



Homeland Security

Science and Technology

Center for Accelerating Operational Efficiency (CAOE)

A DHS Center of Excellence

CAOE develops and applies advanced analytical tools and technologies to enhance planning and real-time decision-making in homeland security operations.

LAUNCH ▶ 2017

PARTNERS ▶ More than 25 university, private industry, and national laboratory partners

EXPERTISE ▶ Global security, computer science, engineering, cybersecurity, economics, risk science, policy studies, supply chain management, and operational research

DHS ALIGNMENT ▶ U.S. Customs and Border Protection, DHS Office of Intelligence and Analysis, Cybersecurity and Infrastructure Security Agency, DHS Procurement Innovation Lab (PIL), Transportation Security Administration (TSA), U.S. Central Command, U.S. Pacific Command

Research and Education Capabilities

- Predictive analyses
- Threat screening and detection optimization
- Risk and cost analysis
- Education and training for the current and future homeland security workforce

CAOE | CENTER FOR ACCELERATING OPERATIONAL EFFICIENCY
A DEPARTMENT OF HOMELAND SECURITY CENTER OF EXCELLENCE

A nationwide consortium led by:

Arizona State University (ASU)

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Feedback from Our Partners

*“Through CAO E, Dr. Thomas Kull embedded directly with the DHS PIL team. Dr. Kull’s work has helped us draw out underlying motivations and beliefs that can both inspire or resist innovation in the procurement process. This **helps our PIL team coach better!**”*

Polly Hall, DHS Acquisition Innovation Advocate, PIL
Office of the Chief Procurement Officer, 2019

*“We will do everything in our power to secure our national transportation systems. We will be proactive, becoming the tip of the spear with new initiatives and technologies. Our partnership with CAO E and ASU provides **innovative and high level support** to help accomplish that goal.”*

Scot Thaxton, Acting Federal Security Director
Transportation Security Administration - Arizona, 2019

University Partners

Creighton University, NE
John Jay College of Criminal Justice,
NY
Michigan State University, MI
Monmouth College, IL
North Carolina Agricultural & Technical
State University, NC*
Northwestern University, IL
Oklahoma State University, OK
The University at Buffalo (State
University of New York), NY
The University of British Columbia,
BC, Canada
The Ohio State University, OH
The Pennsylvania State University, PA
The University of Texas at El Paso,
TX*
University of Alabama, AL
University of Albany (State University
of New York), NY
University of California at Irvine, CA
University of Chicago, IL
University of Illinois, IL
University of Nebraska - Omaha, NE
University of Nevada Las Vegas, NV
University of Southern California, CA
Western Carolina University, NC
**Minority Serving Institution (MSI)*

Enterprise Partners

Decision Research
Intelligent Biology
Los Alamos National Laboratories
(LANL)
Maricopa County (AZ) Emergency
Management Department
Merit Network
Pacific Northwest National Laboratory
(PNNL)
Sandia National Laboratories
Skysong Innovations



For a complete list of partners
and more information, please visit
www.caoe.asu.edu

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



Impacts



Improving airport checkpoint performance

With more than 2.5 million passengers flying each day through U.S. airports, CAOE is working with TSA to improve airport checkpoint performance through resource allocation decision tools that evaluate passenger demand. Outcomes include reduced average wait time, improved customer service, and quicker responses to unplanned events without compromising security.



Planning for lifeline supply chain restoration in the wake of disasters

CAOE is developing a real-time, command-and-control decision tool for more efficient restoration of vital transportation, electrical power and diesel-fuel supply chains, to address challenges in planning for natural disasters and national emergencies.



Improving detection of border threats

With the U.S. government's increased investment in both physical and virtual infrastructure to prevent illegal smuggling and trafficking, CAOE projects identify potential "hot paths" of activity, allowing for better resource allocation to improve capacity and return-on-investment of tactical and surveillance infrastructure.



Detecting and tracking isolated malicious activities

Recent airport security breaches, mass shootings at public events, and cyber-attacks on sensitive data present the challenge of combating diverse, Isolated Malicious Activities (IMAs) or "lone wolf" type of attacks. CAOE is creating technology that will give law enforcement the ability to identify rare signals that indicate probable activities from IMAs.