Marcus A. Boyd, Ph.D.

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Education:

Ph.D., Earth Systems and Geoinformation Sciences   2017
George Mason University
   - Focus Areas: Illicit Finance, Geography of Terrorism, Economic Geography
   - Methodological expertise: Spatial Statistics and Quantitative Geography
   - Dissertation: *Spatial Intersections of Terror Attacks and Illicit Finance*

>   My analyses suggest that there is a mixed relationship between a state's political, economic, and social effectiveness and the number of illicit firms, with some aspects of state functions negatively impacting and others positively impacting their continuation and proliferation. Furthermore, this relationship is uneven across the World Systems schema. Likewise, the relationship differs by the types of firms, with some – drug cartels and state-backed firms – having positive economic impact to the local and state economies. As such, neutralizing these firms will require careful policy creation that includes legitimate economic choices to mitigate the rationales for engaging illicit firms in the first place.

   - Committee: Timothy F. Leslie, David Weisburd, Sven Fuhrmann, Paul L. Delamater

Masters of Arts, Philosophy and Social Policy
               2010
The George Washington University
   - Focus: Social Theory and Urban Policy

Bachelors of Arts, History   2006
Virginia Commonwealth University

Teaching Experience:

CCJS 499: Crime Mapping
Department: Criminology and Criminal Justice
Institution: University of Maryland, Shady Grove Campus
January 2017 – Present

Overview: This class presents an overview of environmental criminology and crime and place theory and literature. The course then focuses on learning ArcGIS and other spatial statistical software to better understand how to employ these methods for criminological research and to understand how law enforcement agencies use these software to determine optimal locations of assets, forecast crime, and trend (hot spot) analysis. Software used in this course includes ArcGIS, CrimeStat IV, and GeoDA.

BSST 399: Geospatial Analysis of Terrorism
Department: Terrorism Minor
Institution: University of Maryland, College Park
April 2014 - Present

Overview: This course is designed as an introduction to how geospatial methods can be applied to terrorism research. The class provides an overview of spatial statistical methods that can be used to identify spatial trends in terrorist activity. The course also provides a brief introduction to either QGIS or ArcGIS and how these tools can be used to visualize and analyze terrorism.

SOC 101: Introduction to Sociology
Department: Sociology, Anthropology, and Criminal Justice
Institution: Montgomery College, Silver Spring/Takoma Park Campus

April 2016 - December 2017
Overview: This course is an introduction to the concepts of sociology. The course overviews all of the major sociological theorists and methodologies to sociological research. The class then focuses on specific topics and issues (i.e. race, class, gender, social problems, stratification, deviance, social interaction). I also include two "case studies" as a deep dive into a topic of interest to the class. These case study topics have included: terrorism, prisons, religion, and institutionalization.

SOCI 355: Social Inequality
Department: Sociology and Anthropology
Institution: George Mason University
January 2014 – May 2014
Overview: This course begins with an overview of social theory before delving into specific topics related to the structure of social inequality in the United States and globally. The focus of the class is to understand the different forms of inequality and explain their persistence. Attention is then turned to the central institutions and mechanisms that sociologists argue are responsible for creating, reproducing, reducing, and challenging the structure of social inequalities. Special attention is paid to race, ethnicity, class, and gender and how they combine.

Professional Experience:
Assistant Research Scientist, Center for the Study of Terrorism and Responses to Terrorism (START) University of Maryland, College Park
April 2014-Present

Funded Research:
As Principal Investigator:
Open-Source Geospatial Analysis of Criminal Activity
    Total grant value: $81,494
    2017-2018
            Pilot study to create an open-source database of smuggling and cartel violence.

Catch Them Coming and Going: Probabilistic Pathway Projection to Counter Foreign Fighters
    Total grant value: $141,551
    2015-2016
            This was a six-month project funded by the National Geospatial-Intelligence Agency to forecast flows of ISIL foreign fighters between the Levant and Europe.

Constructing a Comprehensive Database of Illicit Finance
    Total grant value: $110,000
    2015 – 2016
            On this year-long project, I oversaw the design and implementation of a dataset of firms sanctioned by the United States, Australia, the United Kingdom, the European Union, and the United Nations. The resulting relational database provides a snapshot of each firm including, alternate names, which countries sanction them, when possible the reason for sanctions, and the location of the firm to the city level.

Identifying Border Crossings Database
Total grant value: $857,000
2017 – 2019

> This project, funded by the Domestic Nuclear Detection Office, is designed to create a Spatial Relational Database of all border crossings in the world to identify border crossings that could serve as gaps in the global nuclear detection architecture (GNDA). Data collected will include identifiable security measures and types of structure. In a broader context, the database, when complete, will be vital to understanding potential routes and countermeasures for trafficking, smuggling, and illicit markets.

As Co-Principal Investigator:
Enhancements to the Capability Development Framework (CDF) Mapping, and Threat and Hazard Identification and Risk Assessment (THIRA) Process
Total grant value: approximately $2 million
2014 - 2018

> This project funded by the Domestic Nuclear Detection Office funded the development of a web application to aid federal, state, local, and tribal authorities with understanding their threat and vulnerability to radiological and/or nuclear trafficking/smuggling and their threat and vulnerability to being the target of nuclear and/or radiological terrorism.

Comprehensive Testing of Imminent Threat Public Messages for Mobile Devices
Total grant value: $153,490
2014 – 2015

> This project, funded by the Science and Technology Directorate at the Department of Homeland Security sought to identify optimized message content of imminent threat messages delivered over the Wireless Emergency Alert (WEA) Services. We tested a number of different messages for a variety of imminent threats, including severe weather, active shooter situations, and terrorist attacks.

Dissuading Adversaries and their RN Pathways: Integrating Deterrence Theory and Analytics in the GNDA
Total grant value: approximately $3 million
2013 - 2018

> This project funded jointly by the National Science Foundation and the Domestic Nuclear Detection Office sought to develop tools and models to better understand and forecast how to deter bad actors from attempting to use radiological and/or nuclear terrorism.

Publications and Presentations:

Boyd, M.A., Cidade, M.A., and Leslie, T.F. 2018. "Firms or States: Who to Sanction to Punish Terror?" *Terrorism and Political Violence* (Under Review).

Boyd, M.A., Leslie, T.F., and Cidade, M.A. 2018. "The Shadow World-System: Illicit Finance, Terrorism, and the Semiperiphery," *International Security* (Under Review).

Sin, S. and Boyd, MA. 2016. "Searching for the Nuclear Silk Road: Geospatial analysist of potential illicit radiological and nuclear material trafficking pathways," in *Nuclear Terrorism: Countering the Threat,* Volders, B. and Sauer, T., eds. New York: Routledge: 159-181.

Christopher, S.C., Vese, R.D., Boyd, M., Reddy, A.D., Mulhollen, A.P., Zand, D.E., and Leslie, T.F. 2016. "Servicing Our Economy: Producer Service Location and Government Procurements 2004-2010 in the Washington DC Metropolitan Area," *Growth and Change*.

Boyd, M. and Kerstetter, K. 2011. "The Development and Persistence of U.S. Welfare Policy: An Intersectionalist Approach." Presented at the 2011 Meeting of the Eastern Sociological Society: Philadelphia, PA.

Gooden, S., Jones, D., Martin, K.J., and Boyd, M. 2009. "Social Equity in Local Emergency Management Planning," *State and Local Government Review, 41*, 1.

Professional Association:

    - Member, Association of American Geographers.