



**Calhoun: The NPS Institutional Archive  
DSpace Repository**

---

Center for Homeland Defense and Security (CHDS)

Center for Homeland Security and Defense Publications

---

2018-07-03

## Alumnus shares thesis research with Singapore counterparts

Seals, Brian

Monterey, California : Naval Postgraduate School

---

<http://hdl.handle.net/10945/59166>

---

This publication is a work of the U.S. Government as defined in Title 17, United States Code, Section 101. Copyright protection is not available for this work in the United States.

*Downloaded from NPS Archive: Calhoun*



Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community. Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

**Dudley Knox Library / Naval Postgraduate School  
411 Dyer Road / 1 University Circle  
Monterey, California USA 93943**

<http://www.nps.edu/library>

# Alumnus shares thesis research with Singapore counterparts

 [chds.us/c/item/8181](https://chds.us/c/item/8181)

Brian  
Seals

July 3, 2018

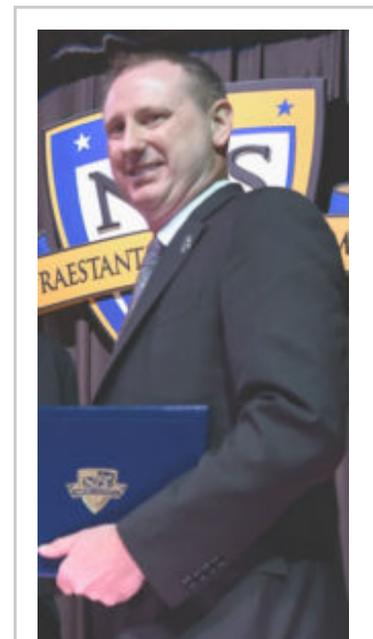
NPS Center for Homeland Defense and Security master's degree alumnus Ryan Jerde traveled to Singapore in April where he discussed his thesis research as part of a joint workshop with Singaporean law enforcement and regulatory officials and Immigration and Customs Enforcement/Homeland Security Investigations (ICE/HSI).

Jerde is a Supervisory Special Agent with ICE/HSI whose thesis, "Follow the Silk Road: How Internet Affordances Influence and Transform Crime and Law Enforcement," explored the link between the so-called "Dark Web" and modern criminal enterprise. In Singapore, he led discussions on Introduction to Cryptocurrency and Blockchain, Cryptocurrency Investigations, and Cryptocurrency Prosecutions and Case Studies.

"I was asked by the HSI Illicit Finance and Proceeds of Crime Unit to present three blocks of instruction at the workshop on cryptocurrency based on my familiarity with the topic from researching and writing my NPS-CHDS thesis," Jerde noted.

A combination of career experience and classroom curiosity led Jerde to his thesis topic. The now-defunct website Silk Road was infamous for hawking illegal wares from drugs to weapons by operating outside the traditional bounds of law enforcement. Anonymity can be virtually ensured by programs such as Tor and cryptocurrencies used for international transactions. NPS-CHDS master's degree courses were especially helpful: Technology in Homeland Security; Strategic Planning; and Internet, Society, and Cyber-conflict.

"So, my interest in studying the effects of technology and crime came about from my job with HSI, but the spark that made me want to make this my thesis topic came from some of the classes and professors at NPS-HDS," he said. "I put my normal criminal justice and sociology hat on to analyze how technology influences crime, but also used analytical frameworks of affordance theory and stigmergy to view the problem uniquely. My thesis attempts to answer the relevant question for HSI: 'What are the challenges of enforcing laws against the illegal movement of people and goods when that movement is facilitated by the Internet?'"



Ryan Jerde receives his diploma in December 2017.  
(Photo courtesy of NPS)

His presentation in Singapore incorporated recommendations from his thesis and included a case study review of the Silk Road, Silk Road 2.0 and BTC-e criminal investigations.

“These case studies were used to demonstrate how crime is evolving based on Internet technologies and show how law enforcement is adapting,” Jerde noted. “I recommended that since new Internet technologies are evolving crimes that were previously understood to be physical to digital, so quickly, that law enforcement should adopt the discipline of future studies to help predict changing crime trends and future disruption to the criminal/law enforcement balance.”

Jerde also suggested:

- Technology training is a necessity for all investigators; not just investigators of traditional cybercrimes. All law enforcement needs to develop a technology mindset.
- Classifying crime accurately is vital for knowing what investigative techniques will be most effective.
- Smart enforcement is needed for crimes facilitated by Internet technologies and is the selection of the most effective combination of traditional and unconventional investigative techniques.
- Government collaboration is required to leverage the most advanced law enforcement understandings of technology and to stay ahead of criminal uses of technologies. No one agency or individual can know everything.
- Public-private partnerships that rely on federally funded research and development centers (FFRDC) are needed to assist law enforcement with the identification and management of disruptive technologies.
- Unconventional frameworks, such as affordance theory and stigmergy, could help advance the study of criminal justice.

“My professional goal for selecting this topic was a desire to advance the research specifically to help law enforcement,” he noted. “One of the biggest problems for law enforcement is just acquiring the ability to understand how new technologies are making law enforcement more difficult.”

Prior to his current role supervising cyber investigations, Jerde managed investigative groups responsible for counterterrorism, transnational gangs, and financial crimes. He has held positions as Senior Special Agent with the Office of Professional Responsibility’s Special Investigations Unit, National Program Manager for the Undercover Operations Unit, and Special Agent in the Chicago field office. He began his more than 21-year career in federal law enforcement as a U.S. Border Patrol Agent in Brownsville, Texas.

Jerde commended the NPS-CHDS master’s degree program for enhancing his career. He credits his thesis research in particular for his recent assignment to managing the HSI D.C. Cybercrime and Emerging Market Group and said he continues to interact and call upon former classmates for expertise.

“A result of the CHDS curriculum is that I try to be much more systematic in how I define and

manage problems,” he said. “I also try to rely on the research of facts rather than fostering my own or others personal beliefs about a topic.”



**SINGAPORE POLICE FORCE**

**U.S. Immigration and Customs Enforcement**

**Economic Crime & Emerging Crime Trends  
- The U.S. Perspective**

**April 10-12, 2018  
Singapore**

Ryan Jerde, seventh from the left on the second row, discussed his NPS-CHDS thesis research as part of a joint workshop with Singaporean law enforcement/regulatory officials and ICE/HSI. (Contributed photo)