# Criminal Investigations and Network Analysis Center (CINA)
## *A Nationwide Consortium Led by George Mason University*

## A DHS Center of Excellence

*Criminal activity is complex and continues to evolve, spanning physical and virtual environments. This level of sophistication poses a challenge to those charged with detecting and disrupting it. Using multidisciplinary approaches, CINA researchers develop cutting-edge tools and technologies, provide innovative solutions and strategies, and develop state-of-the-art education and training offerings to help agents more effectively thwart criminal activity, including money laundering, cryptocurrency, human trafficking, smuggling of goods and counterfeits, and illicit trading.*

## Research and Education Capabilities

- Criminal network analysis and predictive modeling
- Analysis of dynamic patterns of criminal activity
- Traditional and digital forensics, including multimedia analytics
- Improving investigative processes
- Education and training for current and future homeland security workforce

## About CINA

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| **LAUNCH** | 2017 |
| **PARTNERS** | More than 50 university, nonprofit, and industry partners |
| **EXPERTISE** | Network analysis, criminology, digital and traditional forensics, multimedia content analysis, data analysis and visualization, social media analysis, criminal investigations, geospatial intelligence, cryptocurrencies, voice and video analytics |
| **DHS ALIGNMENT** | U.S. Coast Guard (USCG), U.S. Customs and Border Protection (CBP), U.S. Immigration and Customs Enforcement (ICE), Homeland Security Investigations (HSI), Federal Law Enforcement Training Centers (FLETC), DHS Office of Policy, DHS Science and Technology Directorate (S&T), U.S. Secret Service (USSS), Transportation Security Administration (TSA) |

## Feedback from Our Partners

*"CINA is a strategic asset for the Department of Homeland Security. Their research streams provide insights critical to DHS's mission of countering transnational organized crime and their education programs are developing a key pipeline to the Department for future homeland security professionals."*

**Jason Ackleson**, Principal Director, Law Enforcement Policy, Office of Strategy, Policy, and Plans, DHS

## University Partners

Arizona State University
Auburn University
Baruch College
Bowie State University*
Cal State San Marcos*
Carnegie Mellon University
Champlain College
City University of New York*
Clemson University
Diné College*
East Carolina University
Eastern New Mexico University*
Elizabeth City State University*
Emory University
Fayetteville State University*
Florida International University*
Georgia State University*
Jackson State University*
Jacksonville State University
John Jay College of Criminal Justice*
Liberty University
Lincoln University*
Michigan State University
New York City College of Technology*
Norfolk State University*
North Carolina State University
Penn State University
Purdue University
Rensselaer Polytechnic Institute
Rutgers University
St. Joseph s University
St. Mary's University*
Sul Ross State University*
Temple University
Trinity Washington University*
University of Alabama
University of Baltimore*
University at Buffalo
University of California Irvine*
University of Central Florida*
University of Dayton
University of the District of Columbia*
University of North Texas*
University of Notre Dame
University of Portsmouth (UK)
University of Texas at El Paso*
University of Texas San Antonio*
University of Washington
University of Winchester (UK)
Virginia Commonwealth University
Virginia Polytechnic Institute and State
    University

*Minority Serving Institution (MSI)

## Enterprise Partners

Bluestone Analytics
General Dynamics Information Technology
Global Emancipation Network
Miami Valley Regional Crime Lab

 @CINAatMason

For more information on DHS Centers of
Excellence, please visit
**www.dhs.gov/science and
technology/centers excellence**

# Impacts

### Advancing Fingerprint Analysis Technology

Latent fingermarks are the most common and least visible at crime scenes and other scenes of action. CINA researchers are advancing new identification technologies such as 3-dimensional holographs and algorithms to improve automated recognition systems. This research is informing and improving DHS biometric operational capabilities, enabling investigators to overcome challenges posed by current biometric identification systems.

### Disrupting Illicit Markets

As law enforcement agencies have gained traction in shutting down darknet markets and arresting operators, criminals are moving more of their operations to Encrypted Communications Platforms (ECP), which are much more difficult for investigators to detect and shut down. CINA's research is enhancing law enforcement's ability to investigate and stop criminal activity on ECP by developing strategies for gathering intelligence from ECPs more effectively and efficiently.

### Developing the Homeland Security Workforce

CINA is partnering with Auburn University to develop a series of specialized cyber-forensics training courses for the U.S. Secret Service (USSS) National Computer Forensics Institute (NCFI). The curricula covers the detection of counterfeit circuits in electronics and malware/ransomware reverse engineering, as well as teaching repeatable cyber-investigative practices and designing a network incident response framework for enforcement officers. By providing current, relevant, validated, and accredited course material, CINA is helping NCFI and their extensive network of Electronic Crimes Task Forces conduct cyber and electronic crime investigations, computer and mobile device forensics examinations, and investigate network intrusion incidents.