U.S. Department of Justice
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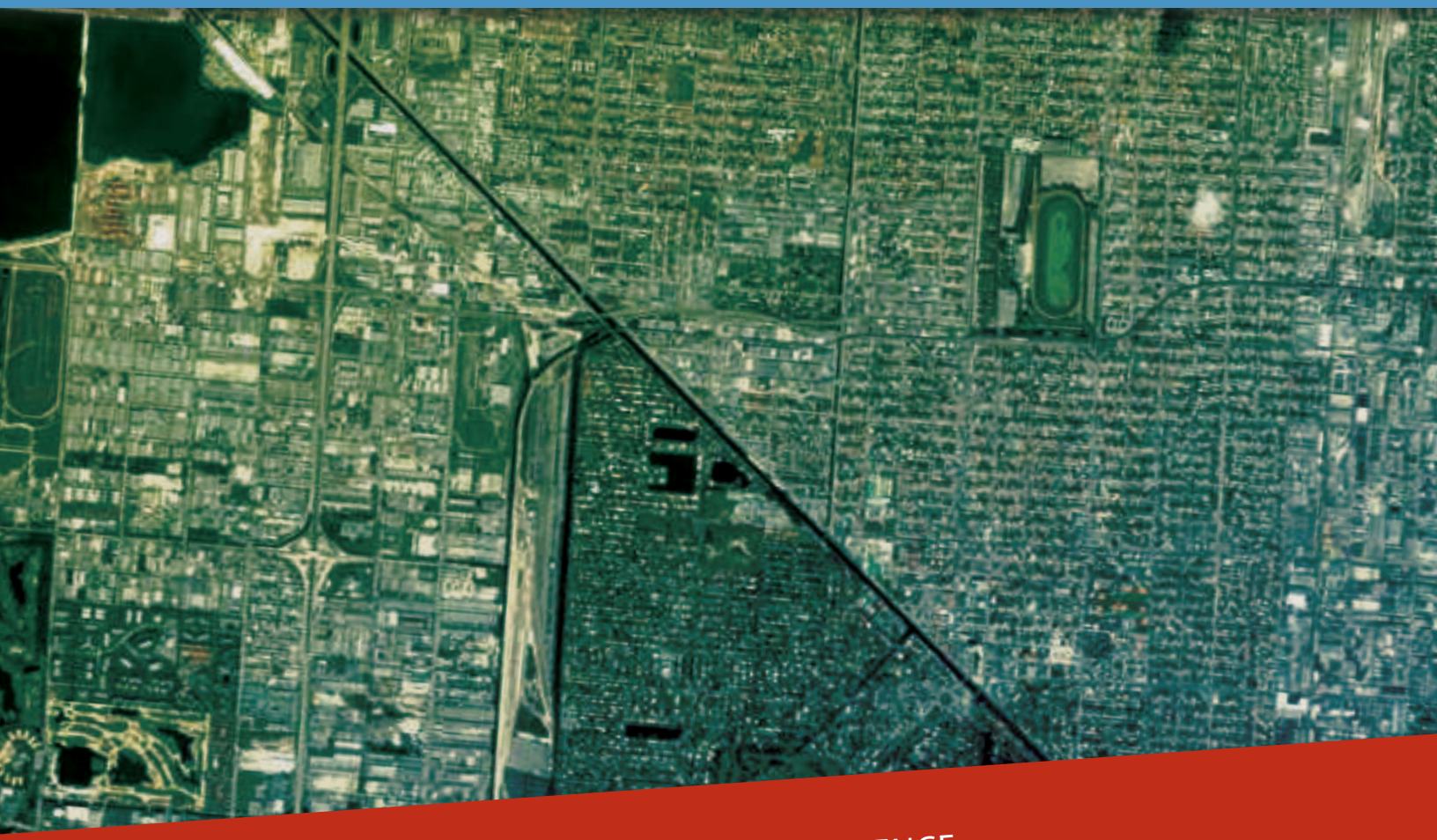
National Institute of Justice



THE 11TH CRIME MAPPING RESEARCH CONFERENCE

CRIME, SOCIAL ILLS, & PLACE-BASED SOLUTIONS

CONFERENCE PROGRAM

October 19-21, 2011 – Miami, Florida

U.S. Department of Justice
Office of Justice Programs

810 Seventh Street N.W.
Washington, DC 20531

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PROGRAM AT-A-GLANCE

WEDNESDAY, OCTOBER 19, 2011

7:30 a.m. – 5:00 p.m. — **Registration**
Overture Foyer

9:00 a.m. – 11:30 a.m. — **Opening Plenary Session**
Symphony Ballroom II-IV

11:30 a.m. – 1:00 p.m. — **Lunch On Your Own**

1:00 p.m. – 2:30 p.m. — **Concurrent Workshops**

Picasso Meeting Room	▪ Spatial Statistics in Crime Analysis
Soprano Meeting Room	▪ Tips and Tricks for Using ArcGIS 10.0 for New Crime Analysts
Concerto B Meeting Room	▪ Data-Driven Approaches to Crime and Traffic Safety
Concerto C Meeting Room	▪ Simple Crime Analysis Tools (CAT) for Strategic and Tactical Analysis
Concerto D Meeting Room	▪ Spatial Significance Hotspot Mapping Using the Nearest Neighbor Index and Gi* Statistic
Tenor Meeting Room	▪ Python Scripting for the Automation of GIS Workflows, Part I

2:30 p.m. – 3:00 p.m. — **Break**
Overture Foyer

3:00 p.m. – 4:30 p.m. — **Concurrent Workshops**

Picasso Meeting Room	▪ Crime Analysis and the Impact of Data Quality: An Overview from Research and Practice
Soprano Meeting Room	▪ Utilizing Multiple Coordinate Systems: Mapping Alibi-Busting Cell Phone Data
Concerto B Meeting Room	▪ Journey-to-Crime Modeling with CrimeStat
Concerto C Meeting Room	▪ A New Software Prototype for Geographic Profiling
Concerto D Meeting Room	▪ Integrating Crime Analysis and Crime Mapping into the Patrol Function
Tenor Meeting Room	▪ Python Scripting for the Automation of GIS Workflows, Part II

THURSDAY, OCTOBER 20, 2011

7:30 a.m. – 5:00 p.m. — **Registration**
Overture Foyer

8:30 a.m. – 11:30 a.m. — **Concurrent Workshops**

Picasso Meeting Room	▪ The Basics of Cartography
Soprano Meeting Room	▪ Risk Terrain Modeling Workshop
Concerto B Meeting Room	▪ Geocoding Crime Data
Concerto C Meeting Room	▪ Applying Key Spatial Theories to Understand Maps and Prevent Crime
Concerto D Meeting Room	▪ Crime Hotspot Mapping and Analysis
Tenor Meeting Room	▪ Crime Travel Demand Modeling with CrimeStat and DDACTS

11:30 a.m. – 1:30 p.m. — **Luncheon Keynote Address**
Symphony Ballroom II-IV — *Lunch will be provided*

1:30 p.m. – 3:00 p.m. — **Concurrent Sessions**

Picasso Meeting Room	▪ Social Ills
Soprano Meeting Room	▪ Crime & Place
Concerto B Meeting Room	▪ GIS & Policing
Concerto C Meeting Room	▪ Theory to Practice
Concerto D Meeting Room	▪ Spatial Analysis & Hotspots
Tenor Meeting Room	▪ Crime & Place

3:00 p.m. – 3:30 p.m. — **Break**
Overture Foyer

3:30 p.m. – 5:00 p.m. — **Concurrent Sessions**

Picasso Meeting Room	▪ Foreclosures
Soprano Meeting Room	▪ Crime & Place
Concerto B Meeting Room	▪ GIS & Policing
Concerto C Meeting Room	▪ Theory to Practice
Concerto D Meeting Room	▪ Spatial Analysis & Hotspots
Tenor Meeting Room	▪ Crime & Place

FRIDAY, OCTOBER 21, 2011

7:30 a.m. – 3:30 p.m. — **Registration**
Overture Foyer

8:00 a.m. – 10:00 a.m. — **Plenary Session**
Symphony Ballroom II-IV

10:00 a.m. – 10:30 a.m. — **Break**
Overture Foyer

10:30 a.m. – 12:00 p.m. — **Concurrent Sessions**

Picasso Meeting Room	▪ GIS to the Field
Soprano Meeting Room	▪ Crime & Place
Concerto B Meeting Room	▪ GIS & Policing
Concerto C Meeting Room	▪ Theory to Practice
Concerto D Meeting Room	▪ Spatial Analysis & Hotspots I
Tenor Meeting Room	▪ Spatial Analysis & Hotspots II

12:00 a.m. – 1:30 p.m. — **Lunch On Your Own**

1:30 p.m. – 3:00 p.m. — **Concurrent Sessions**

Picasso Meeting Room	▪ Geographic Profiling
Soprano Meeting Room	▪ Crime & Place
Concerto B Meeting Room	▪ GIS & Policing
Concerto C Meeting Room	▪ Theory to Practice
Concerto D Meeting Room	▪ Spatial Analysis & Hotspots
Tenor Meeting Room	▪ Traffic

3:00 p.m. – 3:30 p.m. — **Break**
Overture Foyer

3:30 p.m. – 5:00 p.m. — **Concurrent Sessions**

Picasso Meeting Room	▪ Sex Offender Residency Restrictions
Soprano Meeting Room	▪ Crime & Place
Concerto B Meeting Room	▪ GIS & Policing
Concerto C Meeting Room	▪ Theory to Practice
Concerto D Meeting Room	▪ Spatial Analysis & Hotspots
Tenor Meeting Room	▪ Other Topics

CRIME, SOCIAL ILLS, & PLACE-BASED SOLUTIONS

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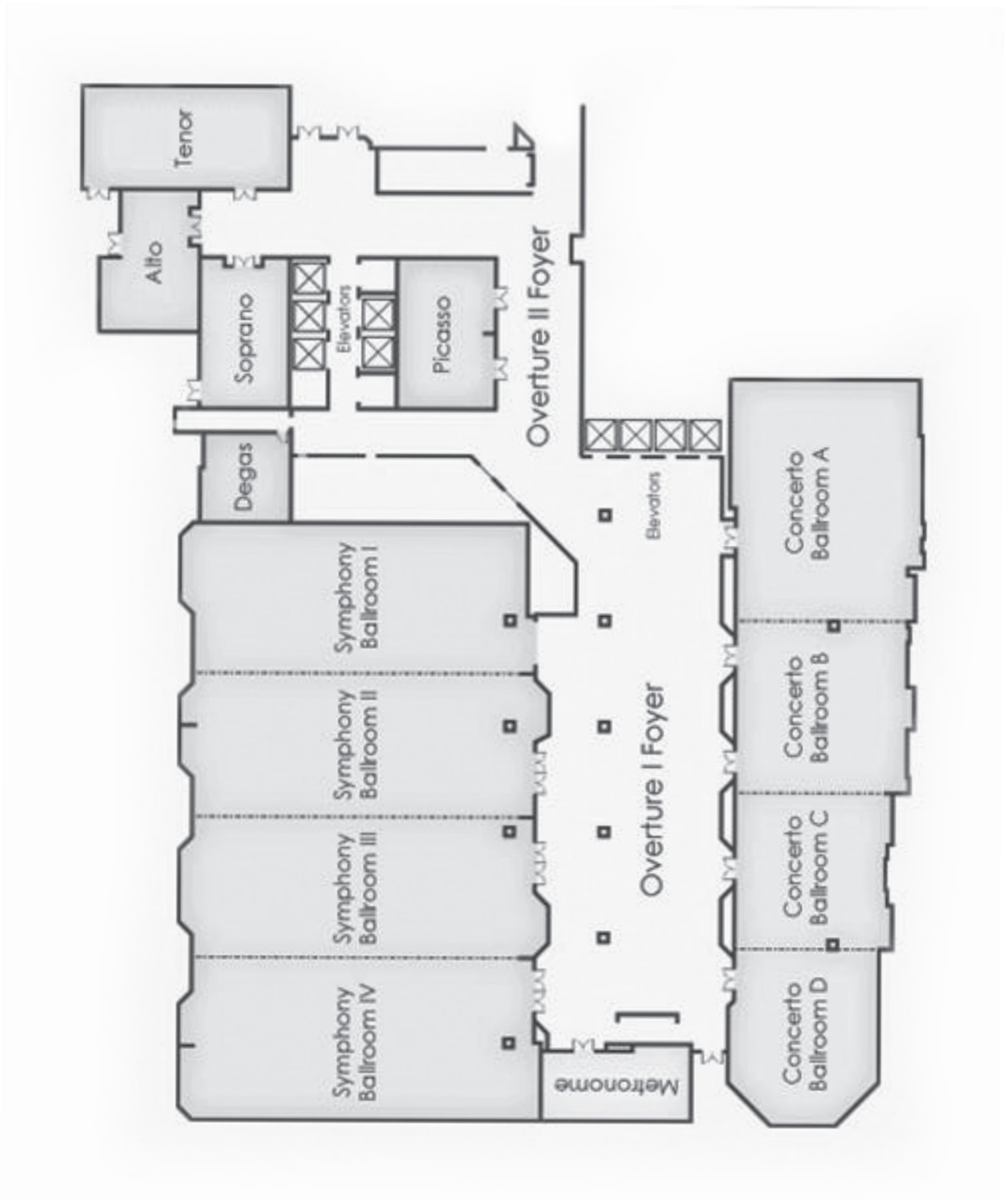
CONFERENCE FLOOR PLAN



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ABOUT THE CONFERENCE

Dear Colleagues:

The National Institute of Justice convenes its 11th Crime Mapping Research Conference at the Hilton Miami Downtown, October 17-21, 2011. This year's conference, Crime, Social Ills and Place-Based Solutions, will explore the application of geographic principles in solving crime and public safety challenges.

The use of geographic information systems (GIS) and spatial analysis is moving into a new era. Methods and technologies are maturing, spurred by increased cross-fertilization among disciplines and expansion into new areas connected to public safety. Criminal justice professionals are using GIS and spatial analysis to examine multiple problems and enhancing our understanding of the ways "place" affects a myriad of issues.

Place is a term meant to convey a geographic area with social, economic, and ecological similarities that have subtle and distinct differences. Place is a scalable concept that delineates one area from another; it allows researchers to measure interactions within and between areas. Places can be represented as buildings, street blocks, neighborhoods, sections of a city or county, metropolitan areas, or regions of the country.

Place-based initiatives are becoming a prominent approach to solving crime, alleviating social ills, and improving the delivery of services at all levels of government. Focusing on place helps us understand the connections among people in the context of their environment. When these connections result in social problems, place-based initiatives can be an effective way to solve those problems and leverage services. In addition, specific benefits delivered to a particular neighborhood often diffuse to adjacent neighborhoods, compounding their positive effects.

The Crime Mapping Research Conference is more than just visualizing where crime occurs through mapping. The conference promotes understanding about the effects of place on crime and public safety and how crime and public safety in turn are affected by place. It showcases findings, practical applications, technology demonstrations, and policy results.

Sincerely,

John H. Laub

John H. Laub, Ph.D.
Director
National Institute of Justice

GENERAL CONFERENCE INFORMATION

Registration Services – Monday through Friday in the Overture Foyer.
On-site registration will be open during the following hours:

Monday, October 17	8:00 a.m. – 4:00 p.m.
Tuesday, October 18	8:00 a.m. – 5:00 p.m.
Wednesday, October 19	7:30 a.m. – 5:00 p.m.
Thursday, October 20	7:30 a.m. – 5:00 p.m.
Friday, October 21	7:30 a.m. – 3:30 p.m.

Pre-Conference Workshops

Due to limited capacity in the pre-conference workshops, your registration must have been confirmed prior to arrival.

Registration Confirmation

Registered participants will receive a receipt/confirmation via email. Participants who register on-site will receive a paper confirmation, if requested.

Continental Breakfast

Monday through Thursday, the continental breakfast begins at 8:15 a.m. On Friday, it begins at 7:30 a.m.

Meals and Refreshments

A continental breakfast and two breaks will be provided daily. Lunch is on your own with the exception of the Thursday speaker presentation.

Mapping Competition

The Mapping Competition encourages effective and innovative use of cartographic techniques and design principles to present spatial data analysis of crime activity, trends, patterns, or phenomena.

Maps may include charts, photos, text, and other information that contribute to the overall cartographic product, and must remain within the size constraints. Only those maps registered for the Mapping Competition and presented in printed/poster form will be considered for judging.

Awards will be given for the following:

- **Best Analytic Map—**How well does the map convey results of spatial data analysis, show statistical analysis, or visualize quantitative information?
- **Best Cartographic Design—**How well does the map portray and communicate information through its cartographic presentation?
- **Most Innovative Use of Mapping—**Is the map a good, original, and innovative idea?
- **Best Overall Map**

Judging will take place on Wednesday, October 19, at 5:15 p.m.
Winners will be announced on Thursday, October 20, during the luncheon.

Session Moderators

The last presenter will moderate each panel session.

2011 CRIME MAPPING RESEARCH CONFERENCE
SCHOLARSHIP WINNERS

- **Marcus Andrew**
  Crime Analyst, Metro Transit Police, Washington, District of Columbia

- **Chris Briglia**
  Crime Analyst, Brandford Police Department, Brandford, Connecticut

- **Pat Brown**
  Systems Administrator, Thurston County Sheriff's Office, Olympia, Washington

- **Adam Gregory**
  Law Enforcement Compliance Officer, Confederated Tribes of Umatilla Indian Reservation, Department of Public Safety, Pendleton, Oregon

- **Liz Marciniak**
  Chair, Behavioral Sciences Division and Associate Professor of Criminal Justice, University of Pittsburgh at Greensburg, Greensburg, Pennsylvania

- **Ken Mayo**
  Research Analyst, Family Court-Juvenile Division, St. Louis, Missouri

- **Jenny Melius**
  Crime Analyst, Portland Police Bureau, Portland, Oregon

- **Kara Mosley**
  Data Analyst, CYFD-Juvenile Justice Services, Albuquerque, New Mexico

- **Shela Van Ness**
  Associate Professor of Sociology, University of Tennessee at Chattanooga, Chattanooga, Tennessee

- **Theresa Wong**
  GIS Liaison/Analyst, City of Tempe Police Department, Tempe, Arizona

Pre-Conference Workshops

Six, two-day pre-conference workshops will be offered prior to the main conference.

Class sizes are limited. Accepted registrants with verified eligibility must attend **both days**.

9:00 a.m. – 4:30 p.m.

Introduction to Crime Mapping Using ArcGIS 9.3

Two (2) Classes

Lorie Velarde, *Instructor* — *Concerto D Meeting Room*
Dawn Clausius, *Assistant Instructor*

Matt Harris, *Instructor* — *Concerto C Meeting Room*
Ryan Hughes, *Assistant Instructor*

This class provides students with a complete understanding of the fundamentals of crime mapping. Using the "Watch-Follow-Do" adult learning method, students will use their own data in addition to training data as they actually perform—and master—the techniques they are shown during this comprehensive class. The class will cover numerous introductory topics, including but not limited to:

- Buffering
- Choropleth Mapping
- Graduated Symbol Mapping
- Pinmapping
- Symbology
- Spatial and Tabular Queries
- Map Production

Note: Students do not need a background in crime mapping.

Intermediate Crime Mapping Using ArcGIS 9.3 — *Tenor Meeting Room*

Phil Mielke, *Instructor*
Kwabena Prakah-Asante, *Assistant Instructor*

This class provides students with an understanding of several intermediate crime mapping techniques. Using the "Watch-Follow-Do" adult learning method, students will use their own data in addition to training data as they actually perform—and master—the techniques they are shown during this comprehensive class. The class will cover numerous intermediate topics, including but not limited to: 1) Using Modelbuilder, 2) Working with GPS data, 3) Using external data and mapservice sources, 4) Understanding Hotspots (Definitions, Theory and Application), 5) Choroplethy (Aggregation, Comparative Statistics), 6) Tactical Analysis Applications, 7) Surface Interpolation, 8) 3D Positioning, 9) Spatiotemporal Analysis, and 10) Forecasting. Note: Students should have mastered the basic elements of crime mapping and be able to make simple maps (add layers, identify points, change colors and sizes of points and lines, understand basic spatial and tabular queries and create layout readings for printing prior to enrolling for this class.

9:00 a.m. – 4:30 p.m.

CrimeStat III Using ArcGIS 9.3

Picasso Meeting Room

Christopher Bruce, *Instructor*
Jerry East, *Assistant Instructor*

CrimeStat III is a Windows-based spatial statistics software package used for analyzing crime data from law enforcement and criminal justice agencies. Output produced from the software can be used with a geographic information system (GIS) to support and enhance the tactical and strategic analysis efforts of police departments. Participants in this intensive workshop will learn how to prepare data for CrimeStat, produce results, and import them into ArcGIS 9.3 for further analysis or presentation. The class will cover: 1) Getting data into CrimeStat III, 2) Basic descriptive statistics from Spatial Distribution, 3) Measures of clustering in Distance Analysis, and 4) Several 'Hot Spot' techniques, using both single and dual kernel density interpolation. Note: Students should be at least intermediate users of ArcGIS 9.3 and should have at least some experience with the analysis of crime patterns, series, and problems in municipal or county police agencies.

Risk Terrain Modeling

Soprano Meeting Room

Joel Caplan, *Instructor*
Jonas Baughman, *Assistant Instructor*

Risk Terrain Modeling (RTM) is an approach to risk assessment that standardizes all risk factors to common geographic units, then combines separate map layers together to produce risk terrain maps showing the compounded presence, absence, or intensity of all risk factors at every location throughout the landscape. It paints a picture of place-based context for criminogenesis. This permits the forecasting of future crime locations not because crimes occurred there yesterday, but because the environmental conditions are ripe for crimes to occur there tomorrow. RTM produces meaningful and actionable information that can be used for forecasting, resource allocation, needs assessment, tactical operations, strategic planning, place-based evaluation, and spatial risk assessment. After completing this workshop, you will be able to produce risk terrain models and maps that give actionable meaning to the relationships that exist between place-based indicators and crime (or other hazardous event) outcomes, use RTM to perform spatial risk assessments, develop strategic models to forecast where problems are likely to emerge at the micro-level, and allocate resources and engage in steps that might reduce risks and prevent problematic events from occurring. Note: This workshop is designed around ArcGIS 9.3. ArcGIS 10 users can still participate and perform risk terrain modeling, but there are some differences between the user interface and tools in ArcGIS 10 compared to earlier versions.

Advanced Crime Mapping

Alto Meeting Room

Derek Paulsen, *Instructor*
Jim Mallard, *Assistant Instructor*

This class will provide students with an understanding of many advanced crime mapping techniques. Students will be provided data as they perform and master the techniques shown during this 2-day class. Depending on the pace of the class as a group, some/part/all of the following topics will be covered: Mapping for problem solving, advanced kernel density mapping, crime rates and crime rate analysis using census data, report analysis techniques for CompStat using maps, spatial temporal analysis, density analysis and animation, assessing crime changes over time, and assessing the impact of interventions. Note: This class is intended for those with an extensive background and training in crime mapping who regularly complete sophisticated spatial analysis. Participants should have taken the intermediate course or have four years experience using ArcGIS.

7:30 a.m. – 5:00 p.m.

Registration *Overture Foyer*

9:00 a.m. – 11:30 a.m.

Opening Plenary Session *Symphony Ballroom*
Introduction: John H. Laub, *Director, National Institute of Justice*

Keynote Address

Crime and Well-Being in the American City: Implications of the Neighborhood Effect

Robert J. Sampson, *Henry Ford II Professor of the Social Sciences, Harvard University*

Neighborhood inequality remains durable in American society, raising important questions about crime control and the collective capacity of communities to meet pressing challenges to their well-being. This presentation will highlight findings from a long-term study of Chicago neighborhoods. Sampson will highlight implications of the "neighborhood effect" for thinking about crime, disorder, collective efficacy, stability and change in the concentration of disadvantage, hotspots, organizational alliances, and place-based intervention.

11:30 a.m. – 1:00 p.m.

Lunch On Your Own

1:00 p.m. – 2:30 p.m.

Concurrent Workshops

Spatial Statistics in Crime Analysis *Picasso Meeting Room*

Christopher Bruce, *President, International Association of Crime Analysts*

This class provides an overview of the various means in which crime analysts can study clusters, hotspots, and movements in crime, with a particular focus on forecasting next events in crime series. Students will learn the difference between clustered and walking patterns and how this difference affects forecasting; different techniques for identifying and analyzing hotspots; and a multi-stage process for forecasting that includes both spatial tendency and target variables. Scientific and technological methods are balanced with qualitative considerations and basic common sense. CrimeStat 3.3 and its specific uses in crime analysis are highlighted.

1:00 p.m. – 2:30 p.m.

Tips and Tricks for Using ArcGIS 10.0 for New Crime Analysts

Soprano Meeting Room

Phil Mielke, *GIS Supervisor, City of Redlands*

A majority of crime analysts are thrust into crime mapping with little or no technical background and training in regards to mapping. These individuals find themselves caught between the world of what their chiefs, sheriffs, and supervisors expect of them and their limited knowledge of the ArcGIS mapping software. The goal of this workshop is to provide crime analysts with usable tips and tricks to improve the overall quality of their maps using ArcGIS 10.0.

Data-Driven Approaches to Crime and Traffic Safety

Concerto B Meeting Room

Earl Hardy, *Highway Safety Specialist, National Highway Traffic Safety Administration*
Tracey Barker, *Lieutenant, Cary, North Carolina, Police Department*
Howard Hall, *Captain, Baltimore County, Maryland, Police Department*
Emily Varga, *Analyst, Baltimore County, Maryland, Police Department*
Deborah Piehl, *DDACTS Project Manager, International Association of Directors of Law Enforcement Standards and Training (IADLEST)*

Data-Driven Approaches to Crime and Traffic Safety (DDACTS) is a law enforcement operational model that used integration of location-based crime and traffic crash data to establish effective and efficient methods for deploying law enforcement resources. Presenters will discuss how DDACTS ensures accountability and provides a dynamic, evidenced-based problem-solving approach to crime and crashes. The approach, grounded in community-oriented law enforcement, suggests that place-based policing, as opposed to person-based (traditional) policing, is more efficient as a focus of law enforcement actions. It provides a more stable target for law enforcement activities, has a stronger evidence base, and raised fewer ethical and legal problems.

Simple Crime Analysis Tools (CAT) for Strategic and Tactical Analysis

Concerto C Meeting Room

Andrew Brumwell, *Geo-spatial Intelligence Analyst, West Midlands Police, UK*

The geo-spatial intelligence (GSI) team at West Midlands Police (UK) has developed a number of simple, easy to use crime analysis tools for tactical and strategic analysis. These tools cover temporal analysis, repeat location analysis, point in polygon analysis, and other tools including neighborhood geo-demographic profiling. These tools have been designed to take the pain out of repetitive tasks and reduce the time spent on basic scanning, the first part of the SARA process. This leaves analysts with more time to get on with the proper task of discovering why crime is occurring at certain locations, streets, and neighborhoods.

Spatial Significance Hotspot Mapping Using the Nearest Neighbor Index and Gi* Statistic

Concerto D Meeting Room

Spencer Chainey, *Director of Geographical Information Science, University College London, Jill Dando Institute of Security and Crime Science*

Significance testing is a process that is fairly common in statistical analysis, yet in practice its application on crime data that is geographically referenced is very much underdeveloped. In this workshop, we will explore how we can introduce statistical robustness to hotspot analysis by employing techniques that test for spatial significance. That is, in statistical terms, the spatial concentration of crime shows evidence of being unusual. We illustrate how the Nearest Neighbor Index can be used as a preliminary tool to test for evidence of hotspots, and how the Gi* statistic can be used to map patterns of statistical significance.

1:00 p.m. – 2:30 p.m.

Python Scripting for the Automation of GIS Workflows, Part I *Tenor Meeting Room*

Paul Zandbergen, *Associate Professor, University of New Mexico*

Python scripting can be employed to process large GIS datasets more efficiently and to automate repetitive tasks. Python is a free and open-source programming language that is relatively easy to learn and gives access to a large library of data processing and analysis tools. The workshop will cover the basics on how to get started with writing geoprocessing scripts in Python and how to develop these into GIS tools. Examples will be presented using typical datasets used in crime mapping and analysis. Participants will be given a CD with resources and exercises. No prior programming experience is necessary.

2:30 p.m. – 3:00 p.m.

Break *Overture Foyer*

3:00 p.m. – 4:30 p.m.

Concurrent Workshops

Crime Analysis and the Impact of Data Quality: An Overview from Research and Practice *Picasso Meeting Room*

Valerie Sessions, *Assistant Professor, Charleston Southern University*
Ewa Musial, *Information Technology Specialist II, New York State Intelligence Center*

Data quality affects every aspect of crime analysis – from the moment data is entered into a records management system until used to solve a case or as evidence in court. We will be presenting on data quality research funded by NIJ and the resulting data quality tool freely available to law enforcement practitioners. Data quality from a practitioner's view shall also be presented: including commonly encountered errors and causes of data quality issues. The methods of identifying critical data sets as well as a process of data quality assessment will be discussed. The audience will also be introduced to the practical use of Quick Assess and Talend Open Profiler in improving data quality. Finally, strategies for cleansing data and optimizing the assignment of cleansing related tasks will be illustrated.

Utilizing Multiple Coordinate Systems: Mapping Alibi-Busting Cell Phone Data *Soprano Meeting Room*

Jennifer Godown, *Crime Analyst, Fairfax County Police Department*

Mapping cell phone activations is a fast-growing, alibi-busting tool for detectives. Typically, cell tower location data is provided in latitude and longitude which is based on a geographic coordinate system. Most spatial data (roadways, boundaries, etc.) provided by local GIS departments are projected on a state plane coordinate system. This workshop will take you step-by-step through mapping data in both geographic and projected coordinate systems on the same map through transformation. From cleaning your source data to using spatial analysis tools to illustrate chronology and frequency, this workshop will get you one step closer to busting your bad guy's alibi.

3:00 p.m. – 4:30 p.m.

Journey-to-Crime Modeling with CrimeStat

Concerto B Meeting Room

Ned Levine, *Director, Ned Levine & Associates*
Richard Block, *Professor Emeritus, Loyola University Chicago*

This workshop examines Journey-to-Crime modeling using CrimeStat. Distance-based and Bayesian approaches are presented. The distance approach uses a model of travel distance to estimate the likely residence location of a serial offender. The Bayesian approach adds information on where other offenders lived who committed crimes in the same area. It is a conditional probability based on the distribution of the crimes committed by the offender. Criteria for accuracy and precision are discussed. The Bayesian is shown to be more accurate and more precise than the distance-based approach. Additional improvements to the methodology are discussed.

A New Software Prototype for Geographic Profiling

Concerto C Meeting Room

Mike O'Leary, *Professor, Towson University*

This workshop will focus on a new prototype tool for the geographic profiling problem that incorporates information on where offenders commit crimes, the distance decay patterns of offenders, and the distribution of population and offenders, all localized to the jurisdiction(s) where the serial crimes have occurred. Participants will learn about the underlying assumptions made by the prototype and its strengths and weaknesses; participants will also see how the prototype can be used on a crime series. The tool is free and will be provided to workshop participants.

Integrating Crime Analysis and Crime Mapping into the Patrol Function

Concerto D Meeting Room

Rachel Boba Santos, *Associate Professor, Florida Atlantic University*

This workshop is geared for analysts, police managers, and commanders seeking guidance in integrating crime analysis and mapping into their agency. The workshop provides a series of recommendations for integration and provides crime analysis and mapping examples based on research conducted by the Police Executive Research Forum and funded by the Office of Community Oriented Policing Services (COPS) that included a national survey of police agencies, focus groups with police practitioners conducting innovative crime analysis and mapping, and case studies of innovative agencies. Lastly, the workshop will include an interactive portion where participants will discuss and apply presented material to their own agencies.

Python Scripting for the Automation of GIS Workflows, Part II

Tenor Meeting Room

Paul Zandbergen, *Associate Professor, University of New Mexico*

Python scripting can be employed to process large GIS datasets more efficiently and to automate repetitive tasks. Python is a free and open-source programming language that is relatively easy to learn and gives access to a large library of data processing and analysis tools. The workshop will cover the basics on how to get started with writing geoprocessing scripts in Python and how to develop these into GIS tools. Examples will be presented using typical datasets used in crime mapping and analysis. Participants will be given a CD with resources and exercises. No prior programming experience is necessary.

7:30 a.m. – 5:00 p.m.

Registration *Overture Foyer*

8:30 a.m. – 11:30 a.m.

Concurrent Workshops

The Basics of Cartography

Picasso Meeting Room

James LeBeau, *Professor, Southern Illinois University, Carbondale*

The growth of automated mapping in criminal justice has been phenomenal. During the rush to get going with mapping, new users have focused on the technology of making maps while ignoring the science and art of making a map. This serious oversight limits the efficiency, effectiveness, and in some instances, the credibility of crime mapping. This workshop is a discussion and illustration of the important basics of cartography. Topics include the following: the elements of a map, generalization and scale, coordinate systems, visualizing different data scales, symbols and visual variables, color design and different types of thematic maps.

Risk Terrain Modeling Workshop: The Steps of Spatial Risk Assessment

Soprano Meeting Room

Joel Caplan, *Assistant Professor, Rutgers University*

This three-hour workshop is an introduction to the concepts and technical steps of Risk Terrain Modeling (RTM). At its completion, you will be able to produce risk terrain models and maps that give actionable meaning to the relationships that exist between place-based indicators and crime outcomes. You will be able to use RTM to perform spatial risk assessments and develop strategic models to forecast where crime problems are likely to emerge and allocate resources. You will also be able to engage in steps that will suppress existing crime hotspots and reduce risks of new crimes occurring in the future.

Geocoding Crime Data

Concerto B Meeting Room

Timothy Hart, *Assistant Professor, University of Nevada, Las Vegas*

This workshop will present an overview of the geocoding process in the ArcGIS environment. Attendees will learn how to prepare crime event data in order to optimize geocoding results. Student will also learn about the different types of reference data that can be used in the geocoding process and strategies for dealing with geocoding errors. They will recieve guidance on constructing single house as well as composite address locators in order to improve strategies for improving completeness, positional accuracy, and repeatability in their geocoded crime data. Some experience with GIS is recommended but not required.

8:30 a.m. – 11:30 a.m.

Applying Key Spatial Theories to Understand Maps and Prevent Crime

Concerto C Meeting Room

Eric McCord, *Assistant Professor, University of Louisville*
Jerry Ratcliffe, *Professor, Temple University*

This workshop introduces participants to spatio-temporal theories of crime and criminal activity and how the understanding of key principles help mappers better interpret their maps and anticipate offender behavior. Next, it applies theory to reality by presenting research results concerning the impact of specific criminogenic land uses (alcohol outlets, convenience stores, schools, and more) that cause crime to cluster in neighborhoods. Finally, participants will be introduced to two simple GIS techniques that can be used to identify and measure criminogenic land uses in their community leading to the formulation of crime reduction plans.

Crime Hotspot Mapping and Analysis

Concerto D Meeting Room

Paul Zandbergen, *Associate Professor, University of New Mexico*

A range of different hotspot techniques will be covered, including thematic mapping, grid-based mapping, Local Indicators of Spatial Association (LISA), Getis-Ord local G, and kernel density. Strengths and weaknesses of each method will be discussed, as well as strategies on selecting the most appropriate method for a particular situation. Recent advances in crime hotspots will also be discussed, including the reliability of hotspots to predict future crime events, spatio-temporal data mining and analysis techniques, and 3D and 4D visualization techniques for (temporal) crime hotspots.

Crime Travel Demand Modeling with CrimeStat and Data-Driven Approaches to Crime and Traffic Safety (DDACTS): Lafourche Parish Sheriff's Office

Tenor Meeting Room

- **Crime Travel Demand Modeling with CrimeStat**

Ned Levine, *Director, Ned Levine & Associates*

This workshop is an overview of crime travel demand modeling, an application of transportation modeling to analyzing crime in a metropolitan area. Attendees will learn about the steps involved and how it can be used for policy and intervention analysis. The modeling steps involve a data inventory, trip generation, trip distribution, mode split, and network assignment. Examples will be shown of using a crime travel demand model to study bank robberies in a metropolitan area as well as to explore policy interventions for reducing DWI crashes.

8:30 a.m. – 11:30 a.m.

- **DDACTS: Lafourche Parish Sheriff's Office**

  Earl Hardy, *Highway Safety Specialist, National Highway Traffic Safety Administration*
  Keith Stephens, *Lieutenant, Metro-Nashville Police Department*
  Blaine Ray, *Analyst, Metro-Nashville Police Department*
  Deborah Piehl, *DDACTS Project Manager, International Association of Directors of Law Enforcement Standards and Training (IADLEST)*

  This workshop examines the Lafourche Parish Sheriff's Office's implementation of the Data-Driven Approaches to Crime and Traffic Safety (DDACTS), a law enforcement operational model that uses the integration of location-based crime and traffic crash data to establish effective and efficient methods for deploying law enforcement resources. Presenters will discuss how the Lafourche Parish Sheriff's Office uses DDACTS to ensure accountability and provide a dynamic, evidenced-based problem-solving approach to crime and crashes.

11:30 a.m. – 1:30 p.m.

Luncheon Keynote Address *Symphony Ballroom II-IV*

Introduction: John H. Laub, *Director, National Institute of Justice*

Information and Community Change: The National Neighborhoods Indicator Partnership

Thomas Kingsley, *Senior Fellow, The Urban Institute*

The potential for strategic analysis of neighborhood change is being transformed. The broader revolution in information technology has made it possible to assemble and manipulate enormous amounts of neighborhood level data at dramatically reduced costs. But it doesn't happen automatically. The most valuable information is generated locally and new local institutions are needed to assure that the data will be brought together systematically and used productively. This is the role now being played by data intermediaries in 35 cities that are a part of the National Neighborhood Indicators Partnership (NNIP), a network coordinated by the Urban Institute. This presentation explains how NNIP partners work at the local level. What kinds of institutions get involved and why? What is the range of data they maintain in their systems, and how do they convince local government agencies to share it with them? How do they function as a one-stop-shop for data? How do they go about getting the data applied effectively for policy making, program planning, and community building? To illustrate the work, the presentation covers applications in one area in some depth: helping local stakeholders design data driven responses to the foreclosure crisis (foreclosure prevention and neighborhood stabilization). This will clearly be a topic of importance in understanding crime trends in urban neighborhoods over the next few years. The presentation also includes a section on the kinds of work NNIP does nationally as a partnership.

1:30 p.m. – 3:00 p.m.

Concurrent Sessions

Social Ills

Picasso Meeting Room

- **Mortgage Lending and Neighborhood Crime: Evidence from the National Neighborhood Crime Study**

  Ruth Peterson, *Emeritus Professor, Ohio State University*

  In this paper, data from the National Neighborhood Crime Study are used to explore the neighborhoods' influence of residential loan amounts on crime across distinct race-ethnic communities and depending on neighborhoods, levels of socioeconomic disadvantage. Multilevel analyses of violent crime for more than 8,000 neighborhoods across 87 U.S. cities indicate that all types of neighborhoods benefit from a larger influx of residential loans, but the payoffs for African American and Latino areas are greater than for white communities. In addition, the more disadvantaged the community, the larger the negative association between lending and crime.

- **Mortgage Fraud and Its Impact on the U.S. Economy**

  Ann Fulmer, *Vice President of Industry Relations, Interthinx*

  Forensic examinations of mortgages obtained during the real estate boom reveal that mortgage fraud against lenders was, as the FBI warned in 2004, epidemic. Mortgage fraud helped inflate the housing bubble by artificially inflating property values. Publication of these corrupted values in tax, appraisal and real estate sales databases increased neighborhood property values in communities throughout the country and created serious affordability issues for millions of potential homeowners. To meet investor appetite and expectations, along with government demands to support low- to moderate-income and first time homebuyers, lenders relaxed their underwriting standards to allow risky niche loan products to be used by the general population. The result was millions of borrowers misrepresenting their financial qualifications to receive unsustainable loans. When these borrowers began to default in large numbers, the "mortgage meltdown" sparked the "liquidity crisis" and near-collapse of the global financial system. The legacy is a geographic concentration of foreclosures and underwater borrowers that are being exploited in today's current mortgage fraud schemes — schemes that will likely leave U.S. taxpayers largely on the hook for future losses.

Crime & Place

Soprano Meeting Room

- **Exploring Vandalism in the Local Neighborhoods: The Role of Collaborative Exploratory Spatial Data Analysis in Participatory Interpretation of Recorded Vandalisms**

  Ellie Bates, *Ph.D. Student, University of Edinburgh*

  A participatory Exploratory Spatial Data Analysis (ESDA) approach, combining crime mapping techniques and focus groups, can potentially bring benefits not just for crime scientists, but also for a wide range of researchers, including criminologists, sociologists, demographers, or those interested in urban studies; it is equally useful for practitioners, analysts and officers working for criminal justice agencies and anyone else interested in understanding more about crime and place. This presentation uses a case study of research into the place and time dynamics of vandalism in a local neighborhood undertaken in collaboration with a local police force to illustrate this.

1:30 p.m. – 3:00 p.m.

- **Sweeping the Street Corner: Neighborhood Variation in Crime Clearance**

  Brandon Behlendorf, *Faculty Research Assistant, University of Maryland*

  The clearance of non-homicide crimes ignores two key components: the ecology of the criminal event and the initial formal authority responding to the crime. Using a combination of criminal event, census, and housing data from a mid-sized metropolitan area, this study examines whether the probability of crime clearance is a function of ecological influence and/or the quality of an officer's experience with similar crimes. Results from multilevel logistic regressions provide insight into the role that place has on criminal case processing, with implications for police legitimacy and operations.

- **Designing Out Crime: What Works and What Doesn't**

  Derek Paulsen, *Associate Professor, Eastern Kentucky University*

  While burglary is spatially concentrated in certain high crime neighborhoods within a city, not all locations within these high crime neighborhoods are likely to be victims of crime. The spatial patterning of victimization within these high crime areas is largely determined by which locations offer the best opportunities for an offender. Importantly, design is one of central factors in determining good opportunities from bad. Yet, while theories such as Defensible Space and Crime Prevention Through Environmental Design have had a tremendous influence on design and prevention programs for decades, little empirical evidence exists about what features actually work best to prevent victimization. This research attempts to answers many of the lingering questions associated with these theories by providing a thorough empirical test of design features. Using detailed information about individual houses within a large city, this research attempts to provide clarity on which design features are most important to reducing criminal opportunities. In addition to research findings, this presentation will provide policy recommendations and practical guidance for police, architects, and urban planners.

GIS & Policing

Concerto B Meeting Room

- **The Philadelphia Foot Patrol Experiment: The Spatial Dynamics of Violent Crime Reduction and Evaluation**

  Jerry Ratcliffe, *Professor, Temple University*

  The Philadelphia Foot Patrol Experiment was one of the largest randomized controlled trials of foot patrol to take place in decades. Hundreds of officers patrolled small, targeted foot beats, and the 20% reduction in violence surprised many raised to believe the Newark foot patrol study of the 1980s was the last word in this area. This presentation provides an overview of the experiment, with emphasis on the use of street-corner geography and advanced techniques (Thiessen polygons, local Moran's I, etc.) used in collaboration with local knowledge to identify the key 'places' of violence in the city.

1:30 p.m. – 3:00 p.m.

- **Lessons Learned from the Philadelphia Foot Patrol Experiment: Considerations for Creating, Managing, and Evaluating Foot Patrol Programs**

  Evan Sorg, *Research Assistant, Temple University*

  In the summer of 2009, Philadelphia Police deployed more than 200 officers to 60 violent crime hotspots across the city. After 12 weeks, violent crime levels were significantly lower in the target areas compared to the control zones, challenging the long held assumption that foot patrol was ineffective in reducing crime. The presentation highlights the key criteria such a deployment scheme must consider to optimize foot patrols. We discuss creating appropriate beats, evaluating beat effectiveness, and measuring crime displacement/diffusion of benefits. We show that mapping both crime and land use facilities is essential in identifying foot patrols that will be successful.

- **Measuring the Dosage of Patrol in Crime Hotspots**

  Elizabeth Groff, *Assistant Professor, Temple University*

  Measuring dosage is a critical part of any policing experiment. While seemingly a straightforward problem, there are many aspatial and spatial wrinkles to consider. This presentation identifies the main components of dosage and then discusses how they were measured in the Philadelphia Foot Patrol Experiment. The following aspects of dosage will be discussed: 1) what activities are undertaken; 2) where the activities are undertaken; 3) how the activities are undertaken; and 4) deterrence through simple police presence. Suggestions are provided for measuring dosage of foot patrol in future studies.

Theory to Practice

Concerto C Meeting Room

- **High Crimes: The Influence of Elevation on the Geography of Crime**

  Gregory Breetzke, *Academic, University of Canterbury*

  Spatial theories of crime typically examine the influence of various social, economic, and ecological characteristics on crime patterns. In almost all these theories, however, the physical geography (i.e., slope, aspect, and elevation) of the region under investigation is ignored. This study investigates the influence of elevation on spatial crime patterns by examining crime over a three-year period (2005-2007) in two vastly different cities on two vastly different continents (Tshwane in South Africa and Christchurch in New Zealand). We investigate whether there are significant differences in crime types by elevation and whether these differences are consistent across time and space.

1:30 p.m. – 3:00 p.m.

- **A Geographical Analysis of Gang versus Non-Gang Crime, Variation in Gang Territoriality, and the Socioeconomic Characteristics Associated with Gang Neighborhoods in Albuquerque, New Mexico, 1996-2006**

  Timothy Hare, *Associate Professor of Anthropology, Morehead State University*

  We explore the spatial distributions of crime between gang and non-gang members, between different gangs, and variation within certain gangs. Previous studies suggest that gang membership facilitates violent criminality which is often territorially manifested. We use data from Albuquerque, New Mexico, with GANGNET data that identifies gang members in our population. We use exploratory spatial data analysis to characterize distributional patterns and several spatial statistical techniques to assess the meaningfulness of these patterns. Results indicate that gang members are more violent and tend to be clustered in particular territories. Gang territoriality is also manifested differently between gangs.

Spatial Analysis & Hotspots

Concerto D Meeting Room

- **The Combined Influence of Area Characteristics and Journey to Crime: Using Discrete Choice Models to Understand the Geographical Distribution of Serious Violence**

  Lucia Summers, *Research Assistant, University College London, Jill Dando Institute of Security and Crime Science*

  This presentation will discuss how two different types of mapping tasks – namely sketch and cartographic maps – may be used in offender interviews to examine offender spatial decision-making. The discussion will be based both on previous research and experience using these mapping tasks in a recent study conducted in the UK. Although the use of maps in offender interviews is associated with a number of problems, we will argue that they are beneficial and help to elicit information that otherwise might not be revealed.

1:30 p.m. – 3:00 p.m.

- **Cross-Jurisdictional Offending in New York State: A Spatial Analysis**

James Gilmer, *Chief of Crime Research Analysis, New York State Division of Criminal Justice Services*

The study reports the results of a five-year retrospective analysis of cross-jurisdictional offending among a cohort of 475,000 persons arrested in 2008-09 for felony and misdemeanor offenses in the 19 largest urban policing jurisdictions in New York State, including New York City. Offending patterns are analyzed based on offender's primary (most recent) arresting agency relative to other agencies in the state that have arrested the same offender since 2004. A spatial analysis, controlling for spatial autocorrelation and other structural factors, is conducted to assess whether certain primary agencies are more susceptible to the prevalence and seriousness of cross-jurisdictional offending.

- **Journey to Crime: The Spatial Relationship of Juvenile Crime in Saint Louis**

J.S. Onesimo Sandoval, *Assistant Professor, St. Louis University*

This research studies juvenile crime in St. Louis from 2004-2010. Of particular interest is the spatial clustering of different types of juvenile crime (i.e., robbery, assault, and murder). This paper will present results that focus on the spatial autocorrelation of each type of juvenile offense. It will also present spatial error and spatial lag regression models. This session will also shed light on the journey-to-crime patterns for different types of juvenile crime. This paper will make important contributions regarding the spatial characteristics of juvenile crime.

Crime & Place

Tenor Meeting Room

- **Effect of Land Use and Transportation Infrastructure on Residential Burglary**

Lorena Montoya, *Researcher, University of Twente*

This research studies the relationship between land uses and infrastructure on residential burglary. The objective was to assess which theory is better at explaining residential burglary:

- the "awareness space," which states that crime takes place at edges or along paths on the way to work, school, or recreation, or
- the "activity support" concept of Crime Prevention through Environmental Design (CPTED), which states that mixed uses and increased traffic in neighborhoods is positive because it decreases the risk of burglary.

Design recommendations based on the findings of this research are discussed.

- **Improving Intelligence for Managing Areas with Alcohol Supply Points**

Andrew Newton, *Senior Research Fellow, The University of Huddersfield*

This project aims to improve data sharing and intelligence for practitioners who manage the Night-Time Economy (NTE) and to examine the spatial relationships between establishments that serve alcohol (Alcohol Supply Points, ASPs) and crime. It examines their density and proximity, the mixture of different types of establishments in an area, trading hours, and their relationships with crime. It identified the need for and piloted a single multi-purpose database, tailored to local needs, that is simple and user-friendly, relevant, and adds value to what currently exists. Furthermore, important spatial relationships between ASPs, the availability of alcohol, and crime, are discussed.

1:30 p.m. – 3:00 p.m.

- **The Vulnerable Neighborhoods Index: A Quick Start for Reducing Crime and Victimization**

  John Warden, *Manager, Business Performance Section, Edmonton Police Service*

  The Edmonton Police Service created the Vulnerable Neighborhoods Index (VNI) as a mechanism for focusing operational problem-solving on those neighborhoods with the highest demand for policing. By using business intelligence analytics, we identify problems and issues by focusing on risk factors. We profile those risk factors by place, and then measure how we are doing in reducing crime and victimization. Next, we examine the amount and type of proactive policing activities in those neighborhoods. Lastly, we provide access and dissemination to our internal and external stakeholders and partners for a team approach to reducing crime and victimization – everyday.

3:00 p.m. – 3:30 p.m.

Break *Overture Foyer*

3:30 p.m. – 5:00 p.m.

Concurrent Sessions

Foreclosures

Picasso Meeting Room

- **Housing Foreclosure and Neighborhood Crime: A Case Study of the Louisville Metropolis**

  Haifeng Zhang, *Assistant Professor, University of Louisville*

  Housing foreclosures have escalated into a national crisis across America's metropolitan areas in recent years. The latest research on the relationship between foreclosure and crime suggests that the increasing rates of foreclosures exacerbates the crime rate across urban neighborhoods. This paper explores the spatial relationships between housing foreclosure and neighborhood crime using GIS-based mapping and spatial statistical methods. Results suggest that foreclosure has significant positive correlations with neighborhood-level violent and property crime, measured by density and clustering status (Local Moran's I), even after controlling for other contextual factors such as poverty and vacated homes.

- **Do Foreclosures Cause Crime?**

  Johanna Lacoe, *Doctoral Fellow, Furman Center for Real Estate and Urban Policy, New York University*

  Findings from an empirical research study on the impact of mortgage foreclosures on neighborhood crime in New York City will be presented. Utilizing point-specific crime and foreclosure data, unique GIS methods, and rigorous statistical methods, we find that foreclosures increase crime on geographic units, as small as a blockface. Tests for effects on specific types of crime, threshold effects, and the spillover effect of foreclosures allow us to make causal claims about the relationship between foreclosures and neighborhood crime.

3:30 p.m. – 5:00 p.m.

- **"Bounce-Back-Ability:" Measuring Community-Based Resilience to Predict the Social Impact of Recession**

  Steve Rose, *Head of Customer Knowledge, Birmingham City Council (UK)*

  The presentation will summarize an applied approach, building on a Cabinet Office Social Exclusion Task Force paper, measuring the resilience of communities within Birmingham (UK) to the social impacts of recession. This is important, as it can act as an early warning system predicting where the areas of the city that are likely to be disproportionately affected by recession, effectively unable to "bounce back." With this knowledge, strategic development of public policy is being targeted to shore up the least resilient communities to lessen the social impact of recession and the program of government austerity measures.

Crime & Place

Soprano Meeting Room

- **Propensity Score Matching Methods for Place-Based Evaluation: Assessing the Effectiveness of the Weed and Seed Program in Seattle**

  KiDeuk Kim, *Research Assistant, Urban Institute*

  There have been a growing number of place-based crime prevention programs implemented nationwide. One of the challenges in evaluating such programs emerges from the difficulty of identifying valid comparison conditions for innovative innovations. Except for a few randomized experiments in hotspot policing, most studies often rely on poorly matched comparison groups or simple pre- and post-designs without valid comparison groups. We therefore propose the use of a propensity score matching approach to evaluating place-based crime prevention programs. This approach is applicable to many situations and contexts wherein randomized experiments are not feasible. The presentation will discuss preliminary findings and research methods.

- **A Fine Scale Multi-Time-Period Methodological Framework to Compare Crimes with Building Characteristics in Post-Katrina New Orleans**

  Andrew Curtis, *Associate Professor, University of Southern California*

  This session will present a method of data collection and analysis that establishes the link between crime, building abandonment, blight, and returnees at a fine scale for multiple time periods in New Orleans following Hurricane Katrina. This approach utilizes cheap and mobile data collection strategies using a spatial video, a built environment coding scheme, and analysis using a spatial filter that creates a surface of abandonment/blight/returnee rates linked to individual crimes. Comparative analyses will be framed in terms of whether initial built environment-to-crime patterns are transferable across neighborhoods and time periods and therefore might possess a predictive quality.

3:30 p.m. – 5:00 p.m.

- **The Resilience of Homicide Patterns in Social Space: Hurricane Katrina and a Decade of Killing in New Orleans**

  Marcus Kondkar, *Associate Professor, Loyola University New Orleans*

  Geo-coded data on all homicides in the city of New Orleans during the two five-year periods either side of Hurricane Katrina from 2000-2010 are analyzed at the block group and neighborhood levels using census data and various repopulation and housing data compiled by the Greater New Orleans Community Data Center (GNOCDC). Comparisons between pre- and post-Katrina homicide patterns reveal strong geographic and social consistency between homicide patterns and neighborhood characteristics, independent of hurricane damage estimates.

GIS & Policing

Concerto B Meeting Room

- **Enhanced Crime Mapping & Analysis Techniques for Practical Application**

  Timothy Mashford, *Intelligence Analyst, Victoria Police (Australia)*

  Academic research into crime mapping and analysis is often sophisticated and not easily transferred to a practical application. Because of this, crime mapping techniques within police agencies remain relatively basic. To bridge this gap, the Victoria Police Geospatial Analysis Unit has developed several applications to allow for more sophisticated mapping and analysis to be completed by non-expert users. This paper examines some of the application, including the identification of space-time clusters, mapping in-transit offenses on a railway network, and visualizing street-based offenses that cannot easily be geocoded to point level.

- **Geospatial Fusion Center Analytics**

  Colleen McCue, *Senior Director, Social Science & Quantitative Methods, GeoEye*

  The fusion center model provides a mechanism for optimizing limited or otherwise scarce resources, including advanced geospatial analytics. Geospatial predictive analytics applies advanced statistical analysis and modeling techniques to spatial relationships. Resultant geospatial models or signatures identify areas ripe for the emergence of activities of concern and can easily be shared within and between agencies without revealing sensitive underpinning data. This "sharing without disclosure" enables cross-agency collaboration and support, and protection of sensitive data sources. The use of common geospatial capabilities, technology and analytic tradecraft across multiple fusion centers effectively creates an analytic "force multiplier" that can be leveraged in response to rapidly emerging trends and patterns, including those that cross traditional jurisdictional boundaries.

3:30 p.m. – 5:00 p.m.

- **An Evaluation of Gang Hot Spots Policing in Chicago**

  Rachel Johnston, *Director of Research and Development Division, Chicago Police Department*

  Chicago experienced significant decreases in crime in the 2000s at the same time that new policing strategies were implemented. NIJ funded a team of researchers in Chicago to determine if hot-spot style policing strategies were contributing to those decreases. Both qualitative and quantitative methods — from spatial analysis to a survey of community attitudes — were employed during the course of the evaluation. This presentation includes an overview of the project and the findings.

Theory to Practice

Concerto C Meeting Room

- **Enhancing Burglary Enforcement through Predictive Geospatial Modeling and Mapping**

  Robert Nash Parker, *Professor, University of California, Riverside*

  To enhance burglary enforcement and prevention in Indio, CA, geospatial modeling and mapping are used to enrich law enforcement data with additional sources of information on truancy, foreclosures, and graffiti. This data, along with past burglary patterns, are analyzed to develop predictive models of locations that we expect burglary rates to increase in the near future. Additional prevention and enforcement resources are put into these select areas, and prior data on burglary cases are compared to prospective cases to assess the effectiveness of this approach.

- **The Extent of the Near Repeat Phenomenon for Armed Street Robberies in Philadelphia**

  Cory P. Haberman, *Research Assistant, Temple University*

  The near repeat phenomenon has shown that nearby targets have heightened risks of victimization for a short period of time following a previous crime event. Past studies, however, have only identified near repeat patterns for pairs of events. This study identifies multiple-event chains of near repeats for Philadelphia armed street robbery data with research that clarifies the role of these chains in the formation of street robbery hotspots. The implications are significant for the allocation of police resources and crime prevention planning, and the findings raise questions about the validity of current police response tactics to robbery activity.

- **An Evaluation of Monitoring High-Risk Sex Offenders with GPS Technology**

  Stephen Gies, *Principal Investigator, Development Services Group, Inc.*

  The purpose of this study is to conduct an evaluation of the California Department of Corrections and Rehabilitation program to monitor High-Risk Sex Offender (HRSO) parolees with GPS technology. The treatment group includes all HRSO parolees who were placed on GPS. The control group includes HRSO parolees who were released into the community but not placed on GPS. The central analytic technique uses survival analysis to assess re-offending.

3:30 p.m. – 5:00 p.m.

Spatial Analysis & Hotspots

Concerto D Meeting Room

- **Spatio-Temporal Crime Series Linkage Analysis**

  Michael Porter, *Principle Scientist, GeoEye*

  The objective of criminal linkage analysis is to group crime events that share a common offender. We present a new methodology for case linkage that fuses the characteristics and features of the crimes, crime scenes, or offender (such as their site selection behaviors) with spatial and temporal proximity. This approach, using Bayesian models, naturally handles different types of variables (e.g., continuous and categorical), weights variables according to their importance, and accounts for missing data. By considering both the similarity and distinctiveness between all aspects of the crimes, we are able to improve linkage accuracy with interpretable and theoretically based models.

- **Hot Streets: A Spatio-Temporal Analysis of Crime and Streets**

  Christopher Herrmann, *Professor, Berkeley College*

  The current trend in environmental criminology focuses on micro-level 'places', including street segment(s), property lots, and buildings. Despite basic and applied research findings on the concentration of crime in urban areas and its utility for crime prevention applications, there continues to be substantial gaps in our knowledge about spatio-temporal patterns of crime at the street segment level. In contrast to the studies concerning the development of crime within individuals and communities, we have developed little basic knowledge about the development of crime at the street segment level. Using data from Bronx, NY, this research begins to bridge these gaps.

- **Street Robbery in Chicago 1991-2009: Spatial/Temporal Visualization**

  Richard Block, *Professor Emeritus, Loyola University Chicago*

  From 1991-2009, more than 300,000 street robberies were recorded by the Chicago Police Department. However, the number of street robberies declined from 30,000 to 11,000 per year over the time period. Using the 1991 spatial pattern as a base, this presentation uses animations of CrimeStat's kernel density interpolation and nearest neighbor hierarchical hotspots to analyze changes in the spatial distribution of robbery over 19 years. This presentation is intended for an audience that has a basic knowledge of GIS. Its purpose is to illustrate methods to visualize long-term spatial trends.

Crime & Place

Tenor Meeting Room

- **Catching the Bad Guy**

  Stephen O'Conor, *President, National Emergency Number Association*

  This presentation describes a crime prevention initiative by the West Palm Beach Police Department, which integrates video surveillance of crime hotspots with the Computer Aided Dispatch (CAD) system and police Mobile Data Terminals (MDTs). A GIS layer describing the viewing area of each of the 34 cameras is incorporated into the CAD mapping system; the telecommunicator is alerted when video may be available for priority calls, and patrol officers can access any of the cameras using software on their MDTs. A case study illustrates the process employed.

3:30 p.m. – 5:00 p.m.

- **The Effect of Public CCTV Cameras on Crimes and Disorders**

  Takahito Shimada, *Senior Researcher, National Research Institute of Police Science of Japan*

  The research examines the effectiveness of 50 surveillance cameras installed on busy streets in a major city. A control area and two different displacement areas were matched to the experiment area. Crime reports, 911 calls, and public incivility were collected to calculate the weighted displacement quotient (WDQ, Bowers and Johnson, 2003). Although consistent diffusion of benefit appeared for automobile-related crime and violence, displacement effect appeared for purse snatching in one of two displacement areas. It can be argued that purse snatching offenders displaced their activity in an isotropic way from the CCTV-installed area.

- **The Crime Reduction Effectiveness of CCTV in Philadelphia, PA: An Update**

  Jerry Ratcliffe, *Professor, Temple University*

  Newspaper accounts suggest that CCTV cameras are being implemented at a rate never seen before. For all this, there has been a lack of high quality, independent evaluation studies, and only one significant study in the U.S., conducted over a decade ago. We report on the research conducted to-date on our evaluation of the crime reduction impact of 200 CCTV cameras in Philadelphia, PA – an ongoing NIJ-funded large-scale, multi-method, quasi-experimental research study. The presentation will also briefly summarize existing external research on CCTV, so conference attendees will be armed with the latest research on the effectiveness of CCTV.

7:30 a.m. – 3:30 p.m.

Registration *Overture Foyer*

8:00 a.m. – 10:00 a.m.

Plenary Session

Symphony Ballroom II-IV

Place-Based Solutions, Problems, and Process: Clarity on Connections

Moderator: Winifred Reed, *Director, Crime, Violence, and Victimization Research Division, Office of Research and Evaluation, National Institute of Justice, U.S. Department of Justice*

- **Communities and Crime Conundrums and Connections to Crime Geographies: "My blind life" or "I can see clearly now?"**

  Ralph B. Taylor, *Professor, Temple University*

  On the one hand, communities and crime research has never been better. Substantial amounts of research in the last decade have appeared on social disorganization, routine activities, and collective efficacy; voluminous citations to those works continue. Forthcoming or recent volumes on crime and place, the neighborhood effect, and long-term street-block crime trajectories also document vigorous health. Nevertheless, there are four basic meta-theoretical puzzles communities and crime scholarship has not yet successfully solved. Those puzzles have implications for researchers and analysts of micro-level crime geographies. Crime analysts often have some degree of data control over two of these: spatial scaling and temporal scaling. Crime researchers and analysts may approach these two puzzles as purely technical problems, matters of convenience, or known limitations of external validity. Such approaches are sufficient for a focus on crime control, but further investigation is needed if the focus is on understanding or preventing crime. Conceptual confusions that can accompany decisions about how to spatially aggregate or disaggregate crime or crime-linked data are outlined. Parallel concerns linked to temporal aggregation and disaggregation also are sketched. Ways to "solve" some of these puzzles using real or simulated data, and strong inference model testing, are proposed.

- **The Right Picture Can be Worth a Trillion Dollars and Many Averted Crimes: Broadening What We Map, When We Map It, and With Whom We Share It**

  Eric P. Baumer, *Professor, Florida State University*

  The technologies and knowledge bases available for mapping and spatially analyzing crime have multiplied substantially during the past two decades. We can now readily locate hot spots, cold spots, and places in between; we have great tools to identify how things that happen in one area may impact what happens in an adjacent place or even miles away; and we can visualize and quantify these and other dimensions of spatial life in exciting and innovative ways. Many of these advancements are useful for identifying appropriate and timely solutions (place-based and more generally) to solve the problems that matter to us. But, translating mapping and spatial analysis tools into effective solutions often requires a much broader approach than we typically take to what we map, when we map it, and with whom we share it. These points are illustrated by considering 'linkages' between spatial patterns of mortgage fraud, foreclosures, and crime in America during the 2000s, features of our environment not routinely "mapped" simultaneously. An overarching theme that emerges from this vantage point is that a more inclusive research monitoring program may have highlighted opportunities for policy-makers to reduce significantly the financial cost and crime associated with the recent housing crisis.

8:00 a.m. – 10:00 a.m.

- **Dispersing the Crowd: A Solution to Recidivism**

  David Kirk, *Assistant Professor, University of Texas at Austin*

  More than 725,000 U.S. prisoners are released from incarceration each year. These ex-prisoners tend to be geographically concentrated within resource deprived sections of metropolitan areas, often returning to the same neighborhoods where they resided prior to incarceration. The massive rise in the past few decades in the number of returning prisoners combined with the geographic clustering of these ex-prisoners means that select urban communities have literally become inundated with individuals who have served time in prison. A likely consequence of this concentration of prisoner reentry is recidivism—roughly two-thirds of released prisoners are rearrested within three years of release and half return to prison. The routine exposure to criminogenic influences and criminal opportunities portends a bleak future for individuals who return to neighborhoods with numerous other ex-prisoners following incarceration. What if there was a different policy and a different geographic distribution of ex-prisoners? If instead of concentrating ex-prisoners in geographic space, what would happen to recidivism rates if ex-prisoners were dispersed across space? This study seeks to answer these questions by exploiting a natural experiment—Hurricane Katrina—to examine how neighborhood changes in the concentration of parolees affects parolee re-incarceration rates. Findings reveal that an increase in the concentration of parolees in a neighborhood leads to a significant increase in the neighborhood re-incarceration rate. Releasing large numbers of ex-offenders into the same neighborhoods adversely affects the very public safety that criminal justice policies in the United States are designed to protect. To reduce recidivism, an alternative policy should be considered, one which disperses the parole population instead of concentrating it into select urban neighborhoods.

10:00 a.m. – 10:30 a.m.

Break *Overture Foyer*

10:30 a.m. – 12:00 p.m.

Concurrent Sessions

GIS to the Field

Picasso Meeting Room

- **Tactical Prediction Using the Probability Grid Method in a Risk Terrain Model**

  Bryan Hill, *Crime Analyst, Glendale Police Department*

  Since 2005, the Probability Grid Method (PGM) has become a model that allows analysts to use more than one spatial statistics method to help predict where a new offense in a crime series will occur, as well as use demographic and other information known about the behavior of the suspect's victims to help reduce the total area for the prediction, and help narrow down the areas of surveillance. With the Risk Terrain Modeling (RTM) process described by Dr. Caplan and Dr. Kennedy, the PGM has entered a new phase by using spatial analyst and the methods described in the Risk Terrain Modeling manual to develop the PGM rather than the current vector grid process typically used.

10:30 a.m. – 12:00 p.m.

- **Effective Emergency Response in Large Urban Structures: Visual Analytic Tools**

  Kalpathi Subramanian, *Associate Professor, The University of North Carolina at Charlotte*

  In this work, we present visual analytic tools that can effectively respond to emergencies on large urban structures. Our system simulates an emergency scenario consisting of a command center and responders on the ground. Communication is via a PostgreSQL/PostGIS server. The command center is modeled as a traditional desktop application, and responders communicate with the command center by direct interaction via a mobile application on smartphones. The command center and the responders have the complete geometry, routing, and other critical information of the urban structures. We will present the various features of our system and recent results from user studies.

- **Evaluation of GPS-Enabled Cell Phones and Laptops for Applications of Law Enforcement Patrol**

  Tom Casady, *Chief of Police, Lincoln Police Department*

  Geographic Information Systems (GIS) are used by police departments to visualize the location of crime events and addresses of persons of interest stored in a centralized database on a digital map and to model crime patterns for criminal activity prediction. Most police departments, however, have not yet integrated their GIS data with Automated Vehicle Location (AVL) and Global Position Systems (GPS) for use in their field operations. This lack of integration inhibits law enforcement capabilities. This presentation will show how laptop and hand-held computing devices (iPhones, Droids, etc.) can efficiently integrate geospatial technologies for use by police officers.

Crime & Place

Soprano Meeting Room

- **Increasing Student and Community Safety Partnership**

  George Roedl, *Graduate Research Assistant, West Virginia University*

  The Increasing Student and Community Safety partnership (ISaCS), a collaboration between the West Virginia University Police Department, the city of Morgantown, WV Police Department, and researchers, supports the adoption of cross-jurisdiction place-based crime analysis. The specific objectives are to:

  1) establish multi-jurisdiction crime mapping and analysis;
  2) employ geospatial technologies to provide information for problem-oriented decision making and resource allocation by law enforcement agencies;
  3) enhance crime reduction through increased information dissemination with a combination of in-person and online solutions, including an interactive map server;
  4) encourage cooperation among additional law enforcement agencies in the same region.

10:30 a.m. – 12:00 p.m.

- **Social Barriers to Movement of Criminals**

  George Rengert, *Professor, Temple University*

  Barriers to criminal spatial movement are hypothesized to have two effects: a) barriers restrict movement across the barrier, creating a directional bias of movement in the opposite direction and b) barriers concentrate criminal activity at their edges where movement is restricted and social disorganization is expected to be the greatest. This presentation uses Philadelphia Police data to measure the impact of the social barrier between black and white communities on the spatial movement of black and white offenders. If directional bias is detected, it has implications for the practical use of geographic profiling and theoretical implications of distance decay.

- **Crime Impact Statements: Assessing How New Development Impacts Neighborhood Crime**

  Derek Paulsen, *Associate Professor, Eastern Kentucky University*

  This session will provide police and planners with a methodology for using GIS and available local data to determine the impact of proposed development on a local neighborhood and include a case study of an actual crime impact statement. In addition to a discussion of the research results, discussion will focus on how these techniques can be more broadly applied by police and city planning agencies and methods to mitigate potential negative impacts of proposed development.

GIS & Policing

Concerto B Meeting Room

- **Big Issues, Fewer Resources: Identifying Challenging Localities for Police and Partnership Intervention**

  Andrew Brumwell, *Geo-spatial Intelligence Analyst, West Midlands Police*

  This paper describes the work undertaken recently by West Midlands to identify "Challenging Localities" in their area. Greater emphasis on police and partnership working requires a multi-faceted approach to identifying those areas that cause most concern for local public bodies and will need joint action and funding-streams to tackle complex social ills that commonly afflict these areas. There is also a need to have a common understanding of the geography of challenging neighborhoods and how partnership data can be combined so that all partners understand the complexities that these neighborhoods face.

- **Demonstrating Analytical Utility with School Police Emergency Response**

  David Meade, *Detective Sergeant Investigative Analysis, Niagara Region Police Service*

  School Police Emergency Response (SPEAR) application enables first responders to have detailed school specific information of any school in the Niagara Region as any situation develops. Examples of these situations could be chemical spills, school lockdowns, and active shooters. This presentation explains the concepts of the SPEAR project and demonstrates GIS as a powerful tool that assisted in project development.

10:30 a.m. – 12:00 p.m.

- **Tactical Automated Response using GPS Enabled Technology**

  Pamela Scanlon, *Executive Director, Automated Regional Justice Information System (ARJIS)*

  Since 2008, San Diego County has experienced an increase in teenage daytime abductions and rapes. The victims were attacked by a parolee or registered sex offender who had frequently violated parole. ARJIS is addressing issues on both the law enforcement and public awareness fronts by: 1) developing a state-of-the art field application to provide officers real-time location specific data for their queries with the ability to set automated alerts on these parolees and 2) monitoring the addresses and movements of registered sex offenders and parolees to find the correlation between current sex crimes and high crime activity areas.

Theory to Practice

Concerto C Meeting Room

- **Travel Distance and Violence within Drug Markets**

  Lallen Johnson, *Ph.D. Candidate, Temple University*

  Theoretical arguments suggest that the travel distances of drug buyers and sellers have implications for the violence that occurs within drug markets. For example, drug dealers that travel to communities outside of their own may be more likely to resort to violence to settle disputes, but less likely to do so within their own communities where there they are likely to have a stronger connection with residents. Therefore, it is important to understand travel patterns, and specifically whether violence within drug market violence varies by the aggregate distance of drug offenders. This research has significant implications for policing and crime prevention.

- **Using Cognitive Maps to Understand Fear of Gangs in Los Angeles: A Standardized Approach for Data Collection and Analysis of Perceived Safety/Danger**

  Jacqueline W. Mills, *Assistant Professor, California State University, Long Beach*

  Fine scale data is both essential to effectively targeting social problems and often difficult to systematically collect. This situation is particularly true in the case of understanding environments that are conducive to crime. This paper uses a case study of mapping fear in Los Angeles to develop a systematic approach to collecting perceptions of fear and then quantitatively analyzing the data in a GIS. The aim is to present a systematic, replicable, and place-based approach to including resident perceptions as a component of data for improving policing and targeting resources for agencies tasked to manage health and public safety.

10:30 a.m. – 12:00 p.m.

- **Patterns in Offender Distance Decay and the Geographic Profiling Problem**

  Mike O'Leary, *Professor, Towson University*

  Fundamental to any approach to the geographic profiling problem is an understanding of how offenders select targets, and one important component is the distance decay behavior of the offender. This curve gives the fraction of offenses that occur at a given distance from the offender's home base. Despite being well studied, there is no consensus as to the best mathematical form of the distance decay curve. We present some new a priori models for offender distance decay behavior, and compare them to observed behavior in various jurisdictions. We then examine the implications of these results.

Spatial Analysis & Hotspots I

Concerto D Meeting Room

- **The Role of Spatial Analysis in the Toronto Anti-Violence Intervention Strategy**

  Ian Williams, *Senior Intelligence Analyst, Toronto Police Service*

  The Toronto Anti-Violence Intervention Strategy (TAVIS) is a place-based intensive, violence-reduction, and community mobilization strategy intended to reduce crime and increase safety in Toronto neighborhoods. The initiative is a municipal-provincial joint project that was established to address gun violence in the city of Toronto. TAVIS includes a Neighborhood TAVIS Initiative that facilitates additional Neighborhood TAVIS officers being assigned to specific geographic areas from May to October. These neighborhoods have been chosen because of their high concentration of violent activity through objective, spatial analysis that allows for a more complete understanding of the "places" where the initiative will take place.

- **Exploring Spatial Patterns of Property Crimes in Changchun, China**

  Wei Song, *Associate Professor, University of Louisville*

  This research investigates property crimes (accounting for almost 75% of all crimes) in 2008 in Changchun, China. Using Geographic Information Systems (GIS), standardized property crime rates, and spatial statistics, the spatial distribution of property crime incidents will be examined, and general patterns and significant local clusters (hot-spots) of property crimes will be uncovered. Based on the theoretical framework of crime ecology, structural relationships between spatial crime patterns and social, economic, demographic, and locational factors, as well as significant localized processes and trends, will be explored using OLS regression and Geographically Weighted Regression (GWR).

10:30 a.m. – 12:00 p.m.

- **A Spatial-Temporal Analysis of Crime Surrounding Liquor License in Washington, DC**

  Brian Lawton, *Assistant Professor, George Mason University*

  The current study examines the impact of the introduction and presence of liquor licenses on arrests and calls for police service in Washington, DC. There are approximately 1,600 active liquor licenses, one-third of which are specified to be off-site consumption but the remaining two-thirds allowing for the consumption of alcohol at the specified location in DC. Patterns of crime surrounding these establishments are examined both spatially and temporally. In addition, other variables of interest are included, such as socio-demographic characteristics of the areas, 311 calls for service, and the type of liquor license establishment.

Spatial Analysis & Hotspots II

Tenor Meeting Room

- **The Power of Local Space-Time Cluster Techniques for Crime Analysis**

  Julia Koschinsky, *Research Director, GeoDa Center for Geospatial Analysis and Computation*

  Although the use of spatio-temporal methods in crime analysis is increasingly popular, comparative work on the cluster detection abilities of these techniques is rare. This study is a simulation analysis comparing the cluster detection ability of two relatively new statistics, the space-time Laser Interferometer Space Antenna (LISA) and the space-time Markov, to two popular spatio-temporal statistics, the Kulldorff SatScan and the Crimestat STAC scan statistic. In addition to highlighting variations in the cluster detection capabilities of these statistics, the study develops a statistic to quantify differences in the hotspots produced by each statistic. Implications of the results for practical crime analysis are discussed.

- **Effects of Thematic Techniques on Hotspot Crime Mapping**

  Joel Hunt, *Social Science Analyst, National Institute of Justice*

  The research aims to explore the implications of various thematic mapping techniques on the results of crime hotspot mapping. It also intends to examine the indices associated with hotspot mapping to describe the limitations and benefits of utilizing the indices when defining an area as a hotspot.

- **Managing Crime Hotspots and Better Defining Boundaries Utilizing Grids**

  Steven Armon, *COMPSTAT/Crime Analysis Supervisor, Dallas Police Department*

  Getting away from traditional geographic police boundaries such as beats and reporting areas by using grids can better help in defining your crime hotspots. Grids can also improve managing, such as tracking movement, disbursement, displacement, and/or overall reduction or increase of crime in the hotspots.

12:00 p.m. – 1:30 p.m.

Lunch On Your Own

1:30 p.m. – 3:00 p.m.

Concurrent Sessions

Geographic Profiling

Picasso Meeting Room

- **Criminal Geographic Profiling of Serial Killers**

  Michael Leitner, *Associate Professor, Louisiana State University, Baton Rouge*

  This presentation will discuss two different Criminal Geographic Profiling (CGP) approaches, including Journey-to-Crime (JTC) and Newton's Geoforensic Analysis (NGA). Both methods will first be discussed at a conceptual level and then applied to one solved, marauding serial killer, and one still unsolved and (possible) commuting serial killer. The CGP results from the first case employ the JTC method with different calibrated distance decay functions. The CGP results from the second case tests two different NGA methods, using a circular and an elliptical search area. The second case also describes a collaborative effort between law enforcement and academia.

- **Operation Modes: A Case Study on the Application of Geographic Profiling in a Victorian Serial Rape Investigation**

  Peter Branca, *Sergeant, Victoria Police*

  This presentation will examine how the eclectic range of geographic profiling principles were used to provide intelligence support to a 2005 serial rape investigation in Victoria, Australia. This unique approach to investigations for Victoria Police provided some surprisingly accurate predictions, including the location of the offender's home and a subsequent attack location. A post-investigation assessment concluded that these predictions could have led to an early arrest of the offender. This study draws on information sourced from the Victoria Police, court case documents, as well as the author's personal involvement with the investigation and development of the profile.

- **The Geography of Terrorism and the Madrid Train Bombings**

  Kim Rossmo, *Professor, Texas State University*

  On March 11, 2004, a series of coordinated bombings killed 191 people and wounded 1,800 on four commuter trains in Madrid, Spain. The attacks were organized by an al Qaeda-inspired terrorist cell, and involved a number of people in various roles, including organizers, recruiters, logistical support personnel, explosive transporters, and bombers. In this study, we identified 40 locations associated with the bombings; these locations were then mapped and inter-site probability distributions calculated. Finally, subsets of the known terrorist cell sites were created in order to measure the ability of geographic profiling to determine the location of unknown cell sites.

1:30 p.m. – 3:00 p.m.

Crime & Place

Soprano Meeting Room

- **Miami International Airport Crime Mapping Application**

  Gus Gonzalez, *Senior Systems Analyst, Miami-Dade Police Department*

  This session is intended to provide an overview of the intelligence-based Miami International Airport mapping application developed for the Miami-Dade Police Department's Airport District. The presentation will be comprised of a brief Powerpoint presentation detailing the challenges, methodology and technology utilized in developing this custom built information solution. The Powerpoint presentation will be followed by a brief demonstration of the GIS/AutoCAD related mapping system. This unique, browser-based application provides the functionality to plot criminal activity by location within the campus, using architectural drawings as the base mapping layer.

- **Measuring, Analyzing, and Visualizing the Criminality of Place: The Example of Hotels and Motels**

  James L. LeBeau, *Professor, Southern Illinois University, Carbondale*

  This presentation examines the variation of crimes and calls for services for 160 hotel and motels in Charlotte-Mecklenburg, NC, during 2005. Regression trees and mapping are employed in order to measure, analyze, and visualize how crimes per 100 rooms and calls for police services per 100 rooms vary with location, distances from prime destinations, market price segments, hotel scales, operating policies, and crime prevention initiatives.

- **Understanding Developmental Crime Trajectories at Places: Social Disorganization and Opportunity Perspectives at Micro Units of Geography**

  Elizabeth Groff, *Assistant Professor, Temple University*

  Although individuals and communities have traditionally been the focus of criminological research, criminologists have begun to explore the importance of "micro" places in understanding and controlling crime. Recent research provides strong evidence that crime is strongly clustered at hotspots and that there are important developmental trends of crime at place, but little is known about the geographic distribution of these patterns or the specific correlations of crime at this micro-level of geography. We report here on a large empirical study that sought to address these gaps in our knowledge of the "criminology of place."

1:30 p.m. – 3:00 p.m.

GIS & Policing

Concerto B Meeting Room

■ The Use of Maps in Offender Interviewing

Lucia Summers, *Research Assistant, University College London, Jill Dando Institute of Security and Crime Science*

While both area characteristics (e.g., socio-demographic factors) and the journey to crime have been extensively studied with respect to the spatial distribution of serious violence, it is uncommon for both factors to be considered together. In this research, we use spatial econometric models to do this, and examine the relative contribution of area-level and offender specific factors, and the interaction between them. Both Census and Land Use data were employed; distances from offender home to offense location are calculated using various techniques, and include those that take into account the role of connectors (e.g., train lines or main roads).

■ Mapping Police Stress: Understanding the Physiological Response to Calls for Service

Matthew Hickman, *Assistant Professor, Seattle University*

This presentation will discuss an innovative methodology for studying police stress. In addition to the direct, real-time measurement of stress response (via heart rates) during officer shift work, a GPS component places these data in spatial context. Results of a pilot test will be presented demonstrating the feasibility of the methodology and lending support to its employment in systematic studies of police stress. Anticipated products include descriptive "stress maps" of a study area. Policy implications, as well as potential limitations, difficulties of implementation, and future directions will be discussed.

■ Improving Crime-Free Multi-Housing with GIS and BI

Safa Eglimez, *Crime and Intelligence Analyst, City of Henderson Police Department*

The Crime Free Multi-Housing Program has been developed by the Mesa, AZ, Police Department in 1992 and has been adopted by numerous agencies over the years. Henderson Police Department improved on the framework by utilizing a daily reporting system along with GIS maps to track the offenses occurring at or near these crime-free multi-housing apartments. This presentation will present the next step to enhancing the effectiveness of crime-free multi-housing.

1:30 p.m. – 3:00 p.m.

Theory to Practice

Concerto C Meeting Room

- **"Drugs are Bad, Alcohol is Bad:" A Deep Dive Mapping and Ethnographic Study Assessing the Societal Cost and How the Treatment and Prevention Systems Can be Improved**

  Steve Rose, *Head of Customer Knowledge, Birmingham City Council (UK)*

  In Birmingham (UK) there are an estimated 18,000 problematic drug mis-users who will cost £8.6bn over their lifetime. There are 17,000 alcohol-related hospital admissions per annum. The most problematic will have an annual bill of over £45k each. Research tells us every £1 spent on treatment saves £9.50 by preventing future crime, health, and other social ills. Our study took a deep dive into this problem and the current treatment systems, combining spatial and ethnographic research mapping customer journeys. The results demonstrate substantial opportunities to improve outcomes whilst significantly alleviating the social cost of drug and alcohol misuse.

- **Reducing Crime through Collective Efficacy: Identifying Social Control and Social Cohesion in Miami Neighborhoods**

  Craig Uchida, *President, Justice & Security Strategies, Inc.*

  This presentation will examine neighborhoods, crime, and collective efficacy in Miami-Dade County, Florida. Funded by NIJ and the Children's Trust of Miami-Dade County, researchers at Justice & Security Strategies conducted community surveys and systematic social observations to find determinants of communities and neighborhoods that lead to crime reduction. It will describe the use of mapping to select eight neighborhoods for community surveys and systematic social observations. Researchers will discuss findings from the surveys, including the levels of collective efficacy within and across neighborhoods.

- **The Influence of Proximity to Gangs on Resident Perceptions and Behavior**

  Caterina Gouvis Roman, *Assistant Professor, Temple University*

  This paper explores how resident and neighborhood proximity to gangs influences residents' perceptions of neighborhood problems, neighborhood satisfaction, and use of neighborhood spaces, net of compositional factors and neighborhood structural constraints. Influences of social integration, at both the individual level and neighborhood level, are also considered. Hierarchical analyses reveal that proximity to gangs influences reports of neighborhood problems, but the findings differ by type of problem behavior. The results suggest the need for continued theoretical exploration of the complex interplay of community-gang dynamics both across and within neighborhoods with focused attention to measuring resident networks and types of networks.

1:30 p.m. – 3:00 p.m.

Spatial Analysis & Hotspots

Concerto D Meeting Room

■ A GIS Analysis of Crime Hotspots and Demographics in Colorado Springs, Colorado

Andrew Dukes, *Crime Analyst, Colorado Springs Police Department*

In recent years, there have been considerable developments in mapping the spatial and temporal patterns of crime. Surprisingly, not much work has been done to develop an understanding of the underlying demographics of these patterns, especially within law enforcement agencies. This research drew upon GIS to map crime hotspots and explore their demographic characteristics in Colorado Springs, CO. In particular, GIS was used to map the occurrence of residential burglary between the 2000 and 2008, perform spatial analysis to identify spatial clustering, and determine hotspot areas. Residential burglary was chosen here, because it is one of the most prevalent and financially costly crimes. Correlation analysis and tests of significance were conducted to explore and measure the magnitude of the relationship between residential burglary rate and demographic variables at the census block group level. The results of this study indicate that positive predictors of residential burglary are related to higher education levels, higher household incomes, and married marital status. Negative predicators of residential burglary are a function of minority races, divorced or never married marital status, and home renters. The outcome of a stepwise multiple regression indicates an overall model with two predictors, that is, percent of people with an educational level above high school and percent of people reporting their race as black that significantly predict residential burglary rate, $R = .382$; $R^2 = .146$, $p < .001$. The findings of this study are significant to law enforcement agencies in that they provide important pointers to create long-term strategies for focused crime reduction at the neighborhood level with concomitant operational efficiencies.

■ Forecasting the Spatio-Temporal Pattern of Arson

Jeff Prestemon, *Research Forester, United States Department of Agriculture-Forest Service*

According the National Fire Protection Association, on average, 317,000 intentionally set fires (e.g., arson) occur each year in the U.S., resulting in more than 400 civilian deaths, 1400 civilian injuries, and $1.1 billion in direct property damages. Previous research has shown the daily count of arson is clustered in time and space, suggesting its predictability. We present a forward-looking hotspot model that forecasts the spatio-temporal pattern of arson for the city of Detroit, MI. The model can predict changes in arson occurrence due to changes in previous arson activity, weather conditions, and seasonality.

1:30 p.m. – 3:00 p.m.

- **Operation Sixth Sense: Using Place-Based Tactics to Move Beyond Traditional Hot-spot Policing**

  Diana Havlin, *Senior Crime Analyst, Metropolitan Police Department*

  During the summer of 2010, the District of Columbia Metropolitan Police Department (MPD) enacted a crime control initiative based on the tactics and findings of Mark Kleiman's 2009 work, *When Brute Force Fails*. Kleiman presents alternatives to traditionally-held beliefs about how criminals conduct cost/benefit analyses and how police, courts, and social programs should be coordinated to prevent and control crime. Using these principles to move beyond traditional hot-spot policing, MPD identified six compact areas experiencing disproportionately high rates of crime associated with gang and drug violence and launched Operation Sixth Sense. This presentation will demonstrate the methods used to select the focus areas, the policing tactics and strategies used, and the final successes and failures of the initiative.

Traffic

Tenor Meeting Room

- **Using Spatial Analysis to Identify and Map Crime and Traffic Hotspots: A Case Study of the Data-Driven Approach to Crime and Traffic Safety**

  John Cryer, *Detective/Analyst, Washoe County Sheriff's Office*

  The Data-Driven Approach to Crime and Traffic Safety (DDACTS) uses an approach that has elements of both the community and intelligence-led models of policing. DDACTS integrates location-based crime and traffic data to attempt to launch efficient and well-organized methods for deploying law enforcement resources. Using GIS technology to recognize areas that have high incidences of crime and crashes, DDACTS uses traffic enforcement strategies that attempt to accomplish the goals of fighting crime and reducing crashes and traffic violations.

- **Reducing Impaired Driving through the Identification of Repeat Target Vehicles**

  James Stewart, *Crime Analyst, Saint John Police Force*

  Repeat impaired drivers are persistent and unaffected by social pressure, moral appeals, or the fear of arrest. This small group accounts for a disproportionate number of all impaired driving trips. New approaches are needed to identify and deal with offenders. We propose a method based on the discovery that 9.5% of impaired driving calls for service involve repeat vehicles. Using the number of times a vehicle repeats, the average time to repeat, and the personality characteristics of repeat impaired drivers, we create a comprehensive and predictive description of a Repeat Target Vehicle. New and innovative crime reduction strategies are explored.

1:30 p.m. – 3:00 p.m.

- **Data-Driven Approaches to Crime and Traffic Safety**

Brett Railey, *Chief, Winter Park Police Department*

Data-Driven Approaches to Crime and Traffic Safety (DDACTS) is a law enforcement operational model that uses the integration of location-based crime and traffic crash data to establish effective and efficient methods for deploying law enforcement resources. Presenters will discuss how DDACTS ensures accountability and provides a dynamic, evidence-based problem-solving approach to crime and crashes. This approach, grounded in community-oriented law enforcement, suggests that place-based policing, as opposed to person-based (traditional) policing, is more efficient as a focus of law enforcement actions. It provides a more stable target for law enforcement activities, has a stronger evidence base, and raises fewer ethical and legal problems.

3:00 p.m. – 3:30 p.m.

Break *Overture Foyer*

3:30 p.m. – 5:00 p.m.

Concurrent Sessions

Sex Offender Residency Restrictions

Picasso Meeting Room

- **Sex Offender Mobility and Residence Restrictions in Miami-Dade County, Florida**

Paul A. Zandbergen, *Associate Professor, University of New Mexico*

Sex offender residence restrictions limit where offenders can establish residence. Local ordinances adopted in Miami-Dade County, FL, have almost eliminated affordable rental housing in urban areas, resulting in displacement and homelessness among offenders. The current study examines the changes in residence of offenders in Miami-Dade County between 2005-2010. Residential address histories were mapped and compared to the boundaries of restrictions zones to determine offender mobility. Results indicate a substantial displacement of offenders to marginal areas within the county and high concentrations of offenders in a limited number of low-cost residential complexes.

- **Sex Offender Residency Restriction: The Laws, the Research, the Reality**

Julie Wartell, *Crime Analyst Advisor, San Diego District Attorney's Office*

In the last five years, many states and municipalities have implemented new, tougher sex offender laws. These laws have been controversial, as studies have shown that the main result is an increase in homelessness, not necessarily increased public safety. This presentation will provide an overview of the state residency-restriction laws, the research surrounding this issue, a study of sex offender residences, and a San Diego County Court case that led to a unique collaboration between the District Attorney's Office and public defender.

3:30 p.m. – 5:00 p.m.

- **Residence Restriction Legislation and Sex Offender Clustering in Upstate New York**

  Kelly M. Socia, *Assistant Professor, University of New Mexico*

  This study explores whether sex offender residence restriction policies are associated with the neighborhood distribution of registered sex offenders. Multiple regression is used to examine the association between the presence of county and local level (e.g., city or town) residence restriction legislation and the spatial clustering of sex offender residences within census block groups in upstate New York counties. Multiple measures of spatial clustering are examined in separate models, with each including controls for neighborhood demographic and socioeconomic characteristics that could potentially influence the spatial distribution of housing and residents. Results and implications for both policymakers and future researchers are discussed.

Crime & Place

Soprano Meeting Room

- **Using Place to Inform Juvenile Justice Policy Reforms & Practice: GIS and the Brooklyn for Brooklyn Initiative**

  Benjamin Estep, *Research Associate, Vera Institute of Justice*

  As part of an effort to reform juvenile justice in New York State, the Vera Institute of Justice and the state's Office of Children and Family Services are using GIS to better understand the youth population in state custody and the communities from which they come and to which they will reenter. This presentation will discuss mapping work carried out in support of the Brooklyn for Brooklyn Initiative – a model reform effort seeking to ensure that youth placed in state custody remain close to home, in the least restrictive setting, and with effective provision of services and community support.

- **Employing GIS to Proactively Examine Mortgage Fraud**

  Shellie Solomon, *Chief Executive Officer, Justice & Security Strategies, Inc.*

  Florida is a leading state in the nation for mortgage fraud complaints, and within Florida, Miami-Dade County is number one for those complaints. As research findings indicate an existing relationship between foreclosures and mortgage fraud, Miami-Dade officials have proactively examined foreclosures within the county. As the research partner for the Miami-Dade State Attorney's Office Mortgage Fraud Unit, Justice & Security Strategies analyzes data about foreclosures to understand the patterns, impacts, and changes in neighborhoods related to the foreclosures using a GIS platform. Information from these analyses are used to understand the relationships between foreclosures and mortgage fraud incidents.

3:30 p.m. – 5:00 p.m.

- **The High Point Drug Market Initiative: Methodology, Analysis, and Geography**

  Eleazer D. Hunt, *Crime Analyst, High Point Police Department*

  This paper details the role of GIS and crime analysis in the High Point Drug Market Initiative. This initiative is based on the Focused Deterrence model, and uses GIS and crime analysis to identify the target area and conduct long-term analysis. The methodology allows the process to be reused and is viewed as independent and transparent. The Initiative has been successful and is being replicated in numerous cities around the U.S. This paper describes the methodology, findings, and lessons learned – specifically, several of the secondary and tertiary findings regarding the geographic structure of drug markets and associated crime.

GIS & Policing

Concerto B Meeting Room

- **Knowledge-Based Policing: Developing a Spatially-Enabled Platform**

  Peter Branca, *Sergeant, Victoria Police*

  Victoria Police, Australia, is a strong advocate of Intelligence-Led Policing (ILP), and has embraced the use of GIS in support of this policing strategy. The organization now has more than 400 desk-top mapping programs, mainly used for crime and traffic analysis and emergency management. Despite enthusiasm in the use of this technology, it is recognized that the organization needs to move to the next level of maturity to more effectively achieve the ambitions of ILP and knowledge-based policing. This presentation will outline the process taken by Victoria Police to move to an enterprise-wide "spatially-enabled" platform.

- **Woodcroft Burglary/Larceny Series**

  Mary Roberts, *Crime Analyst, Durham Police Department*

  The Woodcroft Burglary/Larceny Series is a presentation based on the foundation that crime patterns, trends, and even a crime series can be identified and connected to a particular geographic area through similar modus operandi and other unique distinguishable identifiers, such as time of day and victim types. The presentation will show how mapping played an important role in identifying a crime series that occurred in Durham, NC, in the fall of 2009. The presentation focuses on the uses of Crime Analysis along with mapping technologies and how together they can help to deter or stop further crimes from occurring.

- **The Influence of Environmental Features on Residential Burglary**

  Gregg Jones, *Police Lieutenant, Lexington Division of Police*

  This presentation will highlight the partial replication of research conducted by Xiaowen Yang, a Ph.D. student in the Urban and Regional Planning Department at the University of Florida. Using Geographic Information Systems and statistical tools, this presentation intends to: (a) explore the spatial and temporal patterns of burglary; (b) examine the correlation between burglary and environmental variables; and (c) identify specific features of the physical environment that contribute to burglary in general and to repeat burglary and "near repeat burglary" in particular. The study uses 2008-2009 residential burglary data from the Lexington, KY, Division of Police.

3:30 p.m. – 5:00 p.m.

Theory to Practice

Concerto C Meeting Room

- **Combining Google Earth and Agent-Based Simulation Modeling for Crime Analysis**

  George Kikuchi, *Researcher, National Research Institute of Police Science*

  Simulation modeling has become a popular approach in criminology research for theory and hypothesis testing. However, the potential of simulation modeling is not limited to the academic realm. Spatially explicit simulation models, in particular, have practical applicability in policing as the models allow analysts to examine various "what if" scenarios. As an example of spatial simulation models, we present an analysis of crime hotspots and pedestrian movement across the real road network. Taking advantage of animation and dynamic mapping capabilities of Google Earth, the analysis is easily extended to the spatio-temporal realm.

- **Visualization of Crime Trajectories with Self-Organizing Maps**

  Michael Leitner, *Associate Professor, Louisiana State University, Baton Rouge*

  This research is a first try to identify crime hotspots based on crime trajectories in combination with Self-Organizing Maps (SOM). As an unsupervised competitive neural network algorithm, SOM classifies neighborhoods according to their demographic and socio-economic characteristics, while preserving the topological relationships as accurately as possible. It thus allows the exploration of complex, formally unknown, patterns. Subsequently, spatial scan statistics can be used to identify and map weekly spatiotemporal crime hotspots onto different SOM visualizations. These attribute-time paths enable a detailed analysis of crime affected areas. The study area for this new research is the city of Houston, TX.

- **Targeting Gangs with Mobile GIS**

  Corina Putt, *Research Associate, Justice & Security Strategies, Inc.*

  With more than 41 separate law enforcement agencies, painting a complete picture of the gang problem in Miami-Dade County, FL, has its challenges. While gangs are not bound by police jurisdictional lines, most police agencies are. To address this, the 11th Judicial District State Attorney's Office created a specialized unit, the Gang Strike Force (GSF) to address gang activity county-wide. Justice & Security Strategies, Inc. (JSS) has partnered with GSF and other multiple local gang units to develop Intelligence-Led Policing through using mobile GIS and spatial analysis to link and address gang activities across multiple local jurisdictional boundaries.

3:30 p.m. – 5:00 p.m.

Spatial Analysis & Hotspots

Concerto D Meeting Room

- **Understanding Hotspots of Crime Using Geographically Weighted Regression**

  Spencer Chainey, *Director of Geographical Information Science, University College London, Jill Dando Institute of Security and Crime Science*

  In recent years, a number of techniques have been developed and evaluated for their ability to identify crime hotspots. These techniques include kernel density estimation, Gi* and prospective mapping. These techniques are useful for identifying where crime concentrates, but then leave the analyst to try to figure out for themselves why crime concentrates at these locations. In this presentation, we illustrate the use of Geographical Weighted Regression (GWR) to test and identify the variables that help to explain why hotspots exist. We argue that this provides a useful step forward in helping analysts to interpret geographical patterns of crime.

- **An Alternative Approach to Hotspot Analysis: How to Identify, Understand and Reduce Statistically Significant Clusters of Crime Across London with Getis-Ord Gi* Statistics**

  Christine Leist, *Geographical Analyst, Metropolitan Police Service London (Scotland Yard)*

  This presentation demonstrates how Gi* statistics have been implemented at Scotland Yard's central intelligence to complement conventional hotspotting techniques. When hotspotting 840,000 crimes across an area of 600 sq. miles, kernel density surfaces can appear overwhelming and focus attention on the biggest, most dominant hotspots. Gi* statistics have helped substantially in confirming the statistical significance of hotspots as well as highlighting small localized hotspots that might go unnoticed on a density surface. The presentation demonstrates a complete analytical cycle from identifying, categorizing, and prioritizing hotspots, to monitoring changes and successful tactical intervention using Gi* alongside KDE.

- **Risk Cluster, Hotspots, and Spatial Intelligence: Risk Terrains Modeling as an Algorithm for Police Resource Allocation Strategies**

  Eric Piza, *GIS Specialist, Newark Police Department*

  This project utilized Risk Terrain Modeling (RTM) to forecast future shooting locations in Newark, NJ. The researchers constructed four separate models comprising various risk variables. The highest performing model, which included the most statistically significant variables, accurately predicted as many as 84% of shooting locations over the one-year study period. Retrospective hotspot maps predicted only as much as 53%. The implications for police resource allocation and the crime analysis function are discussed.

3:30 p.m. – 5:00 p.m.

Other Topics

Tenor Meeting Room

- **Implementing the Rhode Island Community Supervision Mapping System: Practical Applications from Real-Life Experience**

  Jim Lucht, *Information Group Director, The Providence Plan*

  The Providence Plan has developed a geospatial application designed to help corrections, public safety, and social service agencies better supervise and assist returning prisoners. This web-based tool enables users to conduct specialized queries of the locations of released prisoners, map those results at the address level, and then overlay the results with additional spatially-enabled datasets, such as support services for former prisoners. This presentation will outline successes and lessons learned around development and implementation. It will also cover how the tool is aiding probation, law enforcement, and discharge planning practice in Rhode Island.

- **Data Mining and Risk Forecasting in Web-Based Analysis Tools**

  Jeremy Heffner, *Product Manager, Azavea Inc.*

  Under a grant from the National Science Foundation, Azavea is working with faculty at Temple and Rutgers Universities to implement a series of web-based extensions to its HunchLab crime analysis and mapping software to support risk forecasting capabilities. The initial target of this research has been the optimization and web implementation of the near repeat pattern, with additional forecasting approaches to be added over the next six months. The presentation will outline the specific forecasting techniques being implemented and discuss the challenges encountered when attempting to implement these features in a web application.

- **Public Information Provision: Are Crime Maps Having a Positive Impact on Community Reassurance?**

  Lisa Tompson, *Research Fellow, University College London, Jill Dando Institute of Security and Crime Science*

  The publication of online crime maps has been a popular policy shift in both the U.S. and the UK in recent years. Providing citizens with crime statistics has many anticipated benefits; one, of which, is that it provides a positive reassurance message to the public. This presentation draws together the collective UK experience of the impact that these online crime maps have had on communities, and it considers the strength of this evidence for influencing policy decisions at the national level.

NOTES

Steven Armon is a Sergeant with the Dallas Police Department and the Supervisor of the COMPSTAT/Crime Analysis Unit. He has been with the Department for 15 years. He has a degree in Criminology and Criminal Justice from the University of Texas at Arlington.

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Ellie Bates is a full-time 3rd year Criminology Ph.D. student at the University of Edinburgh in Scotland. Her current research explores the place and time dynamics of vandalism seeking to understand why some areas experience consistently high levels of vandalism and others are consistently lower. She recently completed an MSc in Geographic Information Science & Society with distinction where her dissertation examined the relationship between changes in levels of criminal damage and alcohol availability following a change in licensing laws in England and Wales. Prior to returning to full-time study, her previous career has involved various roles in local government and the not-for-profit sector. Most recently she has worked in various research officer roles local government in Northern England working as a analyst for with local Community Safety Partnerships, a Drug Action Team and Housing Strategy policy officers. Her research interests include vandalism, especially the importance of place context, Exploratory Spatial Data Analysis, crime mapping, and knowledge transfer.

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Jonas H. Baughman is a sworn law enforcement officer with the Kansas City, Missouri, Police Department (KCPD). He has held positions across all strata of the KCPD, including assignments in patrol, investigations, and administrative capacities since joining the organization in November, 2003. His current assignment is that of Detective within the KCPD's Violent Crimes Division - Special Victims Unit. Prior to being appointed Detective, he worked as a crime/GIS analyst within the Professional Standards Division - CSTAR Unit for a total of four years. CSTAR (an acronym for Comprehensive Strategic Team Accountability Review) is the KCPD's adaptation of the New York Police Department's famous CompStat policing program.

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Eric P. Baumer is the Allen E. Liska Professor of Criminology at Florida State University. His research focuses on temporal and spatial dimensions of crime and justice, and especially how structural and cultural features of communities affect crime, social control, and other aspects of human behavior. He has examined these issues empirically in multi-level studies of the influence of community characteristics on individual attitudes and behaviors, macro-level studies of spatial and temporal patterns in crime and social control, and in case studies of crime and justice in Iceland, Malta, and Ireland. Recent publications have appeared in *Criminology*, *American Sociological Review*, and the *American Journal of Sociology*.

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Brandon Behlendorf is a Researcher at the National Consortium for the Study of Terrorism and Responses to Terrorism, where he applies quantitative geospatial modeling to terrorist targeting strategies. He is also a doctoral student in Criminology at the University of Maryland, where he focuses on neighborhood patterns of crime and victimization within developing countries. Previously, he was a researcher with the Ohio Department of Public Safety, where he coordinated a multi-agency evaluation of a commercial vehicle diversion program and assisted in the creation of risk management programs and assessments for the Ohio State Highway Patrol. He has a B.A. from University of California San Diego, and a M.A. from Ohio State University.

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Richard Block, Professor Emeritus of Sociology at Loyola University Chicago, has been studying the relationship between crime and community for the last 35 years. His first study of the geographic distribution of crime was published in 1977. He is widely recognized for his work in the development of geographic information systems for crime analysis and database management. He participated in the development of the ICAM computer mapping facility of the Chicago Police Department (now CLEAR) and has advised many other departments on computer mapping and the spatial analysis of crime patterns. His current research includes the characteristics of space and place, such as rapid transit stations and specific housing complexes, that lead to changes in crime risk, discrete choice analysis of offender decisions, and the development and testing of the CrimeStat spatial statistics toolbox. He is a regular lecturer on the use of GIS and spatial statistics for crime analysis and has given lectures and classes to the National Institute of Justice summer program at ICPSR, the International Association of Crime Analysts, The Home Office in London, The Merseyside/Liverpool Police, The Justice Research and Statistics Association, The Swedish National Police Academy, and at universities throughout the world. He has been a presenter at all ten Crime Mapping Research Conferences.

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Peter Branca has been a police officer since 1989, having worked in General Policing, Traffic Operations, Fingerprints and Crime Intelligence. Since 1995, he mainly worked in the field of intelligence, focusing on the use of GIS and crime mapping. In 1997, he was the recipient of a police scholarship, where he travelled to the UK, Canada, and the U.S.A. to investigate the use of GIS technology for law enforcement purposes. He has delivered crime mapping courses for policing and also helped develop various mapping software programs. He has written numerous journal articles on the subject of crime mapping and analysis. From 2006-2008, he worked on assignment with the Australian Federal Police as a senior Intelligence Analyst in Solomon Islands. His role involved developing a GIS in support of security for the Regional Assistance Mission to Solomon Islands (RAMSI). Peter has a Diploma of Social Science (Justice Studies) and Master of Applied Science in (Geospatial Information). He is an Adjunct Lecturer with Charles Sturt University where he teaches intelligence and crime mapping subjects. He recently commenced work on his Ph.D. (at Melbourne University), where he is focusing on spatially enabling law enforcement organizations.

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Gregory Breetzke is a geographic information systems (GIS) lecturer in the Department of Geography at the University of Canterbury in Christchurch, New Zealand. Breetzke's formal education includes a BSocSci at the University of Pretoria in South Africa and an MSc degree cum laude in GIS from the Vrije Universiteit Amsterdam (VU) in The Netherlands. Breetzke received his Ph.D. at the University of Pretoria in 2008, with a specialization in geodemographic offender profiling. He is a member of the American Society of Criminology (ASC), a committee member of the New Zealand Geographical Society and the current Chair of the proposed Crime Mapping Working Group of the International Cartographic Association (ICA). His research interests lie in the development, and use of, quantitative geo-analytic techniques for synthesizing and understanding crime activity. Additional interests lie in developing ways to optimize and correlate the output of geospatial analyses with the needs of police and their communities. Breetzke has been quoted frequently in magazines and newspapers both in South Africa, and New Zealand; and has given numerous presentations of his work at academic conferences and symposia around the world. Breetzke has published in a range of peer reviewed journals and has won a number of awards for his work including a prize at the International Emerald Literati Network Awards for a paper published in Policing: An International Journal of Policing Strategies and Management. He has previously consulted with the Crime Intelligence Division of the South African Police Services (SAPS) where he conducted conventional crime pattern analysis for the police as well as local communities. Since arriving in New Zealand in February 2009 Breetzke has forged a working relationship with New Zealand Police both locally (in Christchurch) and nationally.

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Christopher W. Bruce started his Crime Analysis career at the Cambridge (MA) Police Department Crime Analysis Unit in 1994, and moved to the Danvers (MA) Police Department in 2001. He became President of the International Association of Crime Analysts (IACA) in 2007, after serving six years as Vice President of Administration. He was also President of the Massachusetts Association of Crime Analysts (MACA) between 2000 and 2004. He served as the senior editor for the IACA's 2004 publication, *Exploring Crime Analysis*. His other publications include *Better Policing with Microsoft Office 2007* (2009, with Mark Stallo) and *Crime Analysis with CrimeStat* (2008, with Susan Smith).

Bruce frequently teaches spatial statistics and crime mapping, as well as other crime analysis topics, at various venues in the U.S. and other countries. He has lectured at 14 IACA, 13 MACA , and many other regional crime analysis conferences. He has taught crime mapping and analysis for the Crime Mapping and Analysis Program (CMAP), and he is a lecturer for Suffolk University, Tiffin University, the University of Massachusetts at Lowell, and Westfield State College.

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Andy Brumwell is a Geo-spatial Intelligence Analyst at West Midlands Police, UK's second largest Police Force, covering a population of approximately 2.6 million residents. He has responsibility for supporting the Force in the analysis of spatial data for strategic and tactical purposes.

Brumwell is responsible for supporting and training analysts and Police officers in the use of crime mapping and geo-spatial intelligence analysis techniques. This involves running software training and awareness raising courses for both intelligence analysts and decision makers at the local policing unit (LPU) level and for the larger force central departments, such as Intelligence and Operations. He is also very interested in the use of multi-agency partnership data and developing close working relationships with the 7 Community Safety Partnerships that cover the West Midlands area.

Brumwell is vice-chair of the UK Crime Mapping Conference steering group and also vice-chair of the Association for Geographic Information (AGI) Crime & Disorder special interest group. He has been a regular speaker at UK crime mapping conferences, presented at a number of previous NIJ International Crime Mapping Research Conferences, and won two awards at the ninth conference in Pittsburgh. He has contributed to a number of crime mapping and analysis publications, including the POP Centre Guide *Crime Analysis for Problem Solvers – 60 Steps* and recently the UK NPIA guide for crime analysts *Analysis of Geographic Information – Workbook*.

He has a B.S. (Hons) Geography Degree (University of Birmingham, UK) and a post-graduate certificate in Crime Prevention and Community Safety at the Jill Dando Institute for Crime Science, University College London (UCL), UK. He is currently working towards his accreditation as a geographic profiling analyst.

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Joel M. Caplan is an Assistant Professor at the Rutgers University School of Criminal Justice and Associate Director of the Rutgers Center on Public Security. He specializes in spatial analysis and advises many public safety agencies on how to use GIS for strategic decision-making and evidence-based practices. Caplan's work has been disseminated in books, peer-reviewed journal articles, and at national and international conferences. His recent books include: *GIS for Public Safety: An Annotated Guide to ArcGIS Tools and Procedures* and *Risk Terrain Modeling Manual* (with Leslie W. Kennedy), which presents the conceptual and technical steps of spatial risk assessment and is a follow-up to a related publication in *Justice Quarterly* entitled, "Risk terrain modeling: Brokering criminological theory and GIS methods for crime forecasting." A recent related article entitled "Risk clusters, hotspots, and spatial intelligence: Risk Terrain Modeling as an Algorithm for Police Resource Allocation Strategies" is currently in press with the *Journal of Quantitative Criminology*. In addition to his academic accomplishments, he has professional experience as a police officer, 911 dispatcher, and EMT.

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Tom Casady has served Lincoln as Chief of Police since January, 1994. Casady began his law enforcement career as a Lincoln police officer in 1974. He heads an agency of 421 employees serving a city of 255,000. He also served as the Sheriff of Lancaster County prior to his appointment as Chief of Police. He received a Bachelor's degree in criminal justice from the University of Nebraska-Omaha, and a Master of Arts degree in political science from the University of Nebraska-Lincoln. Casady is a lifetime member of the International Association of Chiefs of Police, and a member of the International Association of Crime Analysts and Police Executive Research Forum. Casady has coordinated several police technology projects, focusing on communications, information systems, mobile data, and geographic information systems. In recent years, he has been particularly involved in the fields of crime analysis and crime mapping, and has been a frequent presenter at national and international conferences on these topics.

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Spencer Chainey is Director of Geographical Information Science at the UCL Jill Dando Institute of Security and Crime Science. His particular research interests are in developing geographical crime analysis and crime mapping. These activities are carried out alongside improving the use of data, information sharing and analysis to aid intelligence development, problem solving and decision-making by police forces, community safety partnerships, national crime reduction, and policing agencies. His work has influenced national (UK) policy, and has contributed to policing and crime reduction developments in the U.S.A, Canada, Brazil, Australia, New Zealand and South Africa. His work is also used as examples of good practice by the UK Cabinet Office (Social Exclusion Unit), Local Government Improvement and Development, The Home Office, the Audit Commission, The Housing Corporation and the United States National Institute of Justice.

Prior to joining UCL, Chainey spent several years working in the private sector and in local government on Geographical Information Systems (GIS), community safety, information sharing, housing development and regeneration projects (1996-2003). Chainey was Chair of the UK's Association for Geographic Information (AGI) in 2003, chairs the AGI Crime and Disorder Special Interest Group, and is a member of the UK's Association of Chief Police Officers (ACPO) Geographic Information Board. Chainey is also the only UK academic who is a certified Geographic Profiling Analyst.

His work is much published and includes the Home Office publications *Crime Mapping: Improving Performance*, *A Review of GIS-Based Information Sharing Systems*, and the national guidance on *Information Sharing for Community Safety*, the ACPO and National Policing Improvement Agency's Workbook on the Analysis of Geographic Information, the U.S. National Institute of Justice booklet *Understanding Hotspots*, and his definitive book on *GIS and Crime Mapping*, co-authored with Jerry Ratcliffe.

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Dawn Clausius is currently a Police Intelligence Analyst with the Olathe Kansas Police Department. She has been with the department for five years and started their Crime Analysis Unit. Prior to that, she was a commissioned police officer for nine years and served in many areas of her department including: Field Training Officer, Crime Prevention Officer, Search Warrant Team, and Police Academy E.V.O.C. Instructor. Clausius is currently the Secretary of the International Association of Crime Analysts (IACA), the President of the Mid-America Regional Crime Analysis Network (M.A.R.C.A.N.), and is a current instructor for the IACA Training Series.

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John Cryer is currently assigned as a Detective/Analyst in the Research and Development Unit of the Washoe County Sheriff's Office in Reno, NV. In his 21 year career with the Sheriff's Office, he has worked assignments in the Detention/Courts Bureau; Patrol; Gang Enforcement, Investigations and Intelligence; Property, Financial, and Robbery/Homicide investigations in the Detective Division; and Criminal Intelligence and Public Integrity investigations while assigned to the Administration Division.

Cryer has received training in crime and criminal intelligence analysis with the Rocky Mountain Information Network; Anacapa Sciences, Inc.; The Alpha Group Center; The National White Collar Crime Center; the Federal Law Enforcement Training Center; i2, Inc.; and Bair Software.

Cryer is a graduate of the University of Nevada, Reno and prior to entering into law enforcement served in the US Army, Army Reserve and National Guard to include tours as a Battalion Intelligence Officer and separate command tours in Infantry and Military Police Companies.

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Andrew Curtis is in the Department of American Studies and Ethnicity (and formally in the Department of Geography before it closed) at the University of Southern California. Prior to this, he was Director of the World Health Organization's Collaborating Center for Remote Sensing and GIS for Public Health at Louisiana State University. His research interests are centered around the geography of health, with a particular emphasis on spatial analysis, GIS and geospatial technology. His work includes analyzing spatial patterns of disease, developing new methods of fine-scale (neighborhood) geospatial data collection, using GIS to help reduce health disparities, and supporting community mapping efforts. In 2005 after the landfall of Hurricane Katrina, he and his WHOCC lab helped with geospatial support for search and rescue operations in the Louisiana Emergency Operation Center. He continues to work on various Katrina recovery projects, and in 2007 was part of a team receiving the Meredith F. Burrill Award by the Association of American Geographers for the development of a Katrina-related GIS Clearinghouse Cooperative. His work has been showcased by the New York Times at *http://www.nytimes.com/interactive/2010/08/27/us/lower9th-5year-anniversary.html* He has also been analyzing crime patterns in New Orleans at the neighborhood scale for the last three years because of the impediment they pose to recovery.

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Andrew Dukes has worked as a Crime Analyst for the Colorado Springs Police Department for nearly a decade. Dukes has Bachelor's degrees in Psychology and Geography and a Master's degree in Applied Geography from the University of Colorado at Colorado Springs.

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Jerry East is the Crime Analyst for the Columbia, Missouri, Police Department. He has been with the department since April of 2010. Prior to being hired as the Crime Analyst, East had worked in the GIS and civil engineering field for 17 years. Nine of those years were with the City of Columbia Department of Public Works collecting and analyzing GIS data of the various infrastructure and services provided and maintained by the department. He holds a BES with areas of emphasis in Mathematics and Computer Science from the University of Missouri - Columbia.

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Safa Egilmez has a Bachelor's degree in Criminal Justice and Biology and Master's degree in Criminalistics from California State University Los Angeles. He started his law enforcement career working for the MTA Office of Inspector General. He then shifted his focus to Crime Analysis and changed his employment to Los Angeles County Sheriff's Department, CA. During his employment with LASD, he concentrated his efforts on crime mapping and attended the Rio Hondo College CMAP training. After the initial training, he continued on Geographic Information Systems training at CSU Northridge and obtained his Certificate in GIS Analysis.

In 2002, Mr. Egilmez was hired by the Santa Monica Police Department, CA. One of his first tasks was to establish Crime Mapping at SMPD. During his career at SMPD, he had designed the Citywide Graffiti abatement program which was designed to track graffiti incidents utilizing GPS equipped cameras and analyze the distribution of the tagging. He also conducted the Patrol Workload Analysis and assisted in the new Patrol Deployment Plan to balance the workload and improve the policing efforts.

In 2008, Mr. Egilmez was hired by Henderson Police Department, NV. He created a daily scheduled process using Python scripting to automate daily CFS and records management data to pull from the departments systems and geocode the data to display in GIS systems. He also created numerous Crystal Reports that run automatically and send messages to appropriate staff to be utilized in daily operations. These reports are being utilized to help the command staff and patrol supervisors. The reports are being used daily by the Community Resources Unit along with the GIS maps to look for problem tenants at the multi-housing units throughout the city to prevent further crimes in these locations and arrest/remove problem tenants.

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Benjamin Estep is a Research Associate in the Center on Youth Justice. He joined Vera in January 2007 as an information management associate. Previously Estep worked on policy and sociological research at the Center for Economic Progress and at the Sloan Center on Parents, Children & Work, both in Chicago. At Vera, he has worked to develop, compile, and analyze juvenile justice system indicators in several jurisdictions. It has also helped formulate and field test measures of the rule of law internationally and provided research support to Governor Paterson's Task Force on Transforming Juvenile Justice in New York State. He earned his BA in sociology at the University of Chicago and his MSc in philosophy and public policy from the London School of Economics.

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Ann Fulmer, is an internationally recognized mortgage fraud expert, thought leader and speaker. Fulmer has been widely quoted in publications, including the New York Times and the Washington Post, and has appeared on national news programs, including ABC News, CNN, and the Fox Business Channel. She testified about mortgage fraud's role in the financial crisis before the Financial Crisis Inquiry Commission, is co-author of the quarterly Interthinx Mortgage Fraud Risk Report, the author of a monthly column for Mortgage Banking magazine and of numerous articles for other mortgage banking publications. Fulmer is Vice President of Business Relations, Interthinx, and currently resides in Atlanta, Georgia.

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Stephen V. Gies, is a research manager with significant experience in evaluation design, database development, and data analysis. Currently, he is the Principal Investigator for two National Institute of Justice (NIJ)–funded evaluations of the California Department of Corrections and Rehabilitation's program for monitoring parolees with global positioning system (GPS) technology. The first study examines the use of GPS supervision with sex offenders; the second examines gang members. Gies is also conducting an NIJ–funded evaluation of the Girls Circle program in Chicago, IL, and recently completed a project funded by the U.S. Department of Health and Human Services' Administration for Children and Families to evaluate the Boys Town Healthy Choices program. In addition, he is a key member of the DSG research team on the recently completed NIJ–funded evaluations of the Boys Town Girls' Short-Term Shelter Program and San Francisco's SAGE project, a commercial sexual exploitation intervention program. Gies has significant experience in juvenile justice programming. He conducted a Gap Analysis that was used to develop a Facilities Master Plan for the Maryland Department of Juvenile Services (DJS). He served as senior research analyst for the Northern Virginia Regional Gang Task Force study that examined gang member characteristics, level of gang activity, and volume of gang membership in that region. Gies is also deputy project director and principal designer of the OJJDP Model Programs Guide, a Web-based system of more than 200 evidence-based programs used by states and communities to locate scientifically proven, evidence-based model programs.

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Jim Gilmer serves as Chief of Crime Research and Analysis in the Office of Justice Research and Performance at the NYS Division of Criminal Justice Services, where he has worked for more than 20 years. At DCJS he oversees projects in a variety of areas, including: domestic violence, juvenile justice, and sex offender risk assessment, as well as the analysis of crime patterns. In 2009, he was appointed Director of Research on temporary assignment to the Governor's Task Force on Police-on-Police Shootings. Gilmer's focal interests include analyzing and understanding temporal and spatial relationships between crime and offending patterns. A graduate of the University of Notre Dame, he holds a Master's degree in criminal justice from the University of Albany School of Criminal Justice, where he was a doctoral candidate prior to joining DCJS. He also serves on the New York State GIS Coordinating Body and teaches courses in crime mapping and crime science at the College of Saint Rose.

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Jennifer Godown has been working as a crime analyst with the Fairfax County Police Department for the past two years, where she has developed an advanced knowledge of mapping cell phone and GPS data to assist in surveillance and criminal investigations. She often provides critical analysis for the Northern Virginia Gang Task Force, and District Station Commanders rely upon her weekly reports of trends in criminal activity in the surrounding jurisdictions. Recently, she spoke at the Virginia Crime Analysis Network's Fall Symposium, joining a panel on the issue of implementing crime analysis units in agencies of various sizes. Prior to joining the Fairfax County PD, Godown spent four years at the National Center for Missing and Exploited Children, where she aided in the successful recovery of hundreds of missing juveniles. She is a graduate of Clarion University with a degree in Communications and a minor in Political Science. During her time at Clarion, she completed an internship at America's Most Wanted. Jennifer is a member of the Virginia Crime Analysis Network, the International Association of Crime Analysts, and the International Association of Law Enforcement Intelligence Analysts.

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Gus Gonzalez currently serves as a Senior Systems Analyst in the Miami-Dade Police Department's (MDPD) Information Technology Services Bureau. Gonzalez received his Bachelor's degree in Computer Information Systems from the University of Miami and went on to obtain a Masters in Business Administration from Florida International University. He has been employed with MDPD for over twenty years and has collaborated on varied IT projects with both uniform and investigative functions of the Department. Throughout his career, Gonzalez has specialized his area of expertise in investigative applications, data warehousing, and more recently geographic information systems. He also serves as a subject matter expert in the area of offense-incident reporting and the associated business process of records management and information flow. Gonzalez has worked various roles in information technology projects functioning as a lead analyst, applications developer, database architect, and systems integrator. His future objectives are to constantly strive to bring all MDPD investigative units to the forefront in intelligence gathering technology and analysis, with particular emphasis on spatial analysis. By extending the accessibility of timely criminal intelligence information to the officer on the street, it furnishes him with robust tools required to facilitate his job. Improving the community's safety, is what we, as law enforcement IT professionals, should be committed to achieving.

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Elizabeth Groff is an Assistant Professor in the Department of Criminal Justice at Temple University. She is the 2008 recipient of the Academy of Experimental Criminology's Young Experimental Scholar Award. Groff's research interests include the following: the relationship between place and crime; human spatio-temporal behavior and the function of the urban backcloth in shaping it; crime prevention strategies and the role of technology in police organizations and in practice; and the development and application of innovative methodologies using geographic information systems, agent-based simulation models, and randomized experiments. Groff holds a Ph.D. in Geography from the University of Maryland, College Park.

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Leitner has published two co-authored books, one tri-edited book, one multi-edited special report for the U.S. National Institute of Justice, one co-edited volume for CaGIS, with a second co-edited volume forthcoming in *The Professional Geographer*, 22 peer-reviewed articles, nine refereed conference proceedings, seven refereed book chapters, and 25 abstract-reviewed conference proceedings.

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Mashford holds a Bachelor of Applied Science (Cartography) and a Graduate Diploma (Spatial Information Science)(Hons), and was also one of the first persons in Australia to achieve the qualification of 'MapInfo Certified Professional'. He has worked as an intelligence analyst at Victoria Police since 2004, and also held the role of Course Coordinator in Crime Mapping at Charles Sturt University during 2006-2007. In 2009, Mashford spent 12 months working in Vietnam as part of the Australian Youth Ambassadors for Development program, where he got to apply his skills to landscape ecology at the Vietnamese Institute of Geography.

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For the past 19 years, Meade has also maintained his training and currency as a Police Explosives Technician with experience in Improvised Explosive Devices, Post Blast Scene Investigation, Electronics, Industrial Radiography, as well as Chemical, Biological, Radiological and Nuclear (CBRN) response. David is a past president of the Canadian Explosives Technicians Association (CETA) and current member of International Association of Bomb Technicians and Investigators (IABTI).

In 2009, he was appointed as officer in charge of the Investigative Analysis Unit where he currently supervises the service's District /Violent Crime Analysts and provides support to the Major Case Management Software application PowerCase.

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Mills is a recipient of the Association of American Geographers (AAG) Meredith F. Burrill Award. This award honors individuals or groups that have completed work of exceptional merit and quality that lies at or near the intersection of basic research in geography on the one hand, and practical applications or policy implications on the other. She has also been selected as a Faculty Fellow in the Center for Behavioral Research and Services at CSULB and has received an award from the university's Ukleja Center for Ethical Leadership for her work on teaching ethics in Geographic Information Science (GISc). These honors are indicative of the linkage between research and application in Mills' work and of her commitment to utilizing GIS technology and spatial analysis to solve real-world problems.

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Putt also is working on a Mapping Research Project funded by the Miami-Dade Children's Trust to better understand neighborhood and youth violence in Miami-Dade through the use of Geographic Information Systems (GIS). In this project, she assists in the collection and analysis of spatial data related to demographics, violence, youth, health indicators, and neighborhoods.

Putt has worked with the Project Safe Neighborhoods initiative in South Florida and the Virgin Islands providing assistance with data analysis and GIS mapping. She holds undergraduate degrees in Family Studies and Criminal Justice from the University of Maryland.

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As a lecturer in policing (intelligence) with Charles Sturt University (Australia), he ran graduate programs in criminal intelligence and coordinated Australia's National Strategic Intelligence Course. While a senior research analyst with the Australian Institute of Criminology, he conducted one of the first evaluations of an intelligence-led policing operation. Ratcliffe has twice been awarded the Professional Service Award for outstanding contributions to criminal intelligence analysis by IALEIA, and in 2010 he was awarded the Distinguished Service Award by the Association of Law Enforcement Intelligence Units (LEIU).

Throughout 2009, he was the lead researcher on the Philadelphia Foot Patrol Experiment, a randomized controlled trial of the impact of foot patrol in violent crime hotspots, a study involving over 200 Philadelphia Police officers. He has published over 50 research articles and four books: *Intelligence-Led Policing* (Willan, 2008); *Strategic Thinking in Criminal Intelligence* (Federation Press, 2004 and 2009); *GIS and Crime Mapping* (Wiley, 2005) and *Policing Illegal Drug Markets* (Criminal Justice Press, 2005).

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In the fall of 2008, Roberts left the HIDTA in Texas and became a Crime Analyst with the Durham Police Department in North Carolina where her focus changed to working less on long-term investigations and more to dealing with crime patterns and trends. Currently, she is assigned to a district in the city of Durham and is responsible for reviewing and analyzing all crime types that occur in the district and drawing conclusions about the correlations between any crimes that occur and assisting management, investigators and patrol alike with strategic, tactical and operational analysis.

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Lisa Tompson started her professional life as a Police Crime Intelligence Analyst after graduating from Keele University with a BA(Hons) in Criminology. She then went on to study an MSc Crime Science at the UCL Jill Dando Institute. Making a leap over to academia, Lisa joined the JDI as a Research Fellow in 2006. Her main passion is developing the Crime Analysis profession, and as such, relishes training analytical skills to practitioners. Lisa has also delivered the MSc module in Spatial Analysis for two consecutive years; with a number of her students obtaining jobs which utilize their new GIS skills. Her research often relates to policies and processes which underpin intelligence-led policing and crime analysis and she has enjoyed working with numerous agencies in the UK to help progress this agenda. She is currently undertaking a part-time Ph.D. which is exploring the temporal dynamics of the routine activity approach.

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He has presented papers or organized sessions at a number of national and international conferences such as the 5th International Conference on Population Geographies and annual meetings of the Association of American Geographers (AAG). Particularly, Zhang has given several invited presentations at the 8th and 10th Crime Mapping Research Conferences and the Race, Ethnicity and Place IV and V Conferences. His publications have appeared in a number of peer-reviewed journals such as the International *Journal of Applied Geospatial Research*, *Geographical Research* (China), *Journal of Geography*, S*outheastern Geographer*, and *Internet Journal of Criminology* (UK). He has also served as a manuscript reviewer for a number of academic journals such as *Urban Studies (*UK) and *Chinese Geographical Science*.

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