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CORE social analytics a vital tool for homeland security

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Brian Seals

A network analysis approach developed at the Naval Postgraduate School's [Common Operation Research Environment](#) (CORE) lab is helping law enforcement and other members of the homeland security enterprise make the nation safer.

[Social network analysis](#) (SNA) is a set of theories and methods that help to understand social structures, said Daniel Cunningham, Associate Faculty for Instruction with the CORE lab.

The method draws from disciplines such as sociology, anthropology, political and other social sciences and holds the potential for improving crime solving as well as enhancing the disaster response community.

"Homeland security professional are expected to find the needle in the haystack and connect the dots," said CORE Faculty Associate for Research [Michael Aspland](#), a [master's degree graduate of CHDS](#) who spent 26 years in law enforcement. "Social network analysis is a methodology that allows us to understand the strength of relationships between people and how those relationships influence others who are engaged in criminal activity."

SNA is the next step as part of the larger intelligence-led policing framework. Whereas predictive policing applications provide insight as to the possible location and time span of when a crime might occur, SNA can answer the

"who" might be involved. The set of methods work by using data exported from police department's records management systems to include arrest records, crime reports, citations, and field interview data. Aspland and Cunningham do not collect, store, or analyze the information but teach law enforcement agencies how to access and structure existing data to analyze the relationships between people involved in criminal enterprises.

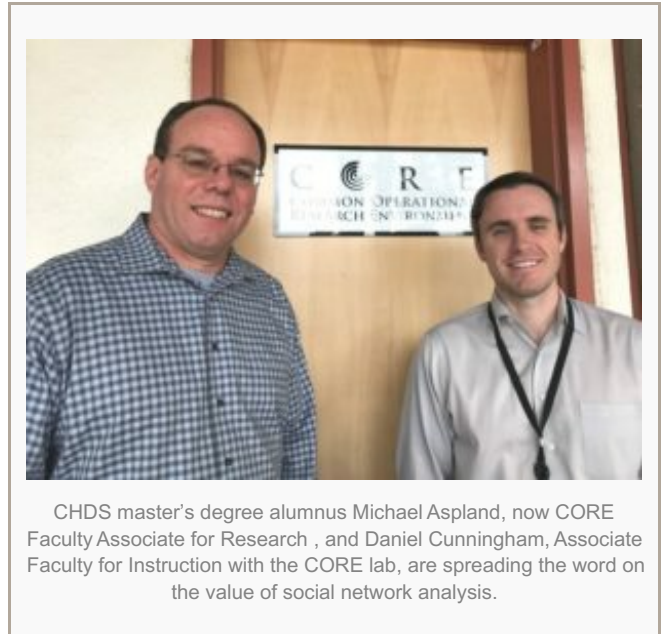
"It takes the emphasis off relying on intuition or attributes to understand people," Cunningham said. "Instead, what we are saying is focus on how people are embedded in networks as opposed to their personal characteristics and attributes. The whole point of running this stuff is to inform effective decision making."

Cunningham added that social network analysis is not the same thing as link analysis because the former has a quantitative or statistical aspect to it, and it draws from various theories regarding social behavior

"I would argue SNA has a more theoretical background than link analysis," Cunningham said.

The CORE lab holds an annual symposium on SNA hosting up to 70 agencies that may benefit from the techniques. Among its success stories is Pasco County, where the Sheriff is Christopher Nocco, who learned about social network analysis while a participant in the NPS-CHDS [Executive Leaders Program](#).

"Beyond the outstanding interactions with fellow students and the great instructors (in the ELP), we were able to develop a partnership with the CORE lab," Nocco said. "Our Sheriff's Office is now incorporating social network analysis in our organization and partnering with others in our state on it."



CHDS master's degree alumnus Michael Aspland, now CORE Faculty Associate for Research, and Daniel Cunningham, Associate Faculty for Instruction with the CORE lab, are spreading the word on the value of social network analysis.

In previous years, the CORE Lab provided outreach and education for a task force focused on a transnational drug organization operating along the U.S. – Mexico border. Using SNA methods, the team identified a top cog in a drug cartel who had not been previously viewed as significant. The analysis indicated that he was the second most important member of the organization with connections to the financial end of the operation. In a Defense and Justice Department collaboration, CORE Lab is also working with the Chicago Police Department and the FBI on the potential of social network analysis in a multi-jurisdictional environment.

Though the emphasis has been working with law enforcement partners, the approach has applications well beyond policing CHDS master's degree graduate [Michael Baker](#), Chief Officer of Emergency Medical Services with the Tulsa Fire Department, analyzed social networking in his thesis, "[Social Networks and High Healthcare Utilization: Building Resilience Through Analysis.](#)"

"The analysis of a social network and an individual's position within that network could become a key research component in the study of community residents with the highest medical needs at the highest delivery costs," Baker wrote.

The Department of Defense's (DoD) [Domestic Preparedness Support Initiative](#) (DPSI) sponsors these efforts. Plans this year include working with the Chicago Police Department, the Camden County Prosecutors Office in New Jersey, as well as the San Bernardino Police Department, Folsom Police Department and Sacramento County Sheriff's Department California. Collaboration in the early stages would also include the city of Oakland California, the Milwaukee Police Department and the Flint, Michigan, Police Department. all of which participate in the Department of Justice's [Violence Reduction Network](#).

"We want to build a community of practitioners within law enforcement," Cunningham said. "We want them to be able to do this stuff on their own. You can't really template these things. That's why we focus on education as opposed to training, because when you train you teach templates. When you educate people they start thinking about networks differently."

The CORE 2017 Symposium, "Social Network Analysis for Law Enforcement," is scheduled for May 1-5 at the Naval Postgraduate School. For information, contact Michael Aspland at mjasplan1@nps.edu

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