



# Center for Accelerating Operational Efficiency (CAOE)

A Nationwide Consortium Led by Arizona State University

## A DHS Center of Excellence

CAOE develops and applies advanced analytical tools and technologies to enhance planning, information sharing and real-time decision-making in homeland security operations. The Center also develops educational programs to meet current and future workforce needs across the homeland security enterprise in visual and data analytics, operations research and systems analysis, economic analysis, and risk science.

## Research and Education Capabilities

- Predictive analyses
- Screening for threat assessment and resource allocation
- Risk detection and mitigation
- Education and training for current and future homeland security workforce

## About CAO E

<b>LAUNCH</b>	2017
<b>PARTNERS</b>	More than 25 university, private industry, and national laboratory partners
<b>EXPERTISE</b>	Global security, computer science, engineering, cybersecurity, economics, risk science, policy studies, supply chain management, data analytics, and operational research
<b>DHS ALIGNMENT</b>	U.S. Customs and Border Protection (CBP), Cybersecurity and Infrastructure Security Agency (CISA), Office of Intelligence and Analysis (I&A), DHS Privacy Office, DHS Procurement Innovation Lab (PIL), DHS Science and Technology (S&T), Transportation Security Administration (TSA)

## 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



## University Partners

University at Albany - State University of New York  
University at Buffalo  
The University of British Columbia  
University of California at Irvine\*  
University of Illinois at Urbana-Champaign  
John Jay College of Criminal Justice  
Michigan State University  
Monmouth College  
University of Nevada\*  
North Carolina A&T State University\*  
Northwestern University  
University of Nebraska at Omaha  
Pennsylvania State University  
Rutgers University  
San Diego State University\*  
University of Southern California  
Texas A&M University  
The University of Texas at El Paso\*  
Victoria University  
College of William and Mary

*\*Minority Serving Institution (MSI)*

## Enterprise Partners

ASU Skysong Innovations  
Business Executives for National Security  
Catalyst-GO  
Decision Research  
Maricopa County Emergency Management Department  
Merit Network  
Pacific Northwest National Laboratory  
Los Alamos National Laboratories  
Sandia National Laboratories



For a complete list of partners and more information, please visit [www.caoe.asu.edu](http://www.caoe.asu.edu)

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



### Pivoting To Respond To A Pandemic

When the spread of COVID-19 turned into a pandemic in March 2020, CAOE quickly pivoted to address anticipated pandemic-related challenges. CAOE shifted the focus of an ongoing project on natural disaster preparedness to address expected supply chain challenges around medical equipment and vaccines.



### 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.



### Developing Cross-Disciplinary Education Resources For The Future Workforce

CAOE works to support workforce and professional development through a multi-institutional approach to developing a diverse and inclusive homeland security workforce. The Center's research and education programs generate graduates competitively skilled in quantitative analytics and advance established relationships with Minority Serving Institutions (MSIs). A key component of the Center's program has been the establishment of cross-disciplinary modules and programs that span traditional disciplinary boundaries while being agile enough to deliver skill sets critical to support existing and emerging mission needs.