The process of moving from the standard NIBRS data set to a mappable one will require some careful work. NIBRS is a complex data set, and standard tools for manipulating and using the data are lacking. There are serious issues of data quality that need to be known and addressed. This presentation will discuss some of the potentials and pitfalls of using an enhanced NIBRS data set for mapping and analysis.

## **GIS for Public Safety VII (Multi-GIS Issues)**

*Arlington*

*General Audience*

### **Moderator**

**Julie Wartell**

**San Diego District Attorney's Office**

### **Presenters**

**Michael J. Kollmeyer**

**City of Wichita**

#### ***Beyond the Case Report: GIS Tools for the City of Wichita Police Department***

During 2003, the city of Wichita implemented a web-application development tool (GeoSmart.net by MoosePoint Technology, Inc.) to be utilized by all GIS users within the city. One of the applications created by the city GIS was for the police department. Police users now have the ability to find trends and patterns for crimes and their relationships to offender locations. Utilizing the Kansas Department of Corrections parolee lists and crime incidents from the city's record management system, unique opportunities have been given to investigators and officers for solving crimes beyond the case report.

**Nanci Plouffe**

**Chula Vista Police Department**

#### ***Traffic Safety***

Traffic safety is an on-going issue for Chula Vista Police Department (CVPD). Speeding vehicles, an increase in fatal accidents, a multitude of citizen complaints and traffic congestion around a new school forced CVPD to find innovative ways to analyze the issues associated with traffic safety. In this presentation CVPD will share the different aspects of mapping needed to fully understand the traffic problems and how to focus the responses.

**Julie Wartell**

**San Diego District Attorney's Office**

#### ***A District Attorney's Office Use of GIS***

This session will highlight the use of GIS in the San Diego District Attorney's Office. The San Diego DA recognizes the value of GIS, and has recently embarked on the implementation of this tool for analysis and evaluation. GIS can be used to understand prosecutorial caseload spatially, aid prosecutors in obtaining enhancements and depicting crime scenes, as well as provide a means to coordinate data and efforts across law enforcement, other agencies, and people involved in public safety throughout the County. A variety of examples will be discussed, and experiences and input are welcomed from the audience.

**GRASP - A Geospatial Repository for Analysis and Safety Planning** *Georgian General Audience*

**Moderator**

**Jason R. Dalton** **University of Virginia**

**Presenters**

**Kyun S. Chung** **University of Virginia**  
**and**

**Connor T. Fee** **University of Virginia**  
**and**

**Jason R. Dalton** **University of Virginia**

***GRASP - A Geospatial Repository for Analysis and Safety Planning***

**(Kyun S. Chung, Jason R. Dalton, Connor T. Fee, Ryan K. Grammer)**

The University of Virginia Systems and Information Engineering Department has been commissioned by the National Institute of Justice to develop the Geospatial Repository for Analysis and Safety Planning (GRASP). GRASP is a website that allows users to share spatial data instantaneously with other members of the GIS community. Once a user uploads data in any acceptable format, that data is automatically available to all other users in any format they choose. Registered users who are approved by the NIJ can access any available public data. The aim of GRASP is to have data contributors from 40 states in the next 3 years.

**Local, Regional, and Federal Mapping Initiative VII**  
**(The Boston Foundation)**

*Clarendon*

*General Audience*

**Moderator**

**Charlotte Kahn** **The Boston Foundation**

**Presenters**

**Allan Bishop** **Metropolitan Area Planning Council**

***The Metropolitan Area Planning Council's GIS Center***

GIS offers key tools to integrate, analyze, and map relevant factors for quality of life in a community. This presentation discusses ongoing work on a number of innovative projects: a regional GIS for the emergency services (ES) departments of seven communities in the Boston area, with training of emergency services personnel in GIS and Pictometry oblique imagery technology; a Pre-Disaster Mitigation (PDM) program for 20 communities along the north and south shores of the Metropolitan Area Planning Council (MAPC) region, which includes a geo-spatial database containing over 3,100 critical infrastructure sites; build-out analyses that enable a community to examine its likely future, based on zoning and other regulations, and to determine if that future is desirable for the community; and a proactive approach to planning that takes into account factors related to economic development, housing, transportation, and the environment.

**Joseph Ferreira**

**Massachusetts Institute of Technology**

***MIT's Department of Urban Studies and Planning***

The MIT Department of Urban Studies and Planning has been at the forefront of new thinking concerning the use of technology by planners and the impacts of technology on planning. Examples include our research on GIS web services, neighborhood information systems, and collaborative planning tools, and the university's use of these technologies to study urban spatial structure, community development, social capital formation, digital divide issues, and urban design methods. The presentation shows a number of groundbreaking research projects and cutting edge work in developing virtual data warehouses and intelligent web services.

**Charlotte Kahn**

**The Boston Foundation**

***Boston Indicators Project at the Boston Foundation***

This session presents a brief history and overview of Boston's comprehensive indicators system (bostonindicators.org) with goals and measures in ten sectors, nesting indicators geography, and the capacity for "cross-cut filters" such as race/ethnicity and children and youth. The Boston Foundation is also working with partners City of Boston, Metropolitan Area Planning Council, Massachusetts Institute of Technology (MIT), and others to create an online Regional Data Repository with GIS and other functions. Ms. Kahn will present a report of progress including both goals and hurdles.

**Spatial Analysis and Research VII (Quantitative Methods)**  
***Advanced***

***Plaza Ballroom***

**Moderator**

**Katrina Baum**

**Bureau of Justice Statistics**

**Presenters**

**Avinash Singh Bhati**

**The Urban Institute**

***Robust Spatial Analysis of Rare Crimes***

When analyzing, explaining, and predicting rare crimes at local (intra-city) levels of areal aggregation, such as census tracts, blocks, or neighborhoods, dependent measures are typically small counts (low non-negative integers). In such settings, the readily available spatial-analytical toolkit, developed primarily for continuous criterion measures, may not be appropriate. Moreover, real-world outcomes seldom result from the simple, neat, and mathematically convenient models that researchers sometimes assume. This presentation explains an information-theoretic framework for modeling such rare crimes that permits a flexible functional form. The approach is applied to multivariate regression models analyzing disaggregated homicide types.

**Peter K.B. St. Jean**

**State University of New York at Buffalo**

***Investigating the Criminogenic Life-course of Place: Space-Time Analysis of Robberies Using Multi-method GIS***

(Peter K. B. St. Jean, Christopher A. Badurek)

This study presents a multi-method approach to analyzing and forecasting spatial and temporal distributions of crime across micro neighborhood units such as street blocks. Robberies reported to Chicago police to have occurred in one police beat on the South Side during 1999 and 2000 are analyzed to determine the criminogenic life-course of street blocks. Using Poisson goodness-of-fit test and Chi-Square tests, it is determined that robberies within the study area are not randomly distributed and fall into nine defined ideal types. Multi-method GIS is used to visualize robbery distributions and assist with forecasting potential future robbery hotspots.

**Katrina Baum**

**Bureau of Justice Statistics**

***Using GIS to Examine Broken-Windows***

One theory of crime that inherently lends itself to spatial analysis is “broken windows” (Wilson and Kelling, 1982). The thesis is that disorder and minor offenses will create environments that breed more serious crime if environments are left unchanged. Recent research on the broken windows thesis casts doubt on the theory and its subsequent applications in practice. Using incident data spanning a five-year period, this study used GIS methods to aggregate point level data up to the census tract level. This level of aggregation enabled controlling for demographic factors. Implications from the study on the broken windows theory will be discussed.

**9:30 am - 10:00 am**

**Break**

**10:00 am - 11:30 am**

**Workshops**

**Applications of Census Data in Crime  
*Intermediate***

***Georgian***

**Presenter**

**Keith Harries**

**University of Maryland, Baltimore County**

***Census Applications in Crime Analysis***

Crime varies with social and economic conditions. The U.S. Census of Population and Housing offers the most comprehensive free resource that permits the preparation of thematic maps and statistical reports for areas as small as Block Groups with a population of about 1000. This workshop explains how to access census data and use it to answer questions about local conditions relevant to crime.

**Automating a Multi-Jurisdictional System**  
*Advanced*

*Arlington*

**Presenter**

**Douglas Hicks**

**Minneapolis Police Department**

***Establishing and Automating a Multi-Jurisdiction Multi-Discipline Information System on your Desktop? The New Law Enforcement Information Paradigm***

The Minneapolis Police Department (MPD) has established a powerful alliance among probation, corrections, courts, State Gang Task Force, public housing, Sheriff's warrants administration, and others such as surrounding communities. Automated queries of shared databases, combined with MPD incident data have created an incredibly powerful information exchange that has changed the way the justice system works in Minnesota. Many of the automated products are designed for GIS use. GIS users get the specific information they need to quickly generate map products. The presentation offers strategies to gain access to multi-jurisdiction multi-discipline data and how to automate and manage the query process.

**Grant Proposal Writing**  
*General Audience*

*Stanbro*

**Presenter**

**Mark S. Davis**

**Kent State University**

***Writing Successful Grant Proposals***

This workshop presents the basics of preparing a funding proposal, including how to develop a problem statement, describe project activities, formulate measurable objectives, consider evaluation options, prepare a budget and budget narrative, describe organizational and individual capabilities, and solicit meaningful letters of participation. Also covered are common mistakes grant writers make and how to avoid them. Attention will be paid to specific sources of grants and related information.

**National Spatial Data Infrastructure**  
*General Audience*

*Berkeley*

**Presenter**

**Milo Robinson**

**U.S. Department of the Interior**

***National Spatial Data Infrastructure***

The Federal Geographic Data Committee, a 19-member interagency committee composed of representatives from the Executive Office of the President, Cabinet-level, and independent agencies, is developing the National Spatial Data Infrastructure (NSDI) in cooperation with organizations from state, local, and tribal governments; the academic community; and the private sector. NSDI forms policies, standards, and procedures for organizations to cooperatively produce and share geographic data. This workshop will describe the NSDI.

**Small Unit Spatial Analysis**  
*Advanced*

*Clarendon*

**Presenter**

**Dennis W. Roncek**

**University of Nebraska at Omaha**

***Using Small Area Data for Analyzing Crime Patterns: Issues and Resolutions***

As concern about the locations of crime, criminals, and victims has increased, the importance of accurately identifying these locations has become much more serious. In large part, this concern with precision has increased due to the importance of linking advanced research methods with policy efforts. This workshop will discuss several advantages and pitfalls of working with small area data. It will discuss the availability of data from the Census, strategies for overcoming the gaps in data from the Census, the problems of working with agency data for small areas, along with methodological and statistical strategies to overcome these problems.

**Thematic Mapping Principals**  
*Intermediate*

*Plaza Ballroom*

**Presenter**

**Ronald E. Wilson**

**University of Michigan/MAPS Program**

***Thematic Mapping Principals***

This workshop will address three main themes of the five major thematic mapping schemes. First, it will address the definitions of each classification scheme. Second, it will address the advantages and disadvantages of each scheme. Finally, it will address “when” and “when not” to use each scheme and which scheme is more or less appropriate, based on the underlying data distribution.

**Tough on Crime: Crime Analysis and Mapping**  
*Intermediate*

*Hancock*

**Presenter**

**Nanci Plouffe**

**Chula Vista Police Department**

***Tough on Crime – Crime Analysis and Mapping***

The Chula Vista Police Department’s (CVPD’s) Tough on Crime program takes a detailed and systematic look at crime trends and emerging trends through crime mapping. The demonstration shares methods for conducting geographic analysis of crime trends and parolee and sex registrant information. It looks at how the information is disseminated to patrol officers to help them drive their community oriented policing and problem solving efforts. Key points include: roll call presentations, interactive mapping, investigation support, and project support for problem oriented policing.

**11:45 am - 12:00 pm**

**Closing Remarks  
(Outreach and Collaboration)**

*Imperial Ballroom*

**Debra A. Stoe**

**MAPS Program**