



University of

Southern California

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Research Areas

- Economic Analysis of Terrorism and Natural Disasters
- Risk Analysis
- Adaptive Adversary Modeling
- Expert Elicitation and Uncertainty Analysis
- Game Theory
- Risk Management/ Operations Research
- Risk Perception
- Decision Analysis

"The ARMOR-PROTECT project underscores what the Coast Guard and academia can do together to protect the homeland in the most efficient and effective manner possible."

– **Captain Tom Vitullo**
Chief of Response
1st Coast Guard District

Mission: *To improve our Nation's security through the development of advanced models and tools for the evaluation of the risks, costs, and consequences of terrorism and to guide economically viable investments to counter terrorism.*

Quick Facts

- A multidisciplinary academic research center focused on applying risk and economic analysis to terrorism and disasters.
- Develops predictive models that gauge how and where terrorist events might occur, estimates the economic consequences of such attacks, and identifies where the country's vulnerabilities reside.
- Has trained hundreds of next-generation homeland security leaders through coursework, research assistantships and internships.
- Has completed more than 200 homeland security research projects.

Partners

- Led by the University of Southern California (USC).
- 48 research partners nationwide.
- Over 20 percent of CREATE's partners have been Minority Serving Institutions.

Background

- Established in 2004 as the Nation's first DHS Center of Excellence.
- Meets the Homeland Security Presidential Directive 9 (January 2003) mandate for a university-based risk and economics analysis center.

Key Accomplishments

- CREATE's applications of game theory to homeland security operations have received awards and recognitions from professional associations and law enforcement and government agencies including the U.S. Coast Guard (USCG), Federal Air Marshal Service (FAMS), and the City of Los Angeles.
- DHS officials used the results of CREATE's study on the economic impact of wait times at U.S. ports of entry in Congressional testimony.
- Developed courses and certificate programs catering to homeland security professionals including the online Certificate in Homeland Security and Public Policy, the Executive Program in Counter-Terrorism, the Aviation Safety & Security Program, and risk assessment training for DHS Immigration and Customs Enforcement investigators and inspectors.
- Won the 2009 DHS Science & Technology (S&T) Impact Award for ARMOR for improving security at the Los Angeles World Airports (LAX). Won the 2010 S&T Impact Award for Inter-cultural Collaboration and Interoperability for bringing together diverse stakeholder communities to identify and manage shared terrorism risks in vulnerable areas along U.S. borders.

Research Partners

Decision Research
Georgetown University
Global Catastrophic Risk Institute
Haskell Indian Nations Foundation*
Mississippi State University*
RAND Corporation
University at Buffalo, SUNY
University of Kentucky
University of Maryland
Baltimore County
University of Massachusetts -
Dartmouth
University of Pennsylvania -
Wharton School
University of Wisconsin - Madison
Victoria University

Selected Government Agencies Leveraging CREATE's Capabilities

DHS

- U.S. Coast Guard
- Transportation Security Administration
- Federal Air Marshal Service
- U.S. Customs and Border Protection
- Domestic Nuclear Detection Office
- U.S. Immigration and Customs Enforcement

Department of Justice

Los Angeles International Airports

Ports of Los Angeles and

Long Beach, California

California Emergency

Management Agency

Los Angeles County Sheriff's Department

California Department of Corrections

Joint Regional Intelligence Center

Ohio Highway Patrol

California Energy Commission

CREATE Highlights

ARMOR (Assistant for Randomized Monitoring Over Routes)

Originally developed for the Los Angeles Police at LAX, several government agencies are now using customized versions of ARMOR to thwart adversaries and maximize security resources. ARMOR randomizes security schedules and plans, making it difficult for adversaries to plan how to avoid security forces when plotting illegal activities.

- **ARMOR for LAX** resulted in greater numbers of weapons and contraband seized at airport entry points and reduced overtime expenses.
- **ARMOR-IRIS (Intelligent Randomization in International Scheduling)** for FAMS efficiently deploys Federal Air Marshals while directing resources to the most critical international flights.
- **ARMOR-GUARDS (Game-theoretic Unpredictable and Randomly Deployed Security)** for the Transportation Security Administration (TSA) randomized the TSA security playbook.
- **ARMOR-PROTECT (Port Resilience Operational Tactical Enforcement to Combat Terrorism)** for the USCG has improved effectiveness of on-the-water patrols. PROTECT is being rolled out nationwide.
- **ARMOR-TRUSTS (Tactical Randomization for Urban Security in Transit Systems)** for the Los Angeles Sheriffs' Department has increased apprehension of fare evaders and deters other crimes.

CREATE Provides Expertise in Risk Analysis and Economic Consequence Modeling for Homeland Security

- Analysis of FEMA's National Flood Insurance Program informed the development of the Flood Insurance Reform Act of 2012.
- CREATE's wait-time study was cited in testimony to the House Subcommittee on Homeland Security in 2013 on how wait times at ports of entry impact the U.S. economy. The report is available online: http://create.usc.edu/CBP_Final_Report.pdf.

DPS DEPLOY (Department of Public Safety DEPLOY)

DPS DEPLOY has improved the security of the USC campus and adjacent community by generating customized heat maps that display crime risk. USC used DPS DEPLOY to plan new campus construction in a way that minimizes crime risk.



PORTSEC (Port Security Risk and Resource Management System)

PORTSEC is a risk assessment and security resource allocation system for seaport operations. Port security officers and analysts in Los Angeles and Long Beach currently use PORTSEC to perform assessments and optimally balance security and daily port activities.

Education and Training

CREATE's educational program focuses on workforce development through research assistantships, university courses, master's and certificate courses, professional short courses, internships, seminars and events.

* Indicates a Minority Serving Institution (MSI) partnership.