



Center for Risk and Economic Analysis of Terrorism Events

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University of Southern California



History of CREATE

- USC was selected as the first DHS university center in a competition of 72 universities
- Started operations in March of 2004
- Focus on risk and economic analysis
- \$12 million for first three years
- Assist DHS and future centers in risk analysis and economic modeling



CREATE Mission



To evaluate the risks, costs and consequences of terrorism and to guide economically viable investment in countermeasures that will make our Nation safer and more secure

CREATE is an Interdisciplinary Center

- Social Science
 - Economics
 - Psychology
 - Political Science
 - Public Policy and Planning
- Engineering
 - Industrial and Systems Engineering
 - Electrical Engineering
 - Civil Engineering
- Computer Science

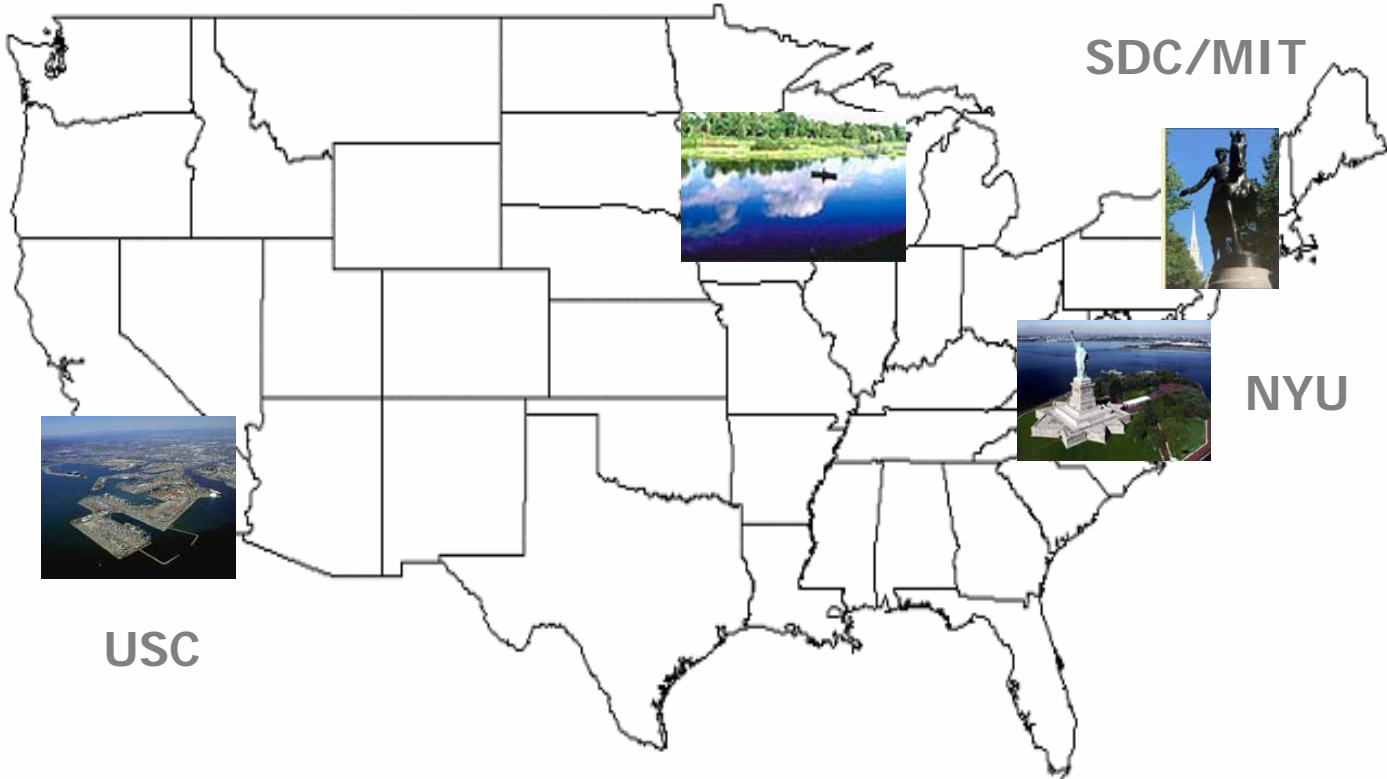
CREATE is a National Center

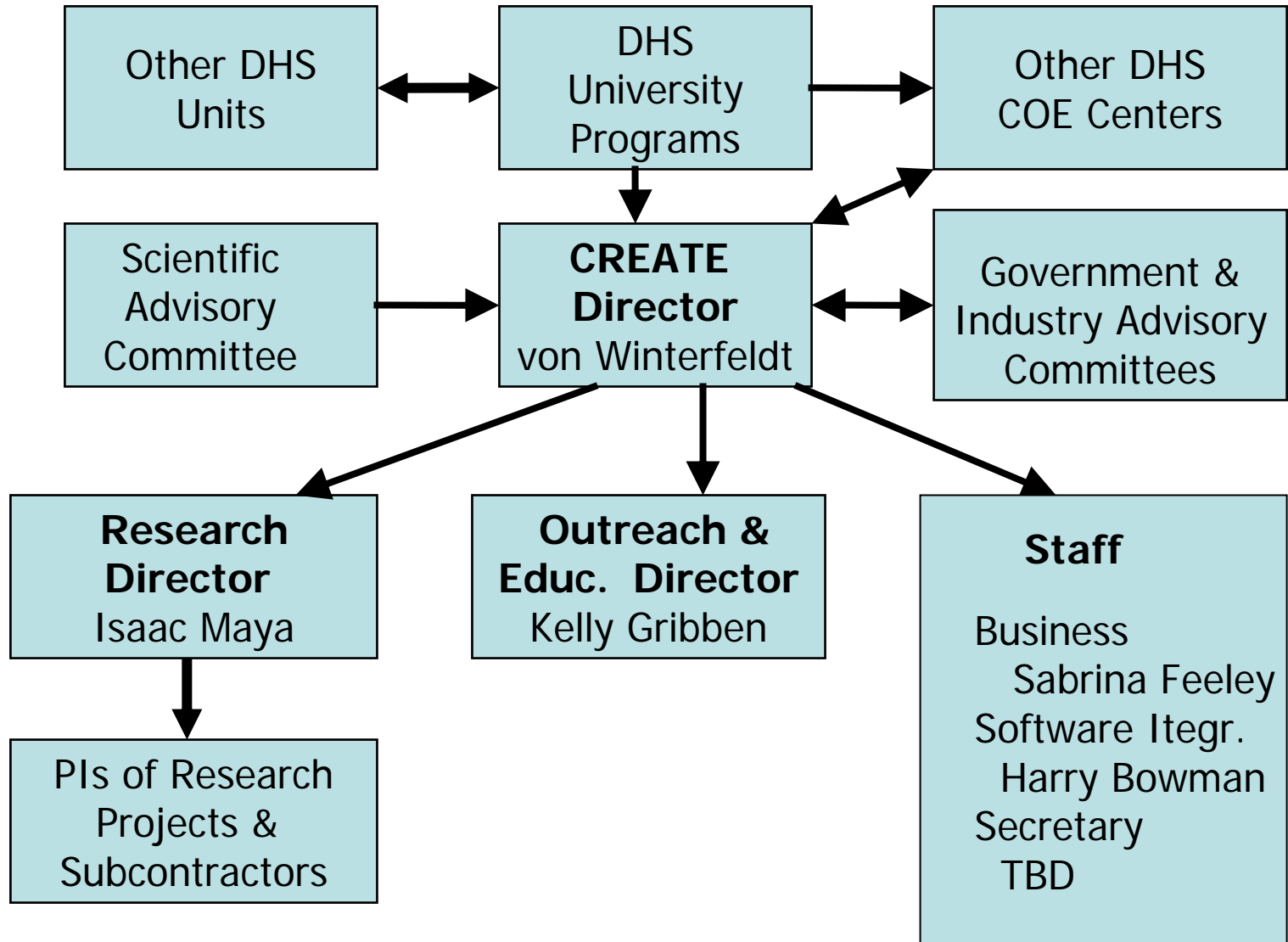
U of Wisconsin, Madison

SDC/MIT

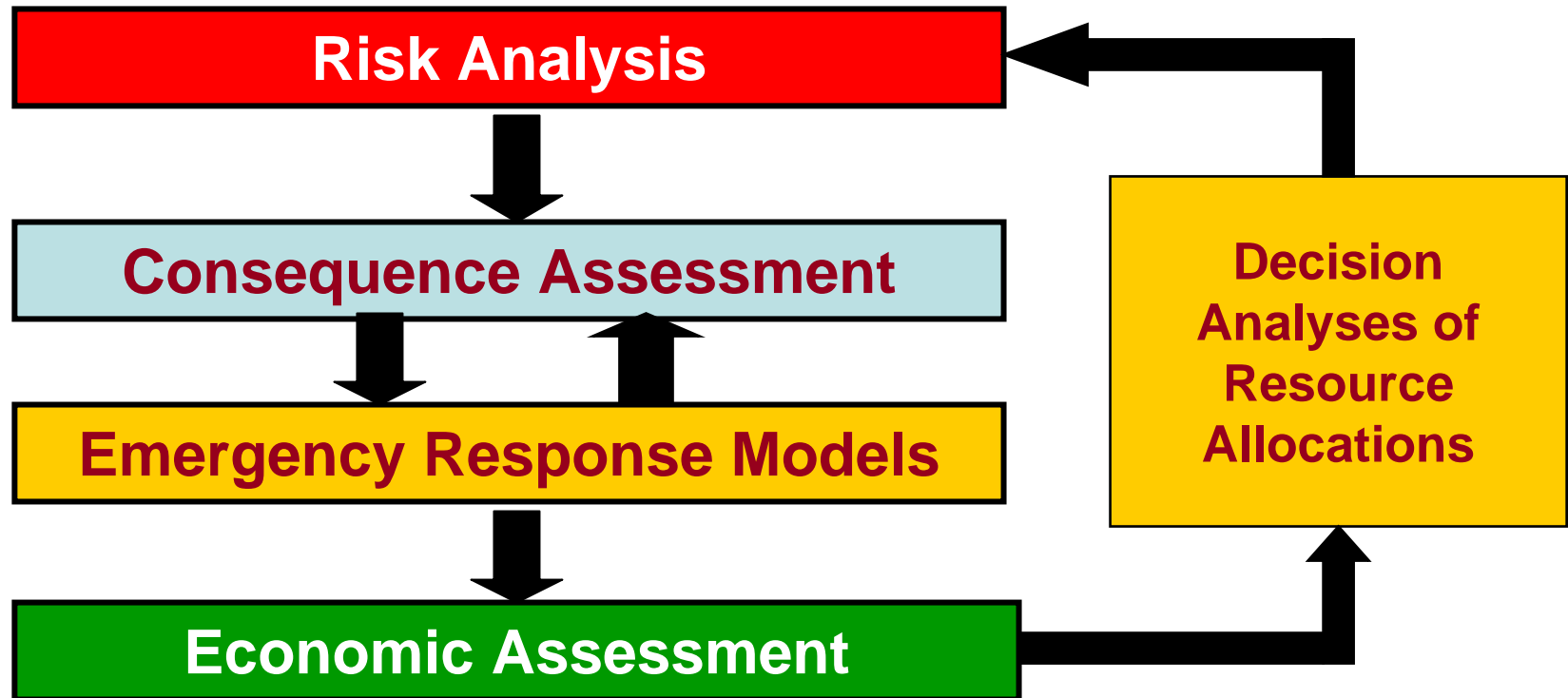
NYU

USC





Center Research and Analysis Areas



Case Analyses in Year 1

Modeling Areas	Ports (Dirty Bomb)	MANPAD	Infrastructure (Electricity)
Risk Analysis			
Consequence Assessment			
Response Modeling			
Economic Analysis			

Research Areas and Projects – Year 1

Risk Analysis

- Terrorism risk and transference (Sandler)
- Game theory and case analyses (Bier)
- Risk analysis workbench (Neches)
- Decision analysis (John)

Consequence Assessment

- Infrastructure vulnerability (Zimmerman)
- Structural blast responses (Masri)
- Aviation security response (MacGregor)

Research Areas and Projects - Year 1

Emergency Response

- Emergency response planning (Larson)
- Emergency supply planning (Dessouky & Ordonez)
- Risk models for emergency response (Ross)
- Agent-based simulations (Tambe)
- Visualization (Neumann)

Economics

- Input-output models (Gordon)
- Computable gen. equilibrium models (Rose)
- Cost-benefit analysis (Lave)
- Contingent valuation (Smith)

Selected Analysis Results - Year 1

- Analysis of **MANPADS** countermeasures
 - Client/User: MANPADS countermeasure office
 - Use: Analysis of the cost-effectiveness of countermeasures
 - Several reports, user friendly software
- Analysis of 36 **dirty bomb** attack scenarios on ports
 - Client/User: DNSO, IAIP, Port Authorities, Emergency Responders
 - Use: Exercises, evacuation planning, decisions on radiological detection technologies
 - One report, several interlinked models and software
- Analysis of major attack on the **electrical system**
 - Client/User: ISOs, utilities, PUCs, CEC
 - Use: Grid planning, emergency preparedness
 - Several reports, two regional outage analyses, two economic analyses

Decision Support – Year 1

- **Economic impact analyses**
 - Shutting down the aviation system (FAA, Congress, MANPADS Office)
 - Shutting down harbors in the US (Coast Guard, Harbor Authorities)
 - Attacks on major tourist attractions (IAIP)
 - Attack on regional electricity systems (ISOs)
- **Assistance to DHS**
 - Review of bioterrorism risk analyses (NBAC, ORD)
 - Task force on hurricane Katrina decision analysis (ORD)
 - Guidance and tutorials on risk analysis (planned, DHS-wide)

Scientific Products – Year 1

- **Publications and Presentations**
 - 3 books and one edited journal (in progress)
 - 27 peer reviewed articles (published, in print, or submitted)
 - 30 reports
 - 27 conference presentations
 - 50 public presentations
- **Conferences and Symposia**
 - Three state-of-the art symposia on risk and economics
 - Four major conferences

Outreach – Year 1

- **Public Conferences**
 - Reducing Risks and Consequences of Terrorism (11/04)
 - Port Security Workshop (3/05)
 - Terrorism Risk Insurance (6/05)
 - UK/US Symposium on Homeland Security Solutions (9/04)
 - Future of TRIA (in Washington DC, on 10/7/05)
- **Presentation and Publicity**
 - About 2-4 presentations per month
 - About 2-4 media contacts per month
- **Local and Regional Government Collaborations**
 - Three regional advisory boards
 - Active collaboration with local emergency responders

Education – Year 1

- Research Assistants (20 at USC, 35 total)
- Visitors
 - DHS Scholars (4 in 2004)
 - MSI Faculty and Students (3 faculty members, 4 students)
- Masters degree and certificate in Systems Safety and Security
- Aviation Safety and Security Program

Distance Education Network - Netscape 6

University of Southern California

Distance Education Network (DEN)

USC

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How DEN Works



DEN courses are transmitted from studio classrooms at the USC campus via an extensive e-learning system that enable students to access their classes anytime, anywhere. DEN students are viewing the **same** exact lecture as on campus graduate students.

Instruction is interactive; students can ask questions and carry on discussions with the instructor by telephone or threaded chat discussions.

How to view courses [\[top\]](#)

DEN courses are delivered via the Internet, and are available on the web live and on-demand. All you need is high-speed Internet connection (minimum: DSL or cable connection). Courses are stored on the server for the entire semester, allowing DEN students a chance to review complex lessons or prepare for exams.

For detailed instructions on how to get started with DEN, [click here](#).

For more information on webcasting and technology specifications, [please click here](#). For specific technical questions and help, contact our Webcast and Technical Help team at webclass@usc.edu or call (213) 821-1321.

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New Projects – Year 2

- Risk Perception
- Behavioral Economics
- Analysis of the motivation, capabilities and intent of terrorists
- Risk-based allocation models

Case Analyses for Year 2

- **Bioterrorism**
 - Allocation of funds to reduce risks of five class A agents
 - Complete analysis for one agent
 - Clients: ORD, NBAC
- **Border Security**
 - System-wide analysis
 - Container security in LA and Long Beach Ports
 - Clients: IAIP, port authorities
- **Risk Based Allocation of First Responder Funds**
 - Clients: Congress, States, IAIP

Other New Activities – Year 2

- Industry Advisory Committee
 - Guidance on technology transfer
 - Collaborative Proposals
- Risk Analysis
 - Leadership in the DHS
 - Training workshops
- Katrina and Natural Disasters
 - Katrina Clean up
 - Economic analyses

Plans for Year 3

- Integrated risk assessment system (RAW)
- Risk Management
 - Broaden emergency response focus
 - Policy and decision analyses of major HS issues
- Assist DHS and other agencies in developing a risk based approach to homeland security investments
- Develop collaborative work with local and regional agencies



Beyond Year 3

- Develop a one-stop shop for risk and economic analysis tools
- Expand to include non-terrorist disasters
- Add an applied component – quick response and medium term consulting and advice
- Invest in high-risk high-payoff research
 - Behavioral modeling of terrorism (with START)
 - Behavioral economics of reactions to terrorism