

# First Annual DHS University Network Summit on Research and Education AGENDA

**Thursday, March 15, 2007**

DHS Centers of Excellence (COE) and the Science & Technology (S&T) Directorate's  
Research Agenda

The first day of the summit is structured around six DHS S&T Division Panels and an Operations Analysis Panel that discusses capability gap areas the COEs are addressing. Jay M. Cohen, Under Secretary for Science & Technology, Department of Homeland Security, will deliver the luncheon keynote address.

Student poster sessions exhibited throughout the day - Solarium

7:00      Registration – Grand Ballroom Foyer  
Student Poster Session - Solarium

8:00      Welcome – Grand Ballroom  
**Matthew Clark**, Director, Office of University Programs, Science & Technology  
Directorate, Department of Homeland Security

8:15      Panel: Explosives – Grand Ballroom

- Moderator: **Thomas Kiess**, Explosives Division, Science & Technology Directorate, Department of Homeland Security
- **Herman Rediess**, Explosives Division, Science & Technology Directorate, Department of Homeland Security
- **Susan Hallowell**, Transportation Security Laboratory, Department of Homeland Security
- **Polly Gongwer**, Transportation Security Laboratory, Department of Homeland Security
- **David Hernandez**, Transportation Security Laboratory, Department of Homeland Security
- **David Atkinson**, Pacific Northwest National Laboratory

9:15      Panel: Chemical/Biological – Grand Ballroom

- Moderator: **John Vitko**, Chemical/Biological Division, Science & Technology Directorate, Department of Homeland Security
- **Neville Clarke**, National Center for Foreign Animal and Zoonotic Disease Defense (FAZD)
- **Francis Busta**, National Center for Food Protection and Defense (NCFPD)
- **Joan Rose**, Center for Advancing Microbial Risk Assessment (CAMRA)
- **Clay Detlefsen**, Food and Agriculture Sector Coordinator Council
- **Tom McGinn**, Office of the Chief Medical Officer, Directorate for Preparedness, Department of Homeland Security

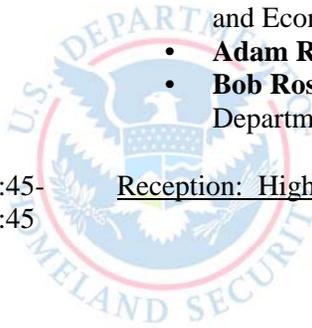
10:15     Break  
Student Poster Session - Solarium

- 10:45 Panel: Command, Control and Interoperability – Grand Ballroom
- Moderator: **David Boyd**, Control Command and Interoperability Division, Science & Technology Directorate, Department of Homeland Security
  - **Fred Roberts**, Rutgers University, University Affiliate Centers to the Institutes of Discrete Sciences (UACs-IDS), DHS Center for Dynamic Data Analysis
  - **Jim Thomas**, National Visualization and Analytics Center (NVAC)
  - **David Ebert**, Purdue University, Regional Visualization and Analytics Centers (RVACs)
  - **David Scott**, United States Coast Guard
  - **David Leonardis**, New Jersey Office of Homeland Security and Preparedness: An Operational Perspective on Intelligence Fusion
- 11:45- Lunch: Monet Room, 2<sup>nd</sup> Level  
1:05 12:15-1:05 Keynote Speech – **Jay M. Cohen**, Under Secretary for Science & Technology, Department of Homeland Security
- 1:15 **Chris Christopher**, Corporate Communications, Science and Technology Directorate, Department of Homeland Security
- 1:25 Panel: Borders/Maritime Security – Grand Ballroom
- Moderator: **David Newton**, Borders/Maritime Division, Science & Technology Directorate, Department of Homeland Security
  - **Gerald Kirwin**, Borders/Maritime Division, Science and Technology Directorate, Department of Homeland Security
  - **Bob Knetl**, Borders/Maritime Division, Science and Technology Directorate, Department of Homeland Security
  - **David Newton**, Borders/Maritime Division, Science & Technology Directorate, Department of Homeland Security
  - **Pat Jones**, Office of Intelligence, Customs and Border Protection, Department of Homeland Security
- 2:15 Panel: Human Factors – Grand Ballroom
- Moderator: **Sharla Rausch**, Human Factors Division Head, Science & Technology Directorate, Department of Homeland Security
  - **Jennifer O'Connor**, Human Factors Division, Science & Technology Directorate, Department of Homeland Security
  - **Clark McCauley**, Bryn Mawr College, National Consortium for Study of Terrorism and Responses to Terrorism (START)
  - **Gary LaFree**, University of Maryland (START)
  - **David Baker**, Office of Intelligence and Analysis, Department of Homeland Security
- 3:15 Break  
Student Poster Session - Solarium

- 3:45 Panel: Infrastructure/Geophysical – Grand Ballroom
- Moderator: **Christopher Doyle**, Infrastructure and Geophysical Division, Science & Technology Directorate, Department of Homeland Security
  - **Mary Ellen Hynes**, Infrastructure and Geophysical Division, Science & Technology Directorate, Department of Homeland Security
  - **Jalal Mapar**, Department of Homeland Security
  - **Lou Marciani**, The University of Southern Mississippi, Southeast Region Research Initiative (SERRI)
  - **Tom Kirsch**, Johns Hopkins University, National Center for the Study of Preparedness and Catastrophic Event Response (PACER)
  - **Randy Rowell**, Morgan State University, PACER

- 4:45 Panel: Operations Analysis, Decision Support Simulation and Risk Analysis – Grand Ballroom
- Moderator: **Ervin Kapos**, Science and Technology Directorate, Department of Homeland Security
  - **George Thompson**, Homeland Security Institute, Department of Homeland Security
  - **Detlof von Winterfeldt**, University of Southern California, Center for Risk and Economic Analysis of Terrorism Events (CREATE)
  - **Adam Rose**, University of Southern California, CREATE
  - **Bob Ross**, Office of Special Programs, Science and Technology Directorate, Department of Homeland Security

- 5:45-6:45 Reception: Highlighting the Centers Students' Posters - Solarium



Homeland  
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Science and Technology

# First Annual DHS University Network Summit on Research and Education Agenda

**Friday, March 16, 2007**

## Center-Focused Research

The second day of the summit is structured around a plenary panel that addresses the collective capability of the DHS University Center Network, twelve concurrent panels that address cross-disciplinary topics, and a closing plenary talk on upcoming research and education opportunities.

Student poster sessions exhibited throughout the day - Solarium

- 8:00
- Roundtable: DHS University Center Directors Moderator: **Matthew Clark**, Director, Office of University Programs, Science & Technology Directorate, Department of Homeland Security
  - **Detlof von Winterfeldt**, CREATE
  - **Francis Busta**, NCFPD
  - **Neville Clarke**, FAZD
  - **Gary LaFree**, START
  - **Lynn Goldman**, PACER
  - **Chuck Haas**, CAMRA
  - **Fred Roberts**, UACs-IDS
  - **Jim Thomas**, RVACs
  - **Warren Edwards**, SERRI

10:00 Break  
Student Poster Session - Solarium

10:30 Concurrent Breakout Sessions, Round 1

SESSION 1.A.: CROSS-MEDIA INFORMATION IDENTIFICATION AND EXTRACTION – Degas Room, 2<sup>nd</sup> Level

- Moderator: **Joseph Kielman**, Department of Homeland Security
- **Deborah Cai**, University of Maryland, START: Coding Messages from al-Qa'ida Leaders for Reference, Target, and Persuasive Approaches
- **Eduard Hovy**, University of Southern California Information Sciences Institute, UACs-IDS: Extracting and Combining Information from Text Sources
- **Janyce Wiebe**, University of Pittsburgh, UACs-IDS: Extracting and Summarizing Events and Opinions in Text
- **Dan Roth**, University of Illinois at Urbana/Champaign, UACs-IDS: Semantic Abstraction and Integration Across Text Documents and Databases

SESSION 1.B.: GLOBAL TERRORISM THREATS – Caucus Room

- Moderator: **Gary La Free**, START
- **Steve Weber**, Program on International Policy Attitudes, START: [Attitudinal Factors in Passive Support for Terrorism against American Civilians](#)
- **Richard John**, University of Southern California, CREATE: [Estimating Likelihood of Terrorist Attacks by Modeling Terrorist Beliefs and Motivations](#)
- **Victor Asal**, University at Albany, State University of New York, START: [Organizations and the Turn to Terrorism](#)
- **Daniel Hamilton**, Johns Hopkins School of Advanced International Studies, PACER: [The Terrorist Threat in Europe and Implications for the U.S.](#)

SESSION 1.C.: RISK ANALYSIS: THREAT, VULNERABILITY, AND CONSEQUENCES OF TERRORISM – Renoir Room, 2<sup>nd</sup> Level

- Moderator: **Detlof von Winterfeldt**, CREATE
- **Shaun Kennedy**, University of Minnesota, NCFPD: [Systems Based Vulnerability and Risk Assessment](#)
- **Michael Orosz**, University of Southern California, FAZD: [The Risk Analyst Workbench: A Tool for Risk Assessment](#)
- **Henry Willis**, RAND Corporation, CREATE: [Risk-based Allocation of DHS Grants](#)
- **Detlof von Winterfeldt**, CREATE: [Should We Protect Commercial Airplanes Against Surface to Air Missile Attacks by Terrorists?](#)

SESSION 1.D.: MODELING POTENTIAL CHEMICAL/BIOLOGICAL EVENTS FOR PREPAREDNESS, RESPONSE AND RECOVERY EFFORTS – Grand Ballroom

- Moderator: **Francis Busta**, NCFPD
- **Andrew Jaine**, BTSafety, LLC, NCFPD: [Consequence Management System to Model Events and Interventions](#)
- **David Hartley**, University of Maryland School of Medicine, FAZD: [Rift Valley Fever Model](#)
- **Lori Mann Bruce**, Mississippi State University, SERRI: [Hyperspectral Imaging for Detecting the Application of Biochemical Agents to Food Crops](#)
- **Rachael Jones**, University of California, CAMRA: [A Markov Chain Model for Supermicron Particle Fate and Transport in Indoor Air](#)
- **Charles Haas**, Drexel University, CAMRA: [Use of Classical Environmental Risk Paradigms in the Context of Assessing Risk from Bio-agents](#)

SESSION 1.E.: DETECTION AND DIAGNOSTICS – Lafayette Room

- Moderator: **Garry Adams**, Texas A&M University, FAZD
- **Syed A. Hashsham**, Michigan State University, CAMRA: [Nucleic Acids-Based Methods with Enhanced Sensitivity and High Sample Throughput](#)
- **Gary Ackerman**, University of Maryland, START: [Who's Next? The Pursuit of CBRN Weapons](#)
- **Richard Rothman**, Johns Hopkins University, PACER: [Rapid Biothreat Diagnostics/Current State of Surveillance Systems](#)
- **Moises Sudit**, University of Buffalo, PACER: [Situational Detection is More than Just Sensor Detection](#)

SESSION 1.F.: ALL HAZARDS EMERGENCY RESPONSE - Quorum Room

- Moderator: **Elizabeth Phillips**, SERRI
- **Kathleen Tierney**, University of Colorado, START: Preparedness Networks: Crossing Sectors, Joining Jurisdictions
- **Gordon Skelton**, Jackson State University, SERRI: All Hazards Emergency Operations System
- **William Cooke**, Mississippi State University, SERRI: Capturing Hurricane Katrina Data for Analysis and Lessons-Learned Research
- **Elizabeth Casman**, Carnegie Mellon University, CAMRA: Risk Communication Planning for Dynamic Situations: The Aftermath of a Plague Bioattack
- **Michael Tobia**, New York and New Jersey Port Authority: An Operational Perspective

11:45 Lunch

Student Poster Session - Solarium

12:45 Concurrent Breakout Sessions, Round 2

SESSION 2.A.: CROSS-MEDIA INFORMATION IDENTIFICATION AND EXTRACTION (CONTINUED) – Degas Room, 2<sup>nd</sup> Level

- Moderator: **Dan Roth**, UACs-IDS/RVACs
- **William Ribarsky**, University of North Carolina at Charlotte, RVACs: Visual Analysis of Multimedia Data
- **Alan MacEachren**, Pennsylvania State University, RVACs: Geo-temporal Information Discovery
- **Moses Charikar**, Princeton University, UACs-IDS: Content-Based Similarity Search of Large Feature-rich Datasets
- **David Forsyth**, University of Illinois at Urbana/Champaign, UACs-IDS: Words and Pictures

SESSION 2.B.: RISK PERCEPTION AND COMMUNICATION - Quorum Room

- Moderator: **Kathleen Smarick**, START
- **Jean Kinsey**, University of Minnesota, NCFPD: Consumer Perception of Food Defense Spending and Priorities
- **Heather Rosoff**, University of Southern California, CREATE: What Do We Know About Public Perceptions of Terrorism Risks?
- **Donald Klingborg**, University of California, FAZD: Effective Risk Communication for the Nation's Food System
- **Dennis Mileti**, University of Colorado, START: Public Warnings for Protective Action

SESSION 2.C.: RESILIENT RESPONSES TO TERRORISM – Renoir Room, 2<sup>nd</sup> Level

- Moderator: **Lynn Goldman**, PACER
- **Monica Schoch-Spana**, Center for Biosecurity of the University of Pittsburgh Medical Center, START: Engaging the Public in Preparedness Planning
- **Adam Rose**, University of Southern California, CREATE: Economic Resilience in the Face of Terror
- **James Hodge**, Johns Hopkins Bloomberg School of Public Health, PACER: Pandemic and All Hazard Preparedness Act
- **Melissa McCarthy**, Johns Hopkins University, PACER: Medical Response

SESSION 2.D.: ECONOMIC TOOLS FOR OPTIMIZING INVESTMENTS IN CRITICAL INFRASTRUCTURE PROTECTION – Caucus Room

- Moderator: **Shaun Kennedy**, NCFPD
- **Peter Gordon**, University of Southern California, CREATE: [The Regional Economic Impacts of the 2005 Hurricanes on Refinery Operations in the Gulf of Mexico: Applying a Flexible Multi-regional Input-Output Model](#)
- **Susan Cutter**, University of South Carolina, START: [The Social Vulnerability Index: A County-Level Assessment of Communities and Implications for Preparedness Planning](#)
- **Thomas Stinson**, University of Minnesota, NCFPD: [Macro-economic Impacts of Terrorist Attacks](#)
- **Bruce McCarl**, Texas A&M University, FAZD: [Economic Evaluation of Preparedness, Response, and Recovery Strategies](#)

SESSION 2.E.: DETECTION AND DIAGNOSTICS (CONTINUED) – Lafayette Room

- Moderator: **Charles Haas**, CAMRA
- **Eric Johnson**, University of Wisconsin, NCFPD: [Botulinum Neurotoxin Sensing Solutions Complex Matrices](#)
- **Mansel Griffiths**, University of Guelph, NCFPD: [Extraction, Concentration & Detection of Toxins in Solid Food Systems Using Molecular Imprinted Polymer Films](#)
- **Carol Cardona**, University of California-Davis, FAZD: [Avian Influenza](#)
- **Garry Adams**, Texas A&M University, FAZD: [RVF and FMD Detection Methods](#)
- **Christopher Choi**, University of Arizona, CAMRA: [Prediction of Contaminants in Water Distribution Systems](#)

SESSION 2.F.: WORKFORCE DEVELOPMENT AT THE FRONTIER OF DHS SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS – Grand Ballroom

- Moderator: **Elizabeth Phillips**, SERRI
- **Hamilton Bean**, University of Colorado, START: [Working with the DHS University Network: A Student Perspective](#)
- **Sheldon Greenberg**, Johns Hopkins University, PACER: [First Responder Capacity Building](#)
- **Raphael Isokpehi**, Jackson State University, and **Rob Hochberg**, East Carolina University, SERRI: [A COE Network Approach to Workforce Development](#)
- **Gordon Skelton**, Jackson State University, SERRI: [Linking Education to Operations](#)
- **Robyn Mace**, Michigan State University: [Collective Capabilities: Creating Learners and Learning Environments for Infrastructure Protection](#)

2:00 Closing Session: Plenary Speech – Grand Ballroom

- **Starnes Walker**, Director of Research, Science & Technology Directorate, Department of Homeland Security  
Upcoming Research & Education Opportunities

3:00 Adjourn

## Acronyms

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**CAMRA** = Center for Advancing Microbial Risk Assessment

**CREATE** = Center for Risk and Economic Analysis of Terrorism Events

**FAZD** = National Center for Foreign Animal and Zoonotic Disease Defense

**UACs-IDS** = University Affiliate Centers to the Institute for Discrete Sciences

**NCFPD** = National Center for Food Protection and Defense

**NVAC** = National Visualization and Analytics Center

**PACER** = National Center for the Study of Preparedness and Catastrophic Event Response

**RVACs** = Regional Visualization and Analytics Centers

**SERRI** = Southeast Region Research Initiative

**START** = National Consortium for the Study of Terrorism and the Response to Terrorism



# Homeland Security

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## Science and Technology