Massachusetts Association of Crime Analysts
2018 Training Conference Presentation Abstracts

Monday

1100-1300 **Fundamentals of Crime Analysis**
Erika Baburins, Mansfield Police Department and Casey Hatchett, Brookline Police Department
New to the field? Seasoned analyst wanting to brush up on your skills? Recently assigned to "set up a new unit"? Get ready for a crash course on the fundamentals of crime analysis! This workshop will start from square one and touch on all of the highlights of what you need to know - from tactical to strategic, administrative to problem-solving, crime mapping to operations analysis, manipulating databases and more! Bring a sponge...you'll want it to soak in this presentation!

1400-1600 **Introduction to Access**
Nicholas Roy, Rindge NH Police Department
Microsoft Access has been around for decades and still bear much relevance in the law enforcement world. With the capability it offers, it should be one of the go to software programs for analysts and law enforcement personnel looking to mine their agency's data. We will review the concepts of Access and try to breakdown any fears in relation to the program itself. We will go over tables, queries, forms and reports, connectivity to other data sources (more specifically your RMS and CAD systems) and how you can build your own. This will be more of a watch and learn class to get the gist of Access' abilities and applications for law enforcement agencies.

0900-0930 **Opening Remarks: Lieutenant Glen Mills, MACA President**

0930-1045 *Chicago at a Crossroads: The role Civilian Crime Analysts Played in Helping Pull the City from the Brink -* **Roseanna Ander, University of Chicago Crime Lab**

In January of 2017, following an unprecedented one year increase of nearly 60 percent in homicides and shootings, Ander worked with the Chicago Police Department to introduce for the first time, the use of civilian crime analysts as part of the Strategic Decision Support Center (SDSC) initially launched in the city's two most violent police districts. The SDSC model has since been expanded to 13 of the city's 22 police districts and Ander the University of Chicago Crime Lab continue to partner with the Chicago Police Department to provide civilian crime analysts and with the broader implementation and evaluation of the SDSC model.

1100-1200 **Case Studies: When Crime Analysis is Critical in Solving Crimes -** Freidich "Sam" Steiner, Austrian Federal Police

This presentation will cover the organization of crime analysis in Austria and a general overview of the Austrian law enforcement and judicial systems, as well as, challenges in preparing evidence for trial. The presentation will discuss key cases where crime analysis was critical to solving the crimes including:
Case 1: Kidnapping and rape
Case 2: Damage of cell towers
Case 3: Series of street robberies
Case 4: Drug trafficking
Case 5: Truck tachograph manipulation

Case of Place: Reorganizing a Police Department to Improve Crime Problem Solving - Robin Smith, Lowell Police Department

In 2014 the Lowell Police Department (LPD) introduced a department reorganization, designed to improve crime and disorder problem solving. The reorganization included a number of strategic and operational changes, including increasing supervision, decentralizing crime analysis, creating District Response Teams, and revamping Compstat. Additionally, the LPD adopted a promising practice for addressing place-based crime and disorder issues. This "case of place" approach directs patrol officers, crime analysts and others to collaborate on investigating problem locations to implement tailored interventions.
This session will include a discussion of the LPD's reorganization, the challenges encountered in the reorganization, and the positive, yet preliminary outcomes associated with these organizational changes, including the enhanced role of crime analysts in working directly with officers and street supervisors.

Statistics and Excel - Lauren Mondshein, Everett Police Department

For those of us who don't like math and/or statistics, the "analysis" part of crime analysis can sometimes be a daunting and overwhelming task. With so many methods available to analyze a single data set, choosing the most appropriate test isn't always the easiest task, especially when it feels like statistic learning materials are written in Sanskrit. Rather than twist yourself into a statistically inspired yoga pose, come join this review of statistical concepts, spoken in pure, unadulterated English. We'll start by covering basic concepts of averages, standard deviations, Z scores, distributions, and other descriptive methods, and progress into different kinds of statistical analyses such as T-tests, correlations, and ANOVA's, when it's appropriate to use them, common pitfalls, and how to interpret them. Further, we will go through tips and tricks on how to use these methods in MS Excel; all the practical knowledge you will need to be well on your way to becoming a statistical mastermind!

1330-1500 *Open Source Intelligence and Social Media Best Practices*- **FBI Boston Field Office**

Facebook, Snapchat, and Twitter – oh my! In this presentation, we'll talk about social media trends (and how they could affect law enforcement), how to practice good online personal security (PERSEC), and examining real world consequences of poor social media choices.

1515-1630 **The Opiate Crisis -** Jim Cormier and Margaret Hester, New England HIDTA; Chief Allen and Chief Bottieri, Plymouth County Outreach

Our presentation will explain the High Intensity Drug Trafficking Area (HIDTA) program and the Heroin Response Strategy (HRS). The HRS is a multi-state program with the intent of reducing opiate related deaths. We will go over current drug trends and drug trafficking modes. We will also discuss the role a public health/public safety collaboration might look, and discuss challenges and benefits to this collaboration. Members of the Plymouth County Outreach (PCO) will go over their county's efforts at sharing overdose information and providing outreach in an attempt to stem the overdose deaths in that county.

Applied Critical Thinking for Analysts - Bradley GoodHale, Rutland City, VT Police Department

Applied Critical Thinking (Red Teaming) for Analysts.
Short introduction to Applied Critical Thinking based on my experience at the US Army Red Teaming course, University of Foreign Military and Cultural Studies Ft Leavenworth KS.
Applied Critical Thinking: Support for planning and decision making--deconstructing arguments, examining analogies, challenging assumptions and exploring alternatives.
Fostering Cultural Empathy: Developing better questions about culture, in order to facilitate strategic and operational decision making which is informed by cultural empathy.
Self Awareness and Reflection: Understanding how our values and beliefs affect how we think and decide…and how that differs for others.
Decision Support and Groupthink Mitigation: The challenges inherent in hierarchical environments, elite teams that value relationships more than the decision, high risk work, etc. Remedy – small group techniques, anonymous feedback, liberating structures.
Red Teaming Tools: Frameworks for developing alternative perspectives; Pre-Mortem Analysis, 4 Ways of Seeing, etc.

Spatial and Temporal Forecasting - Christopher Bruce, IADLEST

There is much that we know and more that we don't know about how to forecast next events in crime patterns, both spatially and temporally. This session draws from several successful case studies to demonstrate how to develop simple models for predicting future events, using common tools like Access and ArcGIS.
To fully participate in the hands-on portion, analysts will need Microsoft Access, Microsoft Excel, and ArcGIS on their computers.

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0900-1030 *The Analyst's Role Toward a Better CompStat* **- Debra Piehl, New York City Police Department**

In the best departments, CompStat is a living, breathing entity through which issues are addressed and best practices are codified. It is the analyst's role to identify trends, patterns and ongoing public safety issues as well as to measure the impact of policing efforts. This session will identify ways in which the analyst can drive the process toward a constructive and life-saving CompStat.

1045-1200 *Challenges in Policing, A Global Perspective* **- Robert Wasserman, Police Consultant**

Robert Wasserman is a longtime police consultant who has worked with police in many cities including New York City, Los Angeles, Oakland, CA and Detroit. He currently works with law enforcement both across the country and internationally and will reflect on effective strategies in leadership, community engagement and building trust.

1330-1500 **Ranking and Managing Intelligence on Top Offenders -** Christopher Bruce, IADLEST

This presentation draws upon the instructor's work at the Cambridge (MA) and Tempe (AZ) Police Departments to develop systems for ranking and prioritizing repeat offenders. The instructor will demonstrate the database developed for the task and the mathematical model that assigns a social harm score to each individual. Further tools provide mechanisms for categorizing and storing intelligence on repeat offenders. The session concludes with a discussion of what agencies can do with such lists, including successful models from several agencies around the country.

Open Source and Social Media Investigations - Boston FBI

Do you want to know how to conduct social media exploitation on subjects? Are your subjects utilizing encrypted messaging apps and you want to know more about what investigative avenues you can take? Do you have no idea what Snapchat is, but want to?
Are you terrified of everything that is out there on the internet about you and your really embarrassing hobby? (You should be.)
This presentation will cover how to conduct open source research, social media exploitation practices, best documentation and legal practices, operational security, and other investigative techniques and tools. You will learn about free resources to conduct due diligence investigations, proactively monitor your areas of responsibility, and how to conduct online investigations safely so that you don't expose yourself, your families, or your departments. There will also be a demonstration of an open source investigative tool available to law enforcement.

NOTE: This presentation is for **law enforcement personnel**. Only full-time sworn officers or civilian analysts employed by a federal, state or local law enforcement agency will be allowed. Unfortunately, due to the sensitive information, no students, interns, academics, private sector or vendors will be permitted.

1515-1630 **Human Trafficking -** Andreas "Olli" Olligschlaeger, Marinus Analytics

Human trafficking is the third fastest growing type of organized crime in the world. In the United States the FBI estimates that one in six teenage runaways are being trafficked. Many victims of sex trafficking are advertised on adult escort sites, with traffickers deploying a number of techniques to obfuscate or otherwise hide the fact that those being advertised are being trafficked and/or are underage. Due to the sheer volume of adult escort ads, it is exceedingly difficult for law enforcement to collect and analyze these data on their own, as they lack the computing infrastructure to do so.

We have been collecting adult escort ads since 2012 and currently harvest over 300,000 ads per day in 18 countries and three continents from eight of the most commonly frequented adult escort and review sites. This figure is increasing monthly as we add more countries and web sites. Our data collection currently includes over 200 million ads, 3.5 million unique phone numbers, 4.3 million unique images and hundreds of thousands of meta data items such as email addresses, social media accounts and personal web sites that are associated with online escorts. This corpus of high quality, spatio-temporal data affords us a unique opportunity to research and provide insight into the world of human sex trafficking.

Working closely with law enforcement practitioners and academia we have developed a variety of machine learning and artificial intelligence-based tools to identify potential sex traffickers and victims, as well as organized crime groups operating at the regional, national or international level.

Examples of our efforts include using natural language processing and machine learning to detect topics such as drugs, underage children and gang related language, identify authors based on language patterns, and the ability to search for ads with similar content. We have deployed robotic vision techniques to extract text from images, developed image classifiers and an image similarity search engine using deep learning, convoluted neural networks. These methods allow us to make text hidden in images searchable, as well as search for images with similar backgrounds and content. Facial recognition allows us to search millions of images for similar faces in seconds. In conjunction with our non-profit and law enforcement partners we have been able to identify and find a number of runaway juveniles that were being trafficked based on a photograph of the juvenile.

This work has made a real difference in practical law enforcement in that it provides investigators with tools that they previously did not have access to, allowing them to be more productive and more accurately identify human traffickers without having to manually sift through vast amounts of data.

Cultivating Success in Mid-Size Police Departments: The Impact of Implementing Predictive Analytic Capabilities - Alexandra Freeman, Rochester, NH, Police Department

This presentation determines the effectiveness of tools for criminal analysis and their accuracy for predictions now and the future. The focus is placed on mid-size departments due to the likelihood of actual implementation of these recommendations along with the largest range of capabilities for analysis. Specific recommendations are crafted to compliment the varying levels of growth in the departments resulting in four categories from nonexistent units to established analytic units. These analytic capabilities of a mid-size police department are best suited when supported by community policing, problem oriented policing, and consistent database maintenance at all stages. The analysts must create tactical products for officers to utilize in the field that go beyond accuracy to provide specific areas of focus to assist in lowering crime rates. Specific tools with predictive capabilities are examined to provide strategic and tactical results with evidence that they assist in decreasing crime. Limitations and ethical dilemmas departments may face are addressed along with ways they can be overcome. With continued funding for crime analysts and increasing trust between law enforcement and the community, mid-size departments that implement predictive analytic tools are likely to see decreases in crime thanks to their proactive efforts.

ArcGIS Online: An Introduction to Web GIS for Crime Analysts - Rachel Weeden, ESRI

The introduction of online geographic information systems has made crime analysis accessible to law enforcement agencies large and small. Local police departments can now map crime density to find patterns and make decisions about resource allocation. In this session, attendees will learn through demonstrations how to bring data into a Web GIS environment, then work through skills like symbolizing data, determining proximity, summarizing data, creating heat maps and more.

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0900-1030 **Responding to the Opioid Epidemic -** *Chief Brandon del Pozo, Burlington Vermont Police Department*

Burlington Vermont, like many cities across the country was struggling to address the opiate crisis facing its community. Chief del Pozo has created and implemented an effective response strategy utilizing data and collaboration as cornerstones of the approach. The focus is on public health, rather than law enforcement, and Chief del Pozo will discuss the successes and struggles of the strategy.

1045-1200

Problem Oriented Policing: How it works for a small agency - Erika Baburins and David Sennott, Mansfield Police Department

For years, the phrase "Mansfield is too small" was used in reference to moving toward a proactive policing model. This is heard all too often, especially in smaller agencies. Mansfield established a Problem Oriented Policing Unit in June 2015, and a couple months later, a Crime Analyst was hired. The focus of these two units was to reduce repeat calls for service and to improve quality of life. Top locations and people were established, and by working through an intelligence cycle, calls for service in a particularly notorious area were reduced dramatically.

The Role of the Crime Analyst in Emergency Preparedness and Response - Casey Hatchett, Brookline Police Department

This session will discuss the various ways in which a crime analyst can support their agency by helping to predict, prevent, prepare for, respond to and recover from manmade and natural threats in their community (with an added focus on active shooter incidents). From mapping critical infrastructure and evacuation routes to preparing bulletins and BOLOs to providing technical support and access to intelligence to working with colleagues in neighboring jurisdictions, the crime analyst should play a role during exceptional emergencies. Personal emergency preparedness tips and situational awareness techniques will also be discussed.

Dashboards Using Excel - John Daigle, Saugus Police Department

Dashboards present data in a much more comprehensive format than static or traditional reports. They can contain graphics, highlight coloring, charts and tables; which make for a much more impactful report or presentation. Even one custom dashboard could meet the needs of multiple users through the use of buttons, linking to the dashboard's interactive charts and tables.

Attendees will be shown several different dashboard designs; as a creative reference to their own ideas. A simple dashboard will be made during the presentation using Microsoft Excel 2010 for Windows (2013 & 2016 will work as well). Attendees are encouraged to bring a laptop with Excel 2010 (or above) to participate. Users without a laptop (containing Excel 2010 or newer) may share or look-on with another attendee. For attendees without access to either, samples of some of the dashboards will be available to download (USB) and to take with them, for later reference.

1330-1500 **From Notepad and Excel to AWS - How a Small Town in Iowa Scaled Data Sharing -** *David Schwindt, Iowa City Police Department*

In 2014, Johnson County began a project to analyze how the chronically homeless used services in our county. With little infrastructure for data collaboration and analysis, we used Notepad and Excel to combine and analyze data from numerous providers. This collaboration resulted in $3.1 million in grants to build a 24-unit Housing First complex in Iowa City and a City on the Cloud Innovation Award from Amazon Web Services.

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Thursday Continued

1515-1630 | **The Analyst's Role in Enhancing School Safety and Security -** Glen Mills, Burlington Police Department

This presentation will help Crime Analysts, School Resource Officers, and School Administrators develop effective safety plans and emergency operations plans to enhance school security. There will be a discussion of school shootings and lessons learned, the probability of these events, sources of data on previous events, training programs to enhance expertise, recommended security upgrades to facilities, police equipment recommendations, things that many jurisdictions forget to address as well as resources to develop an effective all-hazards training, safety and response plan.

Insights for ArcGIS Data Visualization Techniques for Crime Analysts - Rachel Weeden, ESRI

Insights for ArcGIS is a web-based, data analytics workbench where you can explore spatial and non-spatial data, answer questions you didn't know to ask, and quickly deliver powerful results. Use maps, charts, and tables to visualize data, apply advanced spatial analysis with a simple drag-and-drop, and begin telling your story like never before. If you're interested in learning more about Insights for ArcGIS, join this hands-on workshop. Attendees will learn more about the capabilities of Insights for ArcGIS, see demonstrations and scenarios of use cases, and do a self-paced lesson to experience Insights for ArcGIS for themselves.

Friday

930-1030 | **MACA Annual Business Meeting & Raffle**

1030-1200 | **New England's Unsolved: Leveraging Media/Law Enforcement Relationships to Solve Crime - *Bob Ward, Fox 25 News***
Bob Ward will speak about his work as a crime reporter at Boston 25 News and his collaborations with law enforcement to profile unsolved criminal cases in an effort to uncover new information and discover new leads.

1200-1215 | **Closing Remarks**