Homeland Security
Science and Technology

The Third Annual DHS University Network Summit

March 17–19, 2009

Homeland Security University Programs
Today's Research & Education, Tomorrow's Security

Sponsored by the Office of University Programs, Science and Technology Directorate,
U.S. Department of Homeland Security

The Third Annual DHS University Network Summit

March 17–19, 2009

Partnerships for a Safer World

U.S. Department of Homeland Security
Washington, D.C. 20528

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March 17, 2009

I'm pleased to welcome you to this Third Annual DHS University Network Summit. This year's theme: *Partnerships for a Safer World: Today's - Research and Education…Tomorrow's Security* underscores the national imperative for partnership building. And this is the place to do it.

Dr. Matt Clark and his team are here, as well as many of the Directors and researchers from the COEs. The relationships you build here over the next few days will help all of us make the Nation safer.

I look forward to meeting you.

Sincerely,

Bradley I. Buswell
Under Secretary (Acting)
Science and Technology Directorate
U.S. Department of Homeland Security

U.S. Department of Homeland Security
Washington, D.C. 20528

Homeland Security

Science and Technology

March 17, 2009

It is my pleasure to welcome you to the third annual DHS University Network Summit on research and education sponsored by the DHS Science & Technology (S&T) Office of University Programs.

This year's theme is **PARTNERSHIPS FOR A SAFER WORLD**. We have gathered subject matter experts from academia, industry, government and the international community to address the most pressing homeland security research and educational challenges.

The S&T staff and the Centers of Excellence (COE) have assembled over 30 discussion panels on a broad range of critical topics such as border security, explosives detection and biological threat detection. These panels highlight the collaborations that the thirteen DHS COEs and their over 200 partners have made in support of the DHS S&T mission.

Attendees will have the opportunity to hear first-hand from DHS S&T leadership and, leaders of the DHS COEs about current and planned homeland security research areas and the educational opportunities that S&T has established. In addition, we encourage you to visit the exhibitions, participate in workshops and, view live demonstrations.

Thank you for your participation. We look forward to meeting you!

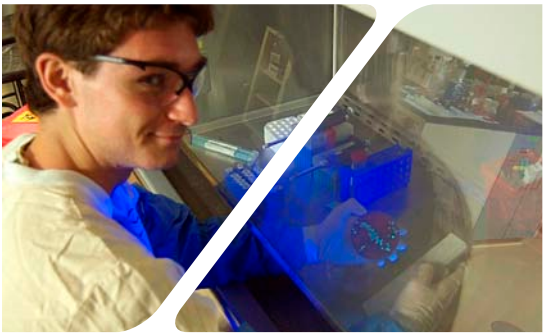
Sincerely,

Matthew Clark, Ph.D.
Director, University Programs
Science and Technology Directorate
Department of Homeland Security

PARTNERSHIPS FOR A SAFER WORLD

2009

AGENDA



Homeland Security University Programs
TODAY'S RESEARCH & EDUCATION, TOMORROW'S SECURITY

Tuesday, March 17th, 2009

8:00 am – 8:10 am	**Welcome Ceremony:** U.S. Customs and Border Protection National Honor Guard will post the colors and Linda Gray will sing the National Anthem	
	Welcome: Dr. Matthew Clark, Director of University Programs for Science and Technology	
8:10 am – 8:30 am	**Keynote Speaker:** Janet Napolitano, Secretary for the U.S. Department of Homeland Security - Invited	
8:30 am – 9:00 am	**Keynote Speaker:** Bradley Buswell, Acting Under Secretary for Science and Technology - Invited	
9:00 am – 10:00 am	**Plenary 1: Human Factors and Behavioral Sciences**	
	Topic: Data Needs for Radicalization Studies: Partnering Challenges **Moderator:** Rick Lempert **Panel Members:** Gary Ackerman Marc Sageman Allison Smith	
10:00 am – 10:15 am	**Break**	
10:15 am – 11:15 am	**Plenary 2: Borders and Maritime Security**	
	Topic: Achieving Border and Maritime Security: Partnership, Collaboration and Integration **Co-Moderators:** Jeanne Lin and Theo Gemelas **Panel Members:** Michael Bruno Jay Nunamaker Jose Riojas Roy Wilkens	
11:15 am – 12:15 pm	**Plenary 3: Centers of Excellence Projects**	
	Research Project: Understanding the Dynamics that Drive IEDs **Panel Members:** Gary LaFree Allison Smith	**Research Project:** Port Operations Modeling for Security Risk Management and Resource Allocation (PORTSEC) **Panel Members:** David Cooper George Cummings Isaac Maya Michael Orosz
12:15 pm – 1:30 pm	**Lunch**	
	Keynote Speaker: Admiral James Loy	
1:30 pm – 1:45 pm	**Transition to Breakout Sessions**	

1:45 pm – 3:15 pm	**Breakout Sessions: End Users and COEs**				
	Panel 1:	**Panel 2:**	**Panel 3:**	**Panel 4:**	**Panel 5:**
	Topic: Risk Analysis for Homeland Security Solutions **Moderator:** Vicki Bier **Panel Members:** James Curren Richard John Don Kleinmuntz Milind Tambe	**Topic:** The Global Terrorism Database: An Expanded and Revised Resource for Understanding Trends in Terrorism **Moderator:** Kathleen Smarick **Panel Members:** Charles Blair Laura Dugan Gary LaFree John Wigle	**Topic:** Detection and Rapid Screening in a Border Environment **Moderator:** Elyse Golob **Panel Members:** Jason Ackleson Troy Brown Jay Nunamaker	**Topic:** Sensor Technologies to Support Maritime Domain Awareness **Moderator:** Roy Wilkens **Panel members:** Curt Dubay Scott Glenn Buck Sharpton Frank Sisto	**Topic:** Student Research on Social Network Analysis of Terrorism and Responses to Terrorism **Moderator:** Kate Worboys **Panel Members:** Ian Anderson Christine Bevc David Caspi James Hendrickson Alexandra Jordan
3:15 pm – 3:30 pm	**Transition: 'Snack and Chat'**				
3:30 pm – 5:00 pm	**Breakout Sessions**				
	Panel 6:	**Panel 7:**	**Panel 8:**	**Panel 9:**	**Panel 10:**
	Topic: Economic Consequence and Resilience Analysis **Moderator:** Adam Rose **Panel Members:** Brock Blomberg Carol Mansfield Bruce McCarl Kerry Smith Jeff Werling	**Topic:** Dissent, Extremism, and Terrorism: Understanding the Range of Actors **Moderator:** Kathleen Smarick **Panel Members:** Victor Asal Steven Chermak Joshua Freilich Brent Smith Jonathan Wilkenfeld	**Topic:** Interagency Cooperation and Customer-Based Support Approach to Border Security and Immigration **Moderator:** Luis Barker **Panel Members:** Ronald Colburn Mark Haselkorn Robert Jacksta Richard Posthuma	**Topic:** Marine Transportation Systems (MTS) Resiliency and Continuity of Operations **Moderator:** Michael Bruno **Panel members:** Todd Owen James Rice Jr. Bethann Rooney Brian Sauser	**Topic:** Using Stakeholder Input to Develop Multi-Institutional Graduate Education Programs **Moderator:** Curtis Kastner **Panel Members:** Richard Linton Abbey Nutsch

Wednesday, March 18th, 2009

8:00 am – 8:05 am	**Welcome:** Starnes Walker, Director of Research for Science and Technology	
8:05 am – 9:00 am	**Keynote Speaker:** Congressman Bennie Thompson, Chairman of the Homeland Security Committee - Invited	
	Keynote Speaker: Detlof von Winterfeldt, Director, International Institute for Applied Systems Analysis, Austria	
9:00 am – 10:00 am	**Plenary 4: Infrastructure and Geophysical**	
	Topic: Minimizing Disruptions for a Resilient America **Moderator:** Nabil Adam **Panel Members:** Chris Doyle Keith Holtermann Gabe Kelen Colonel Merrick E. Krause Gavin Smith	
10:00 am – 10:15 am	**Break**	
10:15 am – 11:15 am	**Plenary 5: Explosives**	
	Topic: Basic Research Needs to Address the Counter-IED Threat **Moderator:** Doug Bauer **Panel Members:** Ruth Doherty Robert Dye Daniel Shevitz Michael Silevitch Jimmie Oxley	
11:15 am – 12:15 pm	**Plenary 6: Centers of Excellence Projects**	
	Research Project: The Scientific Basis for the Creation of Medical Surge Capacity **Panel Members:** Gabor Kelen Nitin Natarajan James Scheulen	**Research Project:** Community And Regional Resilience Initiative (CARRI) **Panel Members:** Warren Edwards Tom Wilbanks
12:15 pm – 1:30 pm	**Lunch**	
	Keynote Speaker: *TBD*	
1:30 pm – 1:45 pm	**Transition to Breakout Sessions**	

1:45 pm – 3:15 pm	**Breakout Sessions: End Users and COEs**				
	Panel 11:	**Panel 12:**	**Panel 13:**	**Panel 14:**	**Panel 15:**
	Topic: Seeking Partnerships through New Research Initiatives **Moderator:** Rick Luettich **Panel Members:** Jennifer Butler Baxter Vieux Margery Overton	**Topic:** Infrastructure of the Future **Moderator:** Mila Kennett-Reston **Panel Members:** Michael Accorsi A.F.M. Anwar Kevin Hall George Rossetti	**Topic:** Detection and Surveillance of Biothreats and Emerging Infectious Diseases **Moderator:** Lynn Goldman **Panel Members:** Frank Busta Padmini Ramachandran Richard Rothman	**Topic:** Towards a Comprehensive Counter IED Program: Video Analytics **Co-Moderators:** David Castañon Michael Silevitch **Panel Members:** John Pearson Jimmie Oxley Richard Radke Venkatesh Saligrama Mario Sznaier	**Topic:** Intercity Bus and Rail Educational and Training Activities **Moderator:** Michael Tobia **Panel Members:** Vincent Henry Chris Kozub Abdul Turay
3:15 pm – 3:30 pm	**Transition: 'Snack and Chat'**				
3:30 pm – 5:00 pm	**Breakout Sessions**				
	Panel 16:	**Panel 17:**	**Panel 18:**	**Panel 19:**	**Panel 20:**
	Topic: Coastal and Ocean Engineering Education: Relative Focus on Natural Disaster **Moderator:** Robert Whalin **Panel Members:** Bob Dean Billy Edge	**Topic:** Improving Security and Reducing Vulnerabilities in Transportation **Moderator:** Amy Donahue **Panel Members:** Frances Edwards Carol Lewis	**Topic:** Community Resiliency **Moderator:** Lynn Goldman **Panel Members:** Terri Adams-Fuller Thomas Kirsch Kathleen Tierney	**Topic:** Toward a Comprehensive Counter-IED Program **Moderator:** Jimmie Oxley Co-Moderator: Rich Moro **Panel Members:** Robert Lieberman William Marinelli Arun Shukla	**Topic:** Infrastructure Resiliency **Moderator:** Michael Matthews **Panel Members:** Mustafa Altinakar Frank DeNap Warren Edwards

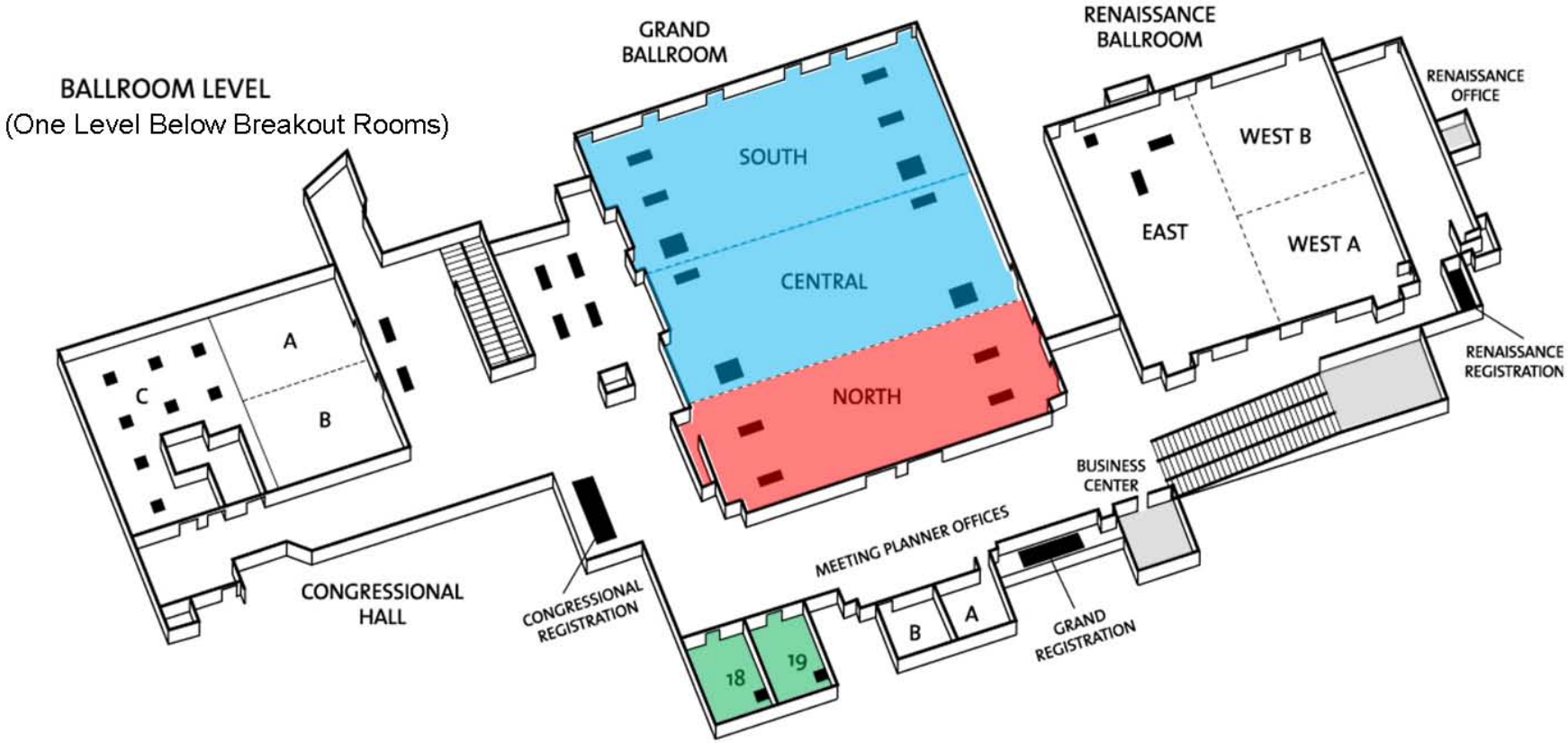
Thursday, March 19th, 2009

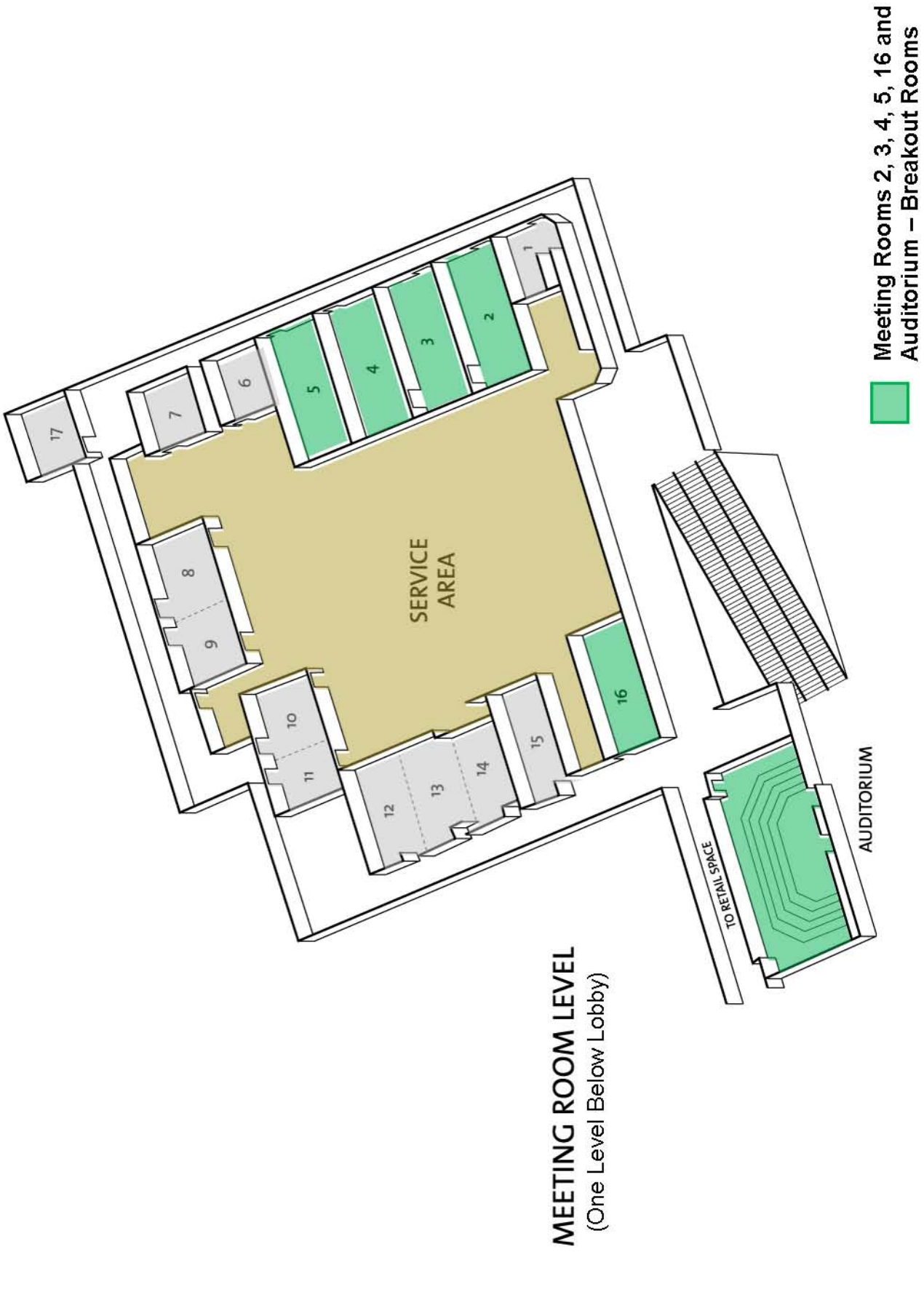
8:00 am – 8:10 am	**Welcome:** Rolf Dietrich, Deputy Director of Research for Science and Technology		
8:10 am – 9:00 am	**Keynote Speaker:** *TBD*		
	Keynote Speaker: Harold J. Raveché, President of Stevens Institute of Technology		
9:00 am – 10:00 am	**Plenary 7: Command, Control and Interoperability**		
	Topic: Coast Guard, Port and University Co-Creation of Regional Research for Enhanced Maritime Security and Societal Resilience **Moderator:** Joe Kielman **Panel Members:** Suzanne Englebert Mark Haselkorn Gael Tarleton		
10:00 am – 10:15 am	**Break**		
10:15 am – 11:15 am	**Plenary 8: Chemical and Biological**		
	Topic: Research Needs of the Chemical and Biological Division **Moderator:** Keith Ward **Panel Members:** Neville Clarke Chuck Haas Pete Pesenti		
11:15 am – 12:15 pm	**Plenary 9: Centers of Excellence Projects**		
	Research Project: Food Agriculture Sector Criticality Assessment Tool (FAS-CAT) **Panel Members:** John Hoffman Paul Williams	**Research Project:** Industry Applications of Modeling Catastrophic Disease Effects in Confined Livestock Operations **Panel Members:** Ross Wilson	**Research Project:** Future Needs and Uses for Quantitative Microbial Risk Assessment (QMRA) **Panel Members:** Stephen Morse Stig Regli Alan Roberson
12:15 pm – 1:30 pm	**Lunch**		
	Keynote Speaker: David F. Aguilar, Chief, Border Patrol		
1:30 pm – 1:45 pm	**Transition to Breakout Sessions**		

1:45 pm – 3:15 pm	**Breakout Sessions: End Users and COEs**				
	Panel 21:	**Panel 22:**	**Panel 23:**	**Panel 24:**	**Panel 25:**
	Topic: Consequence Modeling for Systems-Based Infrastructures **Moderator:** Frank Busta **Panel Members:** Emma Hartnett John Hoffman Mike Orosz Fred Roberts	**Topic:** Biological Systems for Foreign Animal and Zoonotic Defense **Moderator:** Gary Snowder **Panel Members:** Garry Adams Tammy Beckham Beth Lautner CJ Peters	**Topic:** Advancing Exposure Science **Moderator:** Chuck Haas **Panel Members:** Ryan Austin Patrick Gurian Syed Hashsham Mark Weir	**Topic:** Research to Reality **Moderator:** David Ebert **Panel Members:** Alan MacEachren William Pike William Ribarsky	**Topic:** Critical Pathways to 21st Century National Security Careers **Moderator:** Van Reidhead **Panel Members:** Lenora Peters-Gant Sandra Hansmann Xi Chen Jason Ackleson Justin Kastner Anne Ohlrich Raphael Isokpehi Edu Suarez-Martinez
3:15 pm – 3:30 pm	**Transition: 'Snack and Chat'**				
3:30 pm – 5:00 pm	**Breakout Sessions**				
	Panel 26:	**Panel 27:**	**Panel 28:**	**Panel 29:**	**Panel 30:**
	Topic: Risk Communication as an Intervention Strategy **Moderator:** Timothy Sellnow **Panel Members:** Anthony Flood Robert Littlefield Matthew Seeger	**Topic:** Models and Databases for Decision-Makers on Foreign Animal and Zoonotic Diseases **Moderator:** Neville Clarke **Panel Members:** Bruce McCarl Ross Wilson	**Topic:** Advancing Consequence Modeling and Decision-Making **Moderator:** Chuck Haas **Panel Members:** **Jade Blackwood** Patrick Gurian Tao Hong Yin Huang Toru Watanabe Mark Weir	**Topic:** Visual Analytics and Discrete Science Integration into the DHS Center of Excellence Program **Moderator:** David Ebert **Panel Members:** Mark Haselkorn Bill Ribarsky	**Topic:** Student Research in Visual Analytics For A Safer Nation **Moderator:** Alan MacEachren **Panel Members:** **Carsten Görg** Ross Maciejewski Brian Tomaszewski
5:00 pm – 5:30 pm	**Closing:** Dr. Matthew Clark, Director of University Programs for Science and Technology				
	Closing Ceremony: CBP National Honor Guard				

RENAISSANCE®
WASHINGTON, DC HOTEL

- Grand Ballroom South and Central – General Session
- Grand Ballroom North - Luncheon
- Meeting Rooms 18 & 19 - Ad Hoc Meeting Rooms (available Wednesday – Friday)




Meeting Rooms 2, 3, 4, 5, 16 and Auditorium – Breakout Rooms
MEETING ROOM LEVEL
(One Level Below Lobby)
SERVICE AREA
TO RETAIL SPACE
AUDITORIUM
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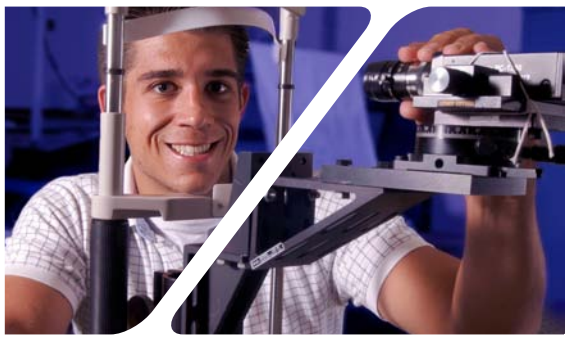
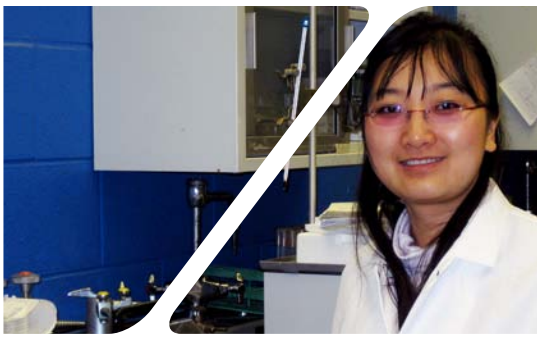


PARTNERSHIPS FOR A SAFER WORLD

2009

SESSION DESCRIPTIONS



HOMELAND SECURITY UNIVERSITY PROGRAMS
TODAY'S RESEARCH & EDUCATION, TOMORROW'S SECURITY

PLENARY SESSION DESCRIPTIONS

Tuesday, March 17th, 2009

Plenary 1: Human Factors Behavior Sciences Division

Title: Data Needs for Radicalization Studies: Partnering Challenges

This panel will focus on the types of data required for different radicalization studies, the quality and availability of data, and the potential synergies between quantitative and qualitative information. The panel will also discuss issues relating to data collection and organization, with special attention to the value added that partnerships can provide.

Plenary 2: Borders and Maritime Division

Title: Achieving Border and Maritime Security: Partnership, Collaboration and Integration

The panel will discuss how the Border and Maritime Centers of Excellence are working on projects that have led to—or could potentially lead to—private/public and other partnerships, collaboration and integration with other centers of excellence and governmental agencies, etc.

Plenary 3: START and CREATE Centers of Excellence

Center: The National Consortium for the Study of Terrorism and Responses to Terrorism (START)

Title: Understanding the Dynamics that Drive IEDs

The National Consortium for the Study of Terrorism and Reponses to Terrorism (START), based at the University of Maryland, is aligned with the Human Factors/Behavioral Science Division (HF/BSD) in S&T. This panel will showcase the collaborative research START and HF/BSD have collected to better understand the dynamics that drive the usage of improvised explosive devices.

Center: The Center for Risk & Economic Analysis of Terrorism Events (CREATE)

Title: Port Operations Modeling for Security Risk Management and Resource Allocation (PORTSEC)

This panel will be presenting on port-risk–analysis assessments and resources-allocation analysis. CREATE is working closely with Ports of Los Angeles and Long Beach (POLA/LB) port personnel to ensure experience-based security and operational issues of primary interest are accurately modeled, while providing flexibility to explore alternative security strategies and technology deployments. CREATE is also working closely with Coast Guard personnel to ensure the model is consistent with MSRAM approaches, models, and results.

Wednesday, March 18th, 2009

Plenary 4: Infrastructure Geophysical Division

Title: Minimizing Disruptions for a Resilient America

This plenary session will highlight the division's research and development activities focusing on minimizing disruptions of the nation's critical infrastructure and key resources, thus achieving a better resiliency against all hazards. The session will also include a discussion of the ongoing collaboration with the COEs as well as partnership with the division's customers.

Plenary 5: Explosives

Title: Basic Research Needs to Address the Counter-IED Threat

The Los Alamos National Laboratory (LANL) has partnered with DHS S&T to help identify the most promising basic research for transformative breakthroughs in IED detection. LANL will provide a discussion of the extensible logic modeling (ELM) research they are conducting to help manage complex problems. This tool will be adapted to the C-IED threat to demonstrate the interdependencies and countermeasures in a flow diagram. This will determine the outcomes of possible threats and rank order of their impact. More importantly, this will help identify the specific areas to invest explosive- and device-detection resources in hopes of defeating potential threats.

Plenary 6: PACER and SERRI

Center: The National Center for the Study of Preparedness and Catastrophic Event Response (PACER)

Title: The Scientific Basis for the Creation of Medical Surge Capacity

This plenary session will cover major scientific advances in understanding the creation of medical surge capacity in the nation and its components. The panel will also discuss the decision-support tools, applets, and web tools.

Center: South East Region Research Initiative (SERRI)

Title: Community and Regional Resilience Initiative (CARRI)

This panel will highlight the Community and Regional Resilience Initiative (CARRI). The goal of CARRI is to develop resilient communities to reduce vulnerabilities related to development paths, and to strengthen each community's ability to prepare for, respond to, and rapidly recover from any significant man-made or natural disasters with minimal downtime to basic community, government, and business services.

Thursday, March 19th, 2009

Plenary 7: Command Control and Interoperability

Title: Coast Guard, Port and University Co-Creation of Regional Research for Enhanced Maritime Security and Societal Resilience

This session presents issues associated with the Puget Sound region's ongoing co-creation and implementation of a project to enhance regional resilience by incorporating economic and service interdependencies into maritime security planning, decision-making, and consequence management. This plan includes a resiliency-building strategy to develop visual analytic tools to facilitate and optimize decision-making during and after an incident.

Plenary 8: Chemical and Biological Division

Title: Research Needs of the Chemical and Biological Division

Through its research efforts, the Chemical and Biological Division (CBD) leverages scientific exploration that can be exploited to promote the development and transition of next-generation chemical and biological countermeasures. The panel members will discuss the ways the CBD is aiding in the nation's preparedness against chemical and biological threats through improved awareness, advanced surveillance and detection, and protective countermeasures, as well as the challenges they must overcome.

Plenary 9: NCFPD, FAZD, and CAMRA Centers of Excellence

Center: National Center for Food Protection & Defense (NCFPD)

Title: Food Agriculture Sector Criticality Assessment Tool (FAS-CAT)

The National Center for Food Protection and Defense (NCFPD), in collaboration with the Foreign Animal and Zoonotic Disease Center (FAZD) and the Center for Risk and Economic Analysis of Terrorist Events (CREATE), will be discussing the Food Agriculture Sector Criticality Assessment Tool (FAS-CAT). The FAS-CAT is a novel methodology and tool to help consistently identify critical assets on a national basis in the food and agriculture sector and to provide reporting mechanisms to DHS. The tool is designed to assist states, in partnership with both the private sector and other regional states as appropriate, in determining the most critical elements, nodes and subsystems in the food and agriculture infrastructure.

Center: The National Center for Foreign Animal and Zoonotic Disease Defense (FAZD)

Title: Industry Applications of Modeling Catastrophic Disease Effects in Confined Livestock Operations

An industry leader representing the Texas Cattle Feeders Association will discuss how the research from the FAZD Center assists in creating awareness and developing strategies to mitigate the effects of catastrophic foreign diseases.

Center: Center for Advancing Microbial Risk Assessment (CAMRA)

Title: CAMRA Future Needs and Uses for Quantitative Microbial Risk Assessment (QMRA)

Quantitative microbial risk assessment (QMRA) is a framework whereby a quantitative assessment can be made on the basis of dose-response functions for an organism and its exposure pathways. A number of individuals from the water industry regulatory agencies, as well as health professionals, will be discussing their interest in using this new technology.

BREAKOUT SESSION DESCRIPTIONS

Tuesday, March 17th, 2009

Panel 1: The Center for Risk & Economic Analysis of Terrorism Events (CREATE)

Title: Risk Analysis for Homeland Security Solutions

Risk and decision analysis are crucial to achieving effective and cost-effective resource allocations for defense against terrorism. This session will discuss the use of decision analysis to study terrorist objectives and to estimate the risk of attack, methods for prioritizing threats, and optimization of defensive resource allocations. The presentations will address the application of these methods both to fixed capital investments in security measures (that cannot easily be changed in the short term) and also to mobile security resources (whose allocation can be randomized to reduce predictability and improve effectiveness). The session will include case studies in which agencies with responsibility for security actually acted on the results of the risk analysis to improve their resource allocations. Although allocating resources for defense against terrorism will remain a challenging task, the methods discussed here can help contribute to more defensible, effective, and cost-effective allocations of scarce defensive resources.

Panel 2: The National Consortium for the Study of Terrorism and Responses to Terrorism (START)

Title: The Global Terrorism Database: An Expanded and Revised Resource for Understanding Trends in Terrorism

With over 80,000 incidents of terrorism spanning almost four decades, the Global Terrorism Database (GTD) is the world's largest open-source terrorism database. Coinciding with the 2009 DHS Summit Conference, the GTD's web-based beta site is being updated with a new interface and a fully synthesized data set that includes cases from 1970 through 2007. Panelists will demonstrate the new web site, reveal trends in terrorism based on the GTD's unparalleled scope and detail, and describe the GTD's overall utility for understanding and responding to terrorism.

Panel 3: Border Security & Immigration – University of Arizona

Title: Detection and Rapid Screening in a Border Environment

This panel will discuss interaction awareness techniques that can be used to identify deception and hostile intent during agent encounters with suspicious entrants at U.S. borders, as well as the technologies used to detect concealed explosive materials.

Panel 4: The Center for Island, Maritime and Extreme Environment Security (CIMES) – University of Hawaii

Title: Sensor Technologies to Support Maritime Domain Awareness

The National Center for Island, Maritime, and Extreme Environment Security (CIMES) panel will discuss existing and planned cooperation between university researchers and DHS agencies that look to the future to see what significant areas need to be addressed in academic laboratories, such as developing ocean-observing programs that concentrate on the natural environment combined with the ephemeral human presence.

Panel 5: Education

Title: Student Research on Social Network Analysis of Terrorism and Responses to Terrorism

This panel will present a series of graduate student research projects from the National Consortium for the Study of Terrorism and Responses to Terrorism (START). Students from the disciplines of criminology, sociology, and public policy

will discuss research on global terrorist alliances, Al-Qaeda networks, white supremacist networks, and networks of emergency-preparedness-and-response professionals.

Panel 6: The Center for Risk & Economic Analysis of Terrorism Events (CREATE)

Title: Economic Consequence and Resilience Analysis

This session will report on two major areas of progress in the analysis of the economic consequences of terrorist attacks. The first is the result of a CREATE initiative called the Economic Impact Modeling Forum (EIMF), which involves a consensus research process to arrive at definitive estimates of the consequences of a terrorist attack. The presentations will report on the analysis of the impacts of the September 11th attacks on the U.S. economy using a macroeconometric model and time series analysis. The second area deals with resilience or the ability to reduce the loss in business interruption after a terrorist event takes place. For example, this can be accomplished by strengthening infrastructure to withstand the shock or by reducing the demand for infrastructure services through conservation or substitution of other goods. The studies presented will analyze ways to induce actions by private citizens that complement, rather than substitute for, actions of infrastructure providers. The papers will also examine the tradeoffs between pre-attack mitigation and post-attack resilience in the case of a terrorist-induced animal disease outbreak.

Panel 7: The National Consortium for the Study of Terrorism and Responses to Terrorism (START)

Title: Dissent, Extremism, and Terrorism: Understanding the Range of Actors

This panel, consisting of researchers associated with the START Center of Excellence, will explore the dynamics of terrorists and terrorist groups both in the United States and around the world in order to provide insights about the nature of these actors. To highlight differences between nonviolent and violent actors, the panel will also discuss the nature of individuals and groups that have political grievances but do not engage in terrorist activity.

Panel 8: Border Security and Immigration – University of Texas at El Paso

Title: Interagency Cooperation and Customer-Based Support Approach to Border Security and Immigration

This panel will focus on interagency cooperation as part of the strategy and foundation for an effective and sustainable border security effort. Border security representatives will further discuss the delivery of support they receive from the University of Texas at El Paso.

Panel 9: The Center for Maritime, Island and Remote/Extreme Environment (MIREES) – Stevens Institute of Technology

Title: Marine Transportation Systems (MTS) Resiliency and Continuity of Operations

This session will cover the ongoing research and industry practices that address the resiliency of the Marine Transportation Systems (MTS) System of Systems (SOS). The SOS is a complex network of enterprises. The panel will further describe the efforts to define a system's vulnerability to potential disruption and its adaptive capacity to recover to an acceptable level of service within a reasonable timeframe after being affected.

Panel 10: Education

Title: Using Stakeholder Input to Develop Multi-Institutional Graduate Education Programs

NCFPD will discuss the importance and the challenges associated with food safety and food defense efforts. Purdue

University, Kansas State University and Indiana University have been working together with vital food-defense stakeholders to develop a comprehensive educational program in food safety and food defense. This collaborative effort incorporated a scientifically sound process known as DACUM (developing a curriculum) to identify desired skills, knowledge, behaviors, and attitudes that serve as the foundation for a curriculum for food safety and food defense for both graduate students and professionals.

Wednesday, March 18th, 2009

Panel 11: Natural Disasters, Coastal Infrastructure and Emergency Management (NDCIEM) - University of North Carolina

Title: Seeking Partnerships through New Research Initiatives

This session will describe the funded research being undertaken by the Center for the Study of Natural Disasters, Coastal Infrastructure and Emergency Management (NDCIEM). PIs from each of the research focus areas—hazard modeling, engineering, social science, and planning—will describe their research agendas. This will include project descriptions and how they fit into the larger purpose of the center. Next, each presenter will solicit input from members of the audience to seek out possible collaborative opportunities.

Panel 12: National Transportation Security – University of Connecticut

Title: Infrastructure of the Future

The National Transportation Security Center of Excellence will provide insight on transportation infrastructure of the future. This will include the application of innovative technologies that will lead to a more resilient transportation infrastructure.

Panel 13: The National Center for the Study of Preparedness and Catastrophic Event Response (PACER)

Title: Detection and Surveillance of Biothreats and Emerging Infectious Diseases

Biothreats and emerging infectious diseases represent a significant threat to the medical and public health systems. A variety of methods have been developed to provide early warning and to improve preparedness and response to such events. This session will highlight the various aspects of early detection methods, as well as the design, implementation, and effectiveness of the said methods.

Panel 14: Explosives – Northeastern University

Title: Towards a Comprehensive Counter-IED Program: Video Analytics

This breakout session will focus upon the use of video analytics as a key element in a multisensor strategy to detect and defeat Improvised Explosive Devices (IEDs).

Panel 15: Education – Tougaloo College

Title: Intercity Bus and Rail Educational Activities and Training Programs

This panel will provide valuable insight into the development of several educational and training initiatives related to the newly established National Transportation Security Center of Excellence (NTSCOE) for intercity bus and rail operations. The panel will also address one or more projects that support the 911 legislation, section 1205 of appropriations, and the national strategic objectives.

Panel 16: Natural Disasters, Coastal Infrastructure and Emergency Management (NDCIEM)

Title: Coastal and Ocean Engineering Education: Relative Focus on Natural Disasters

The panel will discuss existing coastal and ocean engineering programs, undergraduate and graduate, in the United States. The discussions will describe their relative focus on natural disasters. The curricula for the Jackson State University undergraduate and graduate concentrations in coastal engineering in their BS and MS programs in civil engineering will be discussed in detail. These programs focus on natural disasters and are an integral component of the Center of Excellence for Natural Disasters, Coastal Infrastructure and Emergency Management.

Panel 17: National Transportation Security – Texas Southern University

Title: Improving Security and Reducing Vulnerabilities in Transportation

This panel will discuss technological methodologies used to improve security and reduce vulnerabilities in transportation. Texas Southern University, the lead research university in the National Transportation Security Center of Excellence for Petrochemical Security, will provide an overview of their efforts to investigate and advance methods and strategies that will increase the resilience of the nation's multimodal infrastructure to terrorist attack on the movement of petrochemicals.

Panel 18: The National Center for the Study of Preparedness and Catastrophic Event Response (PACER)

Title: Community Resiliency

This panel will explore the role of increasing the ability of the affected community to respond to and recover from a disaster. Panelists will discuss research and practical experiences regarding spontaneous volunteers and volunteer organizations, police and other resiliency personnel, and general community preparedness. Specific strategies and recommendations will be presented for a general discussion by the panel and audience.

Panel 19: Explosives – University of Rhode Island

Title: Toward a Comprehensive Counter-IED Program

This session will consider a comprehensive approach to countering Improvised Explosive Devices (IEDs). The components of the approach are identifying and administratively tracking the high-threat precursor chemicals; denaturing or replacing such chemicals in select streams of commerce; targeting detection of high-threat materials; and preparation to mitigate the blast.

Panel 20: Kentucky Critical Infrastructure protection Institute Program (KCI) and Southeast Region Research Initiative (SERRI) Collaboration

Title: Infrastructure Resiliency

This presentation will highlight a number of projects focused on infrastructure resiliency that demonstrate the successful collaboration between universities, commercial entities, end-users and DHS S&T. The highlighted projects include the development of a web-enabled software suite, MITOC hardware (MITOC is a man-portable communications and processing platform), and a simulation-based decision-support system for water infrastructural security (DSS-WISE).

Thursday, March 19th, 2009

Panel 21: National Center for Food Protection & Defense (NCFPD)

Title: Consequence Modeling for Systems-Based Infrastructures

Consequence modeling supports many aspects of short- and long-term decision-making and is integral to vulnerability and risk assessment. Examples of system-based infrastructures include the global food system, the complex meat animal and poultry production systems, the public and animal health systems and interactions among them. These relate closely to the "one health" or "one medicine" concept that has been gaining interest. Conventional models are challenged by site-specific information and uncertainties of how events and actions at one point in the system impact other points in the system. In addition, there are limitations on the accessibility of data to characterize the systems to populate the models. Consequently, readily available databases and networking of models are reasonable goals. DHS Centers of Excellence present the opportunity and framework for new approaches, collaboration, cooperation, and linkages leading to improved communication to bring mechanisms to stakeholders for transitioning meaningful science through consequence modeling into effective practice.

Panel 22: The National Center for Foreign Animal and Zoonotic Disease Defense (FAZD)

Title: Biological Systems for Foreign Animal and Zoonotic Diseases

In this session, members of partnerships among researchers, federal agencies, and diagnostic laboratories will discuss the transition of newly developed biological vaccines and diagnostics for foreign zoonotic pathogens, such as the Rift Valley fever virus. The director of the National Veterinary Services will discuss the challenges of transitioning research results and theory to industry practice as well as the approvals needed to commercialize and gain acceptance into the National Veterinary Stockpile. The director of the Texas Veterinary Diagnostic Laboratory will highlight the added value that the National Animal Health Laboratory Network will gain from the application of these biologics.

Panel 23: Center for Advancing Microbial Risk Assessment (CAMRA)

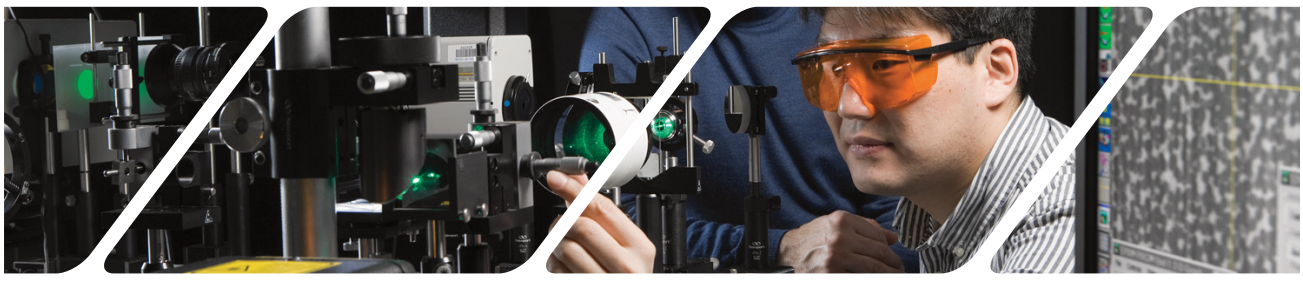
Title: Advancing Exposure Science

Researchers from the Center for Advancing Microbial Risk Assessment will discuss the infectious disease paradigm by going beyond simple human-to-human transmission to include environment-to-human and human-to-environment-to-human transmission pathways. This presentation will also include microbial and environmental interactions in risk estimates, predictions describing the movement or spread of disease within a population, and the vital level of realism needed for assessing risks associated with deliberate bio-terror attacks.

Panel 24: Command, Control and Interoperability (C2I)

Title: Research to Reality

A key challenge for command, control, and interoperability research is in the transfer from research to reality. In this panel, several examples of transitioning visual analytics research into robust technical solutions that are actively used by a variety of clients will be discussed.



Panel 25: Education

Title: Critical Pathways to 21st Century National Security Careers

Panelists will discuss graduate and undergraduate education programs designed in collaboration with DHS and government agencies to prepare the 21st century workforce to address national security challenges, opportunities, and threats. In particular, it will focus on critical skill development strategies at minority serving institutions (MSIs) designed to prepare a diverse workforce for DHS and other federal agencies. The panelists will also discuss interdisciplinary approaches designed to meet the needs of traditional students and active professionals; and diverse approaches to the educational challenges required for national security.

Panel 26: National Center for Food Protection & Defense (NCFPD)

Title: Risk Communication as an Intervention Strategy

The panelists will provide a comprehensive view of risk communication that extends beyond information exchange to include the potential for interception messages to serve as a means of crisis intervention. Building from the comprehensive examination of targeted food system events, the panelists will identify key points of intervention during a recall or crisis event where risk communication can serve as means of mitigating harm. Practical strategies for effectively engaging underrepresented and multicultural populations in the preparation for, and prevention of, crisis events are emphasized. In addition, approaches for cooperative research and training with risk communication practitioners in industry and government are discussed.

Panel 27: The National Center for Foreign Animal and Zoonotic Disease Defense (FAZD)

Title: Models and Databases for Decision-Makers on Foreign Animal and Zoonotic Diseases

In this session, discussions will focus on delivery of reliable information and assessments. Results from scenario modeling of a vector-borne zoonotic disease, such as Rift Valley fever, will demonstrate the importance of pre-assessing the impact of a catastrophic disease to develop appropriate policies and agency responses. Applications of these decision-support systems for emergency responders to livestock disease events will be discussed by the director of the Interagency Coordination for USDA, APHIS. Discussions will also address the importance of and approaches for comprehensive surveillance of exotic livestock and zoonotic diseases at national and international levels.

Panel 28: Center for Advancing Microbial Risk Assessment (CAMRA)

Title: Advancing Consequence Modeling and Decision-Making

CAMRA researchers will cover dose-response models for Class A bio-terror agents. These models allow researchers to estimate the number of microbes that constitutes a real risk to people and how to respond to incidents.

Panel 29: Command, Control and Interoperability (C2I)

Title: Visual Analytics and Discrete Science Integration into the Center of Excellence Program

Visual analytics enables people to make sense rapidly of uncertain, complex, and diverse data sources. The focus of discrete science is developing simpler, more efficient algorithms and architectures for use in a broad range of data-intensive computing applications. In this panel, C2I researchers will discuss the ways to apply visual analytics and discrete science techniques to Centers of Excellence problems. They will also highlight successful collaborations.

Panel 30: Education

Title: Student Research in Visual Analytics for a Safer Nation

Students in the DHS Regional Visualization and Analytics Centers (RVACs) have been exploring novel techniques to create actionable decision making environments, transforming the deluge of homeland security data into actionable knowledge for a wide variety of DHS mission areas. In this panel, three RVAC students will present their research and results in topics ranging from intelligence analysis to public health.

LIVE DEMONSTRATION:
MAKING HOLLYWOOD FANTASIES A REALITY!

Take part in solving crimes first hand! Bill Pottenger will provide a live demonstration of a crime analysis tool (CompStat) geared toward first responders throughout the day on Thursday, March 19th.

With a number of box office hits and prime time dramas about forensic investigations it seems that every crime can be solved in an hour's time. On the big screen detectives upload a clue and suddenly all of the relevant background information on the crime appears on a wall of computer screens.

While solving crimes is not nearly as easy in reality as the Hollywood fantasies make it out to be, Intuidex has partnered with the Port Authority of New York and New Jersey (PA of NY/NJ), Pacific Northwest National Labs (PNNL), and the National Consortium for the Study of Terrorism and Responses to Terrorism (START) to develop cutting-edge data analytic and visualization tools to be immediately and effectively used by Port Authority law enforcement personnel.

CompStat aims to organize and analyze all Port Authority data to aid in crime prevention and counter terrorism efforts. This is taking the Hollywood fantasies one step closer to reality!

THE MAN BEHIND IT ALL:

William M. (Bill) Pottenger is CEO and founder of Intuidex, a manufacturer of solutions in the visual and data analytics space. Pottenger is also an Associate Research Professor at Rutgers University at DIMACS and in the Computer Science Department. Pottenger is active in research and development of technology, and has received competitive research funding from the NSF, DHS, NIJ, ARL, industry, etc., has over 40 peer-reviewed publications, has served as editor and chair of several proceedings/symposia, and has made over 50 professional presentations and seminars. Pottenger's research interests include statistical relational learning and information extraction as applied in Higher Order Learning, a framework he developed for both supervised and unsupervised learning based on higher-order relations. Pottenger is a member of ACM, IEEE, SIAM. Prior to coming to Rutgers, Pottenger completed his PhD in Computer Science at the University of Illinois at Urbana-Champaign and worked as a research scientist at the National Center for Supercomputing Applications and at Lehigh University.

Student Posters

Show your support for the students at the poster session on Tuesday, March 17th in the foyer of the Grand Ballroom. Over 50 DHS sponsored students from across the nation will showcase and discuss their cutting edge research in Homeland Security related fields.

Centers of Excellence Displays

The Office of University Programs invites you to view the displays provided by the Centers of Excellence in the foyer of the Grand Ballroom on Wednesday, March 18th and Thursday, March 19th. The displays will highlight accomplishments of the Centers in research and educational programs. Learn more about the latest advancements each of the Centers has made to make our nation safer.

Grants Writing Workshop

Pathways to Success: Applying for DHS Science and Technology Grants

Have you wondered how to successfully apply for a DHS S&T Grant? If so, you are welcome to attend a two hour session that will explain the proposal process and provide information on "best practices and lessons learned." The Director of University Programs, Dr. Matthew Clark, along with DHS S&T Grants Officers will present the workshop and conduct a question and answer session. Don't miss this opportunity to get first-hand information. Attend the workshop on March 18th from 10:00 a.m. to 12:00 p.m.

National Geographic Video

The "High Tech War on Terror" will air multiple times throughout the Summit in the foyer of the Grand Ballroom. This documentary is a fascinating behind-the-scenes look into new technologies developed by DHS to detect, deter and defeat terrorist attacks against U.S. citizens and infrastructure within our borders. You'll get to see how they harden aircraft from explosions, create a high-altitude missile detection and countermeasures system, add security sensors to shipping containers, detect hostile persons by remotely screening their physiology, and scan people from a distance for explosives!

Protecting our Nation

Since the attacks on September 11 2001, scientists and engineers across the nation have been working to strengthen the nation's defenses and prevent terrorists from striking again. Researchers have focused on developing technologies that address potential vulnerabilities in the following areas:

AVIATION

Potential target: On an average day, there are 28,537 national and regional commercial airline flights in U.S. skies.

TUNNELS

Potential target: The U.S. has scores of tunnels for trains, buses and car traffic. New York City is particularly dependent upon tunnels. Each year, commuter trains carry 44 million people through four tunnels under the Hudson River between Manhattan and nearby New Jersey, and a similar number of cars and buses travel through the Lincoln Tunnel.

ELECTRICAL GRID

Potential target: Americans are dependent upon a continuous supply of electricity. The New York metropolitan for example, required 62,591 gigawatt hours in 2007 to keep its lights on and power the other accoutrements of modern civilization, from elevators and air conditioners to plasma TVs and ATM machines.

SHIPPING CONTAINERS

Potential target: About 12 million shipping containers arrived in U.S. ports from foreign locations in 2007.

SPORTS STADIUMS

Potential target: Sporting events in the U.S. routinely attract large crowds, with the largest venue, Indianapolis Speedway, capable of accommodating more than 250,000 fans.

PARTNERSHIPS FOR A SAFER WORLD

2009

BIOGRAPHIES

HOMELAND SECURITY UNIVERSITY PROGRAMS
TODAY'S RESEARCH & EDUCATION, TOMORROW'S SECURITY

KEYNOTE SPEAKERS:

Secretary, U.S. Department of Homeland Security

Janet Napolitano

Janet Napolitano was sworn in on January 21, 2009 as the third Secretary of the Department of Homeland Security. Prior to joining the Obama Administration, Napolitano was mid-way through her second term as governor of the state of Arizona. While governor, Napolitano became the first woman to chair the National Governors Association, where she was instrumental in creating the Public Safety Task Force and the Homeland Security Advisors Council. She also chaired the Western Governors Association. Napolitano previously served as the Attorney General of Arizona and the U.S. Attorney for the District of Arizona.

Napolitano's homeland security background is extensive. As U.S. Attorney, she helped lead the domestic terrorism investigation into the Oklahoma City Bombing. As Arizona Attorney General, she helped write the law to break up human smuggling rings. As governor, she implemented one of the first state homeland security strategies in the nation, opened the first state counter-terrorism center and spearheaded efforts to transform immigration enforcement. She's also been a pioneer in coordinating federal, state, local and bi-national homeland security efforts, and presided over large scale disaster relief efforts and readiness exercises to ensure well-crafted and functional emergency plans.

Napolitano graduated from Santa Clara University in 1979, where she won a Truman Scholarship, and received her Juris Doctor (J.D.) in 1983 from the University of Virginia School of Law. After law school she served as a law clerk for Judge Mary M. Schroeder of the U.S. Court of Appeals for the Ninth Circuit before joining the law firm of Lewis and Roca.

U.S. Congressman, Second District of Mississippi

Congressman Bennie Thompson

Bennie G. Thompson is currently serving his eighth term as the Democratic Congressman for Mississippi's Second District and third term on the Homeland Security Committee. Congressman Thompson has spent his entire adult life giving a voice to the voiceless. With more than 40 years of continuous public service, he is the longest-serving African-American elected official in the state of Mississippi. He served as alderman and mayor in his hometown for years, after which he served as Hinds County Supervisor for 13 years before being elected to Congress in1993. With six district offices - Bolton, Greenville, Greenwood, Jackson, Marks, and Mound Bayou - Congressman Thompson is committed to empowering those who gave him an opportunity to represent the Second District of Mississippi. His reputation as a no-nonsense problem solver has earned him the trust of his constituents and the respect of his colleagues in Washington.

To begin the 110th Congress, Thompson was promoted by his colleagues to serve as the first ever Democratic Chairman of the Homeland Security Committee, a committee which was created by the U.S. House of Representatives in 2002 in the aftermath of September 11, 2001. As Chairman, Congressman Thompson recently introduced and engineered House passage of the most comprehensive homeland security package since September 11th, H.R. 1, the "9/11 Commission Recommendations Act of 2007".

Drawing on his 26 years of experience as a volunteer firefighter in Hinds County, Thompson understands that our nation's law enforcement and first responders are our first line of defense in times of emergency. With that in mind he has constantly fought to ensure they are fully equipped with the resources and tools they need to effectively respond to any and all emergencies.

Congressman Thompson long been considered a leading voice on civil rights, equal education and healthcare reform, Congressman Thompson has helped to make a real difference in the lives of his constituents. In 1975, he filed a lawsuit to increase funding at Mississippi's historically black universities. With Congressman Thompson as lead plaintiff, the case was settled in 2004 for an unprecedented $503 million. In 2000, Congressman Thompson's legislation creating the National Center for Minority Health and Health Care Disparities became law.

Under Secretary (Acting), Science & Technology Directorate, U.S. Department of Homeland Security

Bradley L. Buswell

Brad Buswell is a native of Durango, Colorado and a graduate of the United States Naval Academy. He is a retired submarine officer who served in numerous assignments at sea and in Washington, D.C. His Washington assignments included Congressional Liaison for Navy Research and Development Programs in the Navy Office of Legislative Affairs, Assistant to the Chief of Naval Operations for Force Transformation, Executive Assistant to the Chief of Naval Research, and various other positions on the Navy staff.

Following his retirement from the U.S. Navy, Mr. Buswell worked in the private sector for General Electric in its Washington Office as Manager, Government Relations for GE's Global Research division. He joined the Department of Homeland Security Science & Technology Directorate in October 2006.

Mr. Buswell holds a Bachelors of Science in Systems Engineering from the U.S. Naval Academy and a Masters of Business Administration from The George Washington University.

David V. Aguilar

Mr. David V. Aguilar became chief of the Office of Border Patrol on July 1, 2004. As the nation's highest ranking Border Patrol officer, Chief Aguilar directs the enforcement efforts of more than 12,000 Border Patrol Agents nationwide. Chief Aguilar brings to the job the knowledge and expertise gained from more than 26 years of service with the Border Patrol.

Before his appointment as chief of the Border Patrol, he was the chief patrol agent of the Tucson Sector United States Border Patrol. In that position, Chief Aguilar was responsible for all operational and administrative functions of the sector and commanded over 2000 Border Patrol agents and over 200 support personnel. He oversaw Border Patrol operations at eight geographically dispersed Border Patrol stations along 261 miles of the Arizona/Mexico border. In March 2004, Homeland Security Under Secretary Asa Hutchinson designated Chief Aguilar as the Border and Transportation Security Integrator for the execution of the Arizona Border Control Initiative.

Prior to his Tucson Sector assignment, Chief Aguilar served as assistant regional director for Border Patrol in the Central Region of the former Immigration and Naturalization Service (INS) from August 1996 to November 1999. He was the principal assistant and advisor to the regional director in the administration of INS operations relative to Border Patrol. From 1988 to August 1996, Chief Aguilar served as patrol agent in charge of the Dallas, Rio Grande City, and Brownsville Border Patrol stations. The Rio Grande City station is one of the most active stations for narcotics interdiction along the Texas-Mexico border. The Dallas and Brownsville Border Patrol stations were both awarded the Commissioner's Award for Group Achievement under Aguilar's command. Most recently, the Tucson Sector was awarded the Customs and Border Protection Office of Anti-Terrorism Commissioner's Award for operational achievements under Operation Desert Safeguard, an operation planned, designed, and implemented in the high-risk areas of the Tucson Sector in 2003.

Before entering duty in June 1978 at Laredo, Texas, Mr. Aguilar attended Laredo Junior College, Laredo State University, and the University of Texas at Arlington. He is a graduate of the John F. Kennedy School of Government Harvard Senior Executive Fellows Spring Class of 1999.

Matthew Clark, PhD

Dr. Matthew Clark is Director of the Department of Homeland Security (DHS) Science and Technology Directorate's Office of University Programs. At DHS Dr. Clark is responsible for managing, integrating and delivering the research of the DHS research and education centers, a $50 million per year grant program. He is the author of over 50 papers, reports and regulatory and policy analyses. Prior to joining DHS, Dr. Clark spent 11 years as an economist with the U.S. Environmental Protection Agency, where he established, planned and managed an Economics and Decision Sciences grant program that generated some of the most significant and widely used research results ever supported by USEPA. He also led a USEPA-wide effort to establish measures of program benefits and cost-effectiveness across all agency programs. While at EPA, Dr. Clark managed the quality control and release of all regulatory economics products for the Office of Water and was an industry economist in EPA's Office of Science and Technology. Earlier, he was an energy and environmental economics consultant for public and private clients, an economist and budget planner for the Washington State Department of Ecology, and a land use and environmental planner for the two largest counties in Washington State. He received his PhD from the University of Washington, his master's degree from Washington State University, and his bachelor's degree from the University of Massachusetts. Dr. Clark was once a Peace Corps volunteer in Guatemala in the mid-1970s.

Desiree Linson

Ms. Desiree D. Linson is the deputy director of the Office of University Programs for the Science and Technology Directorate at the Department of Homeland Security (DHS). Her current responsibilities include working with the DHS Centers of Excellence and maintaining oversight of university scholarship and fellowship programs. Ms. Linson has received numerous awards throughout her career for her skills in creative problem-solving and was recently recognized by the DHS Under Secretary for Science and Technology for her significant contributions to the Office of University Programs. Prior to her current position, she served as an officer in the U.S. Navy for 20 years, with subspecialties in intelligence, anti-submarine warfare, and human resources. Ms. Linson holds an MBA in financial management from the Naval Postgraduate School, a BA in English from the University of Texas, and she is also a graduate of the Air Command and Staff College, Maxwell Air Force Base, AL.

Rolf A. Dietrich

Mr. Rolf A. Dietrich is the Deputy Director of Research at the DHS Science and Technology Directorate. His portfolio oversees the Office of National Laboratories, the Office of University Programs for the DHS Centers of Excellence, and the Academic Fellowship and Scholarship Program Office. He was previously Director of Homeworks, overseeing the S&T Directorate's High Impact Technology Solutions (HITS) programs, which have considerable risk of failure but also offer the potential for significant gains in capability.

Mr. Dietrich has 32 years of experience in management, management consulting, engineering, application of technology, proposal development, and the operation and sustainment of remote operations. In 12 years at SAIC, he served as a line manager, program manager, technical director, project manager, and quality assurance manager. Earlier, he spent 20 years in the U.S. Navy in numerous positions of responsibility, culminating in command of a nuclear submarine.

A member of Sigma Xi, Mr. Dietrich holds a BS degree in Mathematics from the U.S. Naval Academy, MS degrees in Mechanical Engineering and Ocean Engineering from the Massachusetts Institute of Technology, and an MBA in International Business from the University of Maryland. He also is a graduate of the U.S. Naval Officer Nuclear Power School.

James M. Loy

Admiral James Loy retired as Deputy Secretary of Homeland Security in 2005, completing a 45-year distinguished career in public service. In this capacity, he was involved in all aspects of consolidating 22 separate agencies into one unified Cabinet department as well as managing the day-to-day activities of the agency. Prior to the establishment of the Department of Homeland Security in 2002, Admiral Loy served in the Department of Transportation as Deputy Under Secretary for Security and Chief Operating Officer of the Transportation Security Administration (TSA), and later as Under Secretary for Security. In these roles, he served as the first administrator of the newly created TSA, which is responsible for protecting the nation's transportation systems to ensure freedom of movement for people and commerce.

Admiral Loy retired from the U.S. Coast Guard in 2002 after serving as its Commandant since May 1998. As head of the 90,000-person organization, he restored readiness through workforce development and modernized the Coast Guard's fleet of ships and aircraft. Prior to his service as Commandant, Admiral Loy served as the Coast Guard Chief of Staff from 1996 to 1998, during which time he redesigned the headquarters management structure and overhauled the Coast Guard planning and budgeting process to focus more sharply on performance and results. From 1994 to 1996, he was Commander of the Coast Guard's Atlantic Area, supervising U.S. forces during the mass Haitian and Cuban migrations of 1994, and leading Coast Guard forces participating in Operation Restore Democracy. He has been awarded numerous military commendations and civilian honors.

Admiral Loy graduated from the U.S. Coast Guard Academy in 1964 and holds master's degrees from Wesleyan University and the University of Rhode Island.

Harold J. Raveché

Dr. Raveché has championed the development of new curricula related to homeland security for undergraduate, masters and doctoral programs. He has pioneered the unique Technogenesis® approach to higher education, wherein students, faculty and external partners join in creating shared value from the intellectual property developed at Stevens. Dr. Raveché has promoted the development of research centers that meet the needs of government agencies, business, and industry. The graduate programs at Stevens in Systems Engineering and Information Systems have emerged to be among the largest in the world. Since 2000, Dr. Raveché has been promoting WebCampus.Stevens. The program has reached over 12,000 enrollments globally; it was named the best online graduate program in the U.S. by the Sloan Foundation in 2003, and by the U.S. Distance Learning Association in 2005. Dr. Raveché holds a doctorate in Physical Chemistry from the University of California, San Diego.

Starnes E. Walker, PhD

Dr. Starnes E. Walker is the Director for Research at the DHS Science and Technology Directorate. Dr. Walker oversees the Office of National Laboratories, the Office of University Programs for the DHS Centers of Excellence, and the Academic Fellowship and Scholarship Program Office. Previously, Dr. Walker served as the Technical Director and Chief Scientist reporting directly to the Chief of the Office of Naval Research (ONR), responsible for leading a science and technology organization that ensured technological superiority for the Navy and Marine Corps. Prior to that position, Dr. Walker was the Acting Associate Laboratory Director for National Security, serving as the National Security Coordinator at Argonne National Laboratory. He served on the Department of Defense's (DoD) Defense Science Board in the Summer Study to define Future Strategic Strike Systems with U.S. Strategic Command as Combatant Command sponsor. Dr. Walker started his career at the Naval Weapons Center–Corona Laboratories as a research physicist. In 1970, he joined the Naval Weapons Center–China Lake. In 1973, he joined Phillips Petroleum as a research physicist. From 1992 to 1998, he served as Vice President-Technology for Morrison Knudsen Corporation with responsibility for developing new technology and engineering partnerships with DoD, the Department of State, and National Laboratories. From 1998 to 1999, he led a team with British Nuclear Fuels Limited that successfully developed a process from a research and development platform through pilot plant demonstration for the chemical separation of transuranics. He holds a BS, MS, and a PhD degree in Physics from the University of California, and an Honorary Degree in Nuclear Engineering from the University of Missouri-Rolla.

Detlof von Winterfeldt

Detlof von Winterfeldt is the Director of the International Institute for Applied Systems Analysis in Laxenburg, Austria. He is on leave from the University of Southern California (USC), where he is a Professor of Industrial and Systems Engineering and a Professor of Public Policy and Management. Concurrently with his term at IIASA, he is visiting the London School of Economics and Political Science as a Centennial Professor in the Operational Research Group of the School of Management. In 2004 he co-founded the National Center for Risk and Economic Analysis of Terrorism Events (CREATE), the first university-based center of excellence funded by the US Department of Homeland Security, serving as CREATE's director until 2008. For the past thirty years, he has been active in teaching, research, university administration, and consulting. He has taught courses in statistics, decision analysis, risk analysis, systems analysis, research design, and behavioral decision research. His research interests are in the foundation and practice of decision and risk analysis as applied to the areas of technology development, environmental risks, natural hazards and terrorism. He is the co-author of two books, two edited volumes, and author or co-author of over 100 journal articles and book chapters on these topics. As a consultant he has applied decision and risk analysis to many management problems of government and private industry. He has served on several committees and panels of the National Science Foundation and the National Academies, including a recent appointment to the National Academies' Board on Mathematical Sciences and their Applications. He is a Fellow of the Institute for Operations Research and the Management Sciences (INFORMS) and of the Society for Risk Analysis. In 2000, he received the Ramsey Medal for distinguished contributions to decision analysis from the Decision Analysis Society of INFORMS.

DHS SCIENCE & TECHNOLOGY DIRECTORATE DIVISION DIRECTORS:

COMMAND, CONTROL & INTEROPERABILITY DIVISION

David Boyd, PhD

Dr. David Boyd is director of the Command, Control and Interoperability Division within the U.S. Department of Homeland Security. He leads research and development (R&D) programs to support command and control, communications, computing, intelligence, surveillance, reconnaissance, cyber security and interoperability. Before joining DHS, Dr. Boyd served as Director of Science and Technology for the National Institute of Justice, where he managed R&D programs in every facet of technology affecting law enforcement and corrections. He is a retired U.S. Army Officer and a recipient of the 2005 Presidential Rank Award. With graduate degrees in management and public policy analysis and a doctorate in decision sciences, Dr. Boyd has also published extensively in military, law enforcement, technical, and general circulation publications.

INFRASTRUCTURE & GEOPHYSICAL DIVISION

Christopher Doyle

Mr. Christopher Doyle is the director of the Infrastructure and Geophysical Division (IGD) within S&T, and he leads the S&T effort to conduct R&D on behalf of emergency response and infrastructure protection. He was appointed to the Senior Executive Service in August 2008. Mr. Doyle graduated from Virginia Tech in 1989 with a BS in civil engineering.

After a brief interlude in the private sector, Mr. Doyle took a position at the Federal Emergency Management Agency (FEMA) headquarters, where he learned response and recovery from the field and headquarters perspective. He received a distinguished service award for his efforts during Hurricane Andrew to relocate disaster victims from tents to trailers, and he went on to manage recovery efforts in several disasters, including the Northridge Earthquake, where he was responsible for administration of over $6 billion in recovery grant funds.

Mr. Doyle was appointed by the FEMA director to lead the Office of Corporate Affairs in 2000. In that position, he worked numerous partnering arrangements between FEMA and the private sector to provide enhanced disaster protection at the local level. From 2001 until 2003, he managed the day-to-day operations of both the National Earthquake Hazards Reduction Program and the National Dam Safety Program. After the creation of DHS and the assimilation of FEMA into DHS in 2003, Mr. Doyle was requested by the new Science and Technology Directorate to serve as the deputy director of the Emergency Preparedness and Response Portfolio of Research and Development.

BORDERS & MARITIME SECURITY DIVISION

Anh N. Duong

Ms. Anh Duong serves as the head of the Borders and Maritime Security Division in DHS Science and Technology Directorate. She is a recognized expert in explosives, and before joining DHS, she directed all U.S. Navy explosives research and development. Ms. Duong is most well known for her thermobaric weapon created to defeat tunnels and bunkers used as terrorist hideouts.

Immediately prior to her arrival at DHS, Ms. Duong served as science advisor to the deputy chief of Naval Operations for Information, Plans and Strategy, and the director of the Naval Criminal Investigative Service. She directed many Joint R&D programs such as the Explosive Detection Equipment Program, the Waterside and Shipboard Security Systems Program, and the DOD Locks/Seals Program. She has received many awards for technological developments, leadership, and public service.

Ms. Duong graduated cum laude in chemical engineering and computer science from the University of Maryland and earned an MS in public administration with honors from the American University.

CHEMICAL & BIOLOGICAL DIVISION

Elizabeth George, PhD

Dr. Elizabeth George serves as the director of the Chemical and Biological Division in the DHS S&T. Until merging into the new department on March 2003, Dr. George was the program manager of the Chemical & Biological National Security Program in the Department of Energy's National Nuclear Security Administration's Office of Nonproliferation Research & Engineering. Significant accomplishments include the design and deployment of BioWatch, the nation's first civilian operational chemical detections and response capability deployed in the Washington subway system. She is the recipient of the Department of Homeland Security Under Secretary's Award for Science and Technology, and the U.S. EPA bronze medal and Scientific and Technological Achievement awards. She holds MS and PhD degrees in microbiology.

HUMAN FACTORS AND BEHAVIORAL SCIENCES DIVISION

Sharla P. Rausch, PhD

Dr. Sharla Rausch is the first director of the Human Factors and Behavioral Sciences Division within the Science and Technology Directorate of the Department of Homeland Security. As the initial architect of this division, she is responsible for constructing its vision, laying its foundation, and developing the tools to carry out its mission. Dr. Rausch brings to this task a background in social behavioral research and extensive federal management experience. She was appointed to the Senior Executive Service on October, 2006.

Dr. Rausch served as the deputy director, Office of Systems Engineering and Development from August 2004 to September 2006, where she helped create, develop and manage the operating infrastructure along with strategic planning guidance for the office. For this work she received the first "Under Secretary's Award for Program Support" in 2004. Before coming to DHS, Dr. Rausch held several federal positions. She has published in various academic and professional criminal justice journals including those associated with the American Society of Criminology. Dr. Rausch received a BA in social psychology from Florida Atlantic University, an MS in sociology from Florida State University, and a PhD in sociology from the University of Connecticut.

EXPLOSIVES DIVISION

James Tuttle

Mr. James Tuttle is head of S&T's Explosives Division and is responsible for all stages of scientific research and technology development for explosives detection, blast mitigation, and response to non-nuclear explosives and other energetic threats. Prior to this assignment, Mr. Tuttle served as program manager for S&T's counter-MANPADS (Man-Portable Air Defense Systems) program, managing a budget of $272 million and a team of 55 contractors and federal employees. Mr. Tuttle came to DHS with 21 years of experience in RDT&E of electronic warfare (EW); radar systems; reconnaissance; communications, command, control and intelligence (C3I) systems; aircraft signature development; and flight testing. He supported program acquisition and flight testing for more than 40 DoD aircraft avionics platforms. He served on or chaired a number of DoD EW and signature-measurement committees. At the Pentagon, Mr. Tuttle served as assistant director for EW Technology in the office of the Director, Defense Research & Engineering. He was deputy lead for the Survivability Integrated Product Team for the Joint Strike Fighter, and NAVAIR chief engineer at the Atlantic Test Range.

Mr. Tuttle holds a BS in electrical engineering from Virginia Tech and an MS in engineering management from the Florida Institute of Technology. He is a graduate of the Defense Systems Management College in advanced acquisition program management and the senior executive management development program (SEMDP).

DHS SCIENCE & TECHNOLOGY DIRECTORATE DIVISION RESEARCH LEADS:

EXPLOSIVES

Douglas C. Bauer, PhD, JD

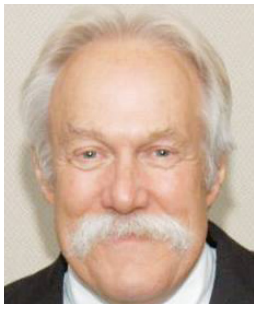
Dr. Douglas Bauer is the program executive for basic research within the explosives division of the Science and Technology Directorate at the Department of Homeland Security (DHS). He has management responsibility for a multi-million dollar program in explosives basic and applied research, homemade explosives characterization, detection and damage assessment, development of the next generation EDS x-ray technologies, and counter-IED basic research in prevention, detection, response and mitigation. Dr. Bauer also has management responsibility for two new university-based Centers of Excellence addressing explosive threats in transportation through fundamental research. Previously, Dr. Bauer was acting director of the Countermeasures Test Beds (CMTB), an activity to carry out operational test and evaluation for counter-terrorism technologies.

Dr. Bauer holds engineering degrees from Cornell and Carnegie Mellon Universities (where he received his PhD), a law degree from Georgetown University Law Center, and a theology degree from Virginia Theological Seminary. He served in the U.S. Navy as a line officer aboard surface ships, including service in Desert Storm, and is now retired as a naval Captain. He is a registered professional engineer in New York and Pennsylvania and is a member of the D.C. bar, admitted to practice before federal courts. He is a certified Program Manager Level I and received the under secretary's award for program management and the secretary's award for excellence in 2007.

INFRASTRUCTURE & GEOPHYSICAL DIVISION

Mary Ellen Hynes, PhD

Dr. Mary Ellen Hynes is the director of research for the Infrastructure/Geophysical Division. She comes to DHS S&T after 30 years of research and development work at the U.S. Army Engineer Research and Development Center headquartered in Vicksburg, MS. She obtained, with honors, her bachelor's and master's degrees in civil engineering from the Massachusetts Institute of Technology and her PhD in civil engineering at the University of California at Berkeley. Her past research areas focused on earthquake engineering and probabilistic modeling. Now she focuses on all the targets and all the threats for critical infrastructure protection and natural hazards.



COMMAND, CONTROL & INTEROPERABILITY DIVISION

Joseph Kielman, PhD

Dr. Joseph Kielman serves as science advisor in the Science and Technology Directorate (S&T) at the Department of Homeland Security, where he is the lead for basic/future research in the Command, Control and Interoperability Division (CID) and also manages two university programs' Centers of Excellence. Prior to joining DHS, Dr. Kielman worked for 20 years at the FBI, where he was successively chief of the Advanced Technology Group in the Engineering Section, chief of research and development for the Technical Services Division, and chief scientist and also chief architect at the Information Resources Division. Dr. Kielman has an undergraduate degree in physics and graduate degrees in biophysics and did postdoctoral work in genetics. He received the Presidential Rank Award of Meritorious Senior Professional in 2006.

HUMAN FACTORS AND BEHAVIORAL SCIENCES DIVISION

Richard Lempert, PhD

Dr. Richard O. Lempert spent most of his career at the University of Michigan, where he retired as the Eric Stein Distinguished University Professor of Law and Sociology, Emeritus. From June 2002 through May 2006 he took leave from the University of Michigan to serve as the division director for the Social and Economic Sciences at the National Science Foundation. He has chaired the Sociology Department at the University of Michigan, chaired what is now the National Research Council's Committee on Law and Justice, and was the founding director of the University of Michigan's Life Sciences, Values, and Society Program.

Professor Lempert's research encompasses doctrinal, qualitative and quantitative studies in a variety of areas, including the statistics of DNA evidence, juries, the death penalty, affirmative action, dispute processing, the judicial use of statistical and social science evidence, and social science methods. His book, *A Modern Approach to Evidence*, now in its third edition, pioneered the problem-oriented approach to evidence, and an article incorporated in that book helped foster legal interest in Bayesian approaches to evidence evaluation. He has also written or edited other books and articles and served as editor of the Law & Society Review. In July 2007, he began a two-year term as president of the Law & Society Association. He has received numerous awards and honors for his scholarship.

Dr. Lempert is a graduate of Oberlin College and the University of Michigan Law School, and he holds a PhD in sociology from the University of Michigan.

BORDERS & MARITIME SECURITY DIVISION

Jeanne Lin

Ms. Jeanne Lin is the research lead in the Borders/Maritime Security Division of the Science & Technology (S&T) Directorate at the Department of Homeland Security. She previously served as U.S. Customs Service's Director, Research Development and Evaluation Branch where her responsibilities included research, development and evaluation of advanced technology equipment and systems including radiation portal monitors. Prior to joining the Customs Service, Ms. Lin had 20+ years working as a program and technical manager within the Department of Navy including integrated project director (surface ship combat systems), principal staff to the program executive officer, undersea warfare, and combat control/test & evaluation manager (US/UK surface ship torpedo defense). In 2007, Ms. Lin was a Capitol Hill Fellow serving on the House Committee on Homeland Security. She has been with S&T since February 2003.

A native of California, Ms. Lin earned her BS in agriculture and managerial economics from the University of California, Davis and an MS in systems engineering from George Mason University in Virginia.

CHEMICAL & BIOLOGICAL DIVISION

Keith B. Ward

Dr. Keith Ward is the leader of the Chemical and Biological Research and Development section within the Chemical and Biological Division of the Department of Homeland Security. He was appointed this position after serving as office director of the CBRNE Defense Office within the Homeland Security Advanced Research Projects Agency (HSARPA).

Earlier in his career, after receiving a BS in physics (Texas A&M) and a PhD in biophysics (Johns Hopkins), Dr. Ward became a professor of chemistry at the University of Wisconsin, but he left in 1984 to join the Naval Research Laboratory, where he was team leader of the macromolecular crystallography and molecular modeling group. His research efforts focused on understanding the structure and function of proteins involved with marine bioluminescence, chemical agent-degrading enzymes, and phopholipases A2 toxins. In 1993, he became a NASA flight principal investigator, and his group developed remote-controlled protein crystallization systems for both Space Shuttle and Space Station experiments.

In1995 Dr. Ward became a scientific officer at ONR and served as chair of the Biomolecular and Biosystems group within the Cognitive, Neural, and Biomolecular Science and Technology Division. He also served as the ONR point-of-contact for nanobiotechnology and for explosives sensing, and as the Naval representative to the Joint Services Technical Panel for Decontamination and to the JWSTP Chapter on Combating Terrorism. He received the Navy Meritorious Civilian Service Award in 2003.

CENTERS OF EXCELLENCE DIRECTORS:

NATIONAL TRANSPORTATION SECURITY
University of Connecticut

Mehdi Anwar, PhD

Dr. Mehdi Anwar is the director of the University of Connecticut's National Transportation Security Center of Excellence. Dr. Anwar is also the associate dean for research and graduate education of the School of Engineering at the University of Connecticut and a professor of electrical and computer engineering (ECE). He served administratively as interim department head of ECE from June 1999 to August 2001. Dr. Anwar's research interests include localization of one-dimensional structures, transport in semiconductor devices, impurity diagnostics in quantum well structures, noise in semiconductor devices, power performance of GaN-based HFETs and circuits. Dr. Anwar is an editor

of the IEEE Transactions on Electron Devices and has chaired several international conferences. He has served as a program committee member and session chair of numerous professional conferences including SPIE's Nanosensing Materials and Devices and Nanostructure Integration Techniques. During his career, Dr. Anwar has presented 15 plenary and invited talks at national/international conferences, offered tutorials on nanosensors at Optics East, published over 170 archival journal publications and conference proceedings, co-authored three book chapters and served as principal investigator or co-principal investigator on more than $4.4 million in research grants and contracts. Dr. Anwar earned his PhD in electrical and computer engineering at Clarkson University, Potsdam, NY, in 1988.

BORDERS & MARITIME

Michael Bruno, PhD

Dr. Michael S. Bruno is dean of the School of Engineering and Science and professor of Ocean Engineering at Stevens Institute of Technology in Hoboken, New Jersey. He is the director of the Center for Secure and Resilient Maritime Commerce and Coastal Environments (CSR), a Department of Homeland Security National Center of Excellence. His research and teaching interests include ocean observation systems, maritime security, and coastal ocean dynamics. He is the author of more than 100 technical publications in various aspects of the field. Dr. Bruno holds a BS in civil engineering from the New Jersey Institute of Technology, an MS in civil engineering from the University of California at Berkeley, and a PhD in civil and ocean engineering from the Massachusetts Institute of Technology and the Woods Hole Oceanographic Institution.

NATIONAL TRANSPORTATION SECURITY
University of Connecticut

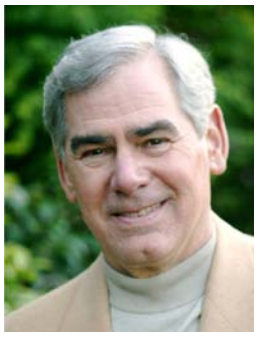
Mun Y. Choi, PhD

Dr. Mun Y. Choi serves as the dean of engineering at the University of Connecticut. His research interests are in energy conversion, advanced diagnostics, and particulate and aerosol analysis. He previously held academic and administrative positions at the University of Illinois at Chicago and Drexel University. He received his BS degree from the University of Illinois at Urbana-Champagne in 1987 and his PhD from the Mechanical and Aerospace Engineering Department at Princeton University in 1992.

NATIONAL CENTER FOR FOREIGN ANIMAL AND ZOONOTIC DISEASE DEFENSE (FAZD)
Texas A&M University

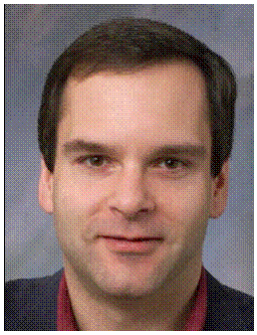
Neville P. Clarke, PhD, DVM

Dr. Neville Clarke is director of the Department of Homeland Security National Center of Excellence on Foreign Animal and Zoonotic Disease Defense (FAZD). He is founding director of the Texas A&M University System Institute for Countermeasures against Agricultural Bioterrorism and served as interim director of the Integrative Center for Homeland Security, which links the broad resources of the multiple universities and agencies of the Texas A&M University System to address both food and agriculture and the broad homeland security agenda. Dr. Clarke has been actively involved in agricultural bio-security since 1996, serving as advisor to the USDA, developing new projects at Texas A&M, and participating as a member of the Defense Intelligence Agency BioChem 2020 Group, which is a panel of scientific experts that assesses vulnerabilities to terrorist activities. His area of personal research is the development and application of decision-support systems to assess the impact of technology and policy options affecting food and agriculture, recent applications of which have been directed to agricultural bio-security at state and national levels. Dr. Clarke is director emeritus of the Texas Agricultural Experiment Station, one of the largest broad-based public research organizations in the U.S. for food and agriculture. As a career Air Force R&D officer, he served as director of the Air Force's medical research program for five years, where he was responsible for initiating the modern development of aircrew and airbase protection against CBW weapons. He is author or co-author of more than 100 scientific publications. Dr. Clarke received his PhD from the University of Washington and his DVM from A&M College of Texas.



NATIONAL TRANSPORTATION SECURITY
Mineta Transportation Institute, San Jose State University
Rod Diridon, Sr.

Mr. Rod Diridon, Sr., has been executive director of the Mineta Transportation Institute (MTI) since its inception. He is known as the father of modern transit service in Santa Clara County, California, having chaired more than 100 national, state, and local programs and projects, nearly all related to transit and the environment. Before leading the MTI team, Mr. Diridon completed five terms and served six times as chairperson of both the Santa Clara County Board of Supervisors and Transit Board. He served, in 1992, as the chair of the American Public Transportation Association (APTA) in Washington D. C. and for five years as North American vice chair of the International Transit Association (UITP) in Brussels. He advised the Federal Transit Administration and in 1995 chaired the National Research Council's Transportation Research Board's Transit Oversight and Project Selection Committee. Mr. Diridon founded and chaired the Transportation Research Board's study panel on "Combating Global Warming Through Sustainable Transportation Policy." Promoting international understanding, he founded Sister County Commissions with the Province of Florence, Italy and Region of Moscow, Russia. He promoted the expansion of the county's parks from under 500 acres to over 40,000 acres and co-chaired four parks funding campaigns during his tenure. In 1976, Mr. Diridon chaired the state's first successful 1/2-cent sales tax for transit and subsequently chaired five successful regional transportation financing elections and a statewide transportation bond election. He has chaired nine major rail-related studies and construction projects and was appointed in 2001 and reappointed in 2006, by Governors Davis and Schwarzenegger respectively, to the California High Speed Rail Authority Board of which he is chair emeritus. He is also chair of the APTA's High Speed and Intercity Rail Committee. He has a BS in accounting and an MSBA in statistics from San Jose State University and served two combat tours as a U.S. Navy officer in Vietnam.



REGIONAL VISUALIZATION AND ANALYTICS CENTERS (RVACS)
Purdue University
David Ebert, PhD

Dr. David Ebert is a professor in the School of Electrical and Computer Engineering at Purdue University, a University Faculty Scholar, director of the Purdue University Rendering and Perceptualization Lab (PURPL), and director of the Purdue University Regional Visualization and Analytics Center (PURVAC), which is part of the Department of Homeland Security's Regional Visualization and Analytics Center of Excellence (RVACs). Dr. Ebert performs research in novel visualization techniques, visual analytics, volume rendering, information visualization, perceptually-based visualization, illustrative visualization, and procedural abstraction of complex, massive data. Dr. Ebert has been very active in the visualization community, teaching courses, presenting papers, co-chairing many conference program committees, serving as editor-in-chief of IEEE Transactions on Visualization and Computer Graphics, and successfully managing a large program in external funding to develop more effective methods for visually communicating information. He holds BS, MS, and PhD degrees in computer and information science from the Ohio State University.

SOUTH EAST REGION RESEARCH INITIATIVE (SERRI)
Oak Ridge National Laboratory
Warren C. Edwards

Mr. Warren C. Edwards currently serves as the director of the Southeast Region Research Initiative (SERRI) at the Oak Ridge National Laboratory (ORNL). After retiring as a Major General from the United States Army and before joining UT-Battelle, Mr. Edwards served as the chief operating officer for Oak Ridge Technology Connections (TechConnect), LLC. In that position he established the start-up business plan, the operating systems, policies, and business procedures for a high-technology consulting enterprise and brought them to full operating capability. Prior to TechConnect, Mr. Edwards was a senior director for CACI, Inc., establishing the Atlanta operations office for CACI and managing a series of programs throughout the southeast in support of the U.S. Army and Centers for Disease Control. During his more than 30 years of military service, Mr. Edwards held numerous positions and also served as the chief of the Operations Division, National

Military Command System, the Joint Staff. Mr. Edwards graduated from the University of Richmond and holds a Masters of Military Arts and Sciences from the U.S. Army Command and Staff College and a Masters of Science in International Studies from the U.S. Naval War College.

NATIONAL CENTER FOR THE STUDY OF PREPAREDNESS AND CATASTROPHIC EVENT RESPONSE (PACER)
Johns Hopkins University
Lynn R. Goldman, MD, MPH

Dr. Lynn R. Goldman, a pediatrician and an epidemiologist, is a professor in environmental health sciences at the Johns Hopkins University Bloomberg School of Public Health, where her areas of focus are public health practice and preparedness, children's environmental health, and chemical and pesticide regulatory policy. She is co-PI (dual) of the National Center for the Study of Preparedness and Catastrophic Event Response (PACER) and a senior research fellow with the Johns Hopkins Office of Critical Event Preparedness and Response (CEPAR). In 1993, Dr. Goldman was appointed by the President and confirmed by the Senate to serve as Assistant Administrator for Toxic Substances at the U.S. Environmental Protection Agency, where she directed the Office of Prevention, Pesticides and Toxic Substances (OPPTS). In that position, she was responsible for numerous complex efforts to implement the nation's pesticide, toxic substances and pollution prevention laws. Under her watch, EPA expanded right-to-know under the Toxics Release Inventory and overhauled the nation's pesticides laws, established voluntary testing of high-volume industrial chemicals, and made advances in children's health and global chemical safety.

BORDERS SECURITY & IMMIGRATION
University of Arizona
Elyse Golob, PhD

Dr. Elyse Golob is the executive director of the National Center for Border Security and Immigration at the University of Arizona (UA). Previously, Dr. Golob served as the director of the University of Arizona Office of Economic and Policy Analysis where she played an instrumental role in spearheading the University of Arizona's border security initiative. She is a founding member of the Southwest Border Security Consortium (SBSC), a collaboration of nine border state universities. Prior to her position at UA, she served as a faculty member in Cornell University's Department of City and Regional Planning and director of the Cornell Urban Scholars Program; lead faculty of the Cities in the 21st Century Program, a division of Boston University's International Honors Program; and vice president for economic planning and analysis at the New York City Economic Development Corporation. Dr. Golob holds a PhD in urban planning and policy development from Rutgers University, an MA in culture and policy studies, and a BA in professional writing from Empire State College, SUNY.

CENTER FOR ADVANCING MICROBIAL RISK ASSESSMENT (CAMRA)
Drexel University
Charles N. Haas, PhD

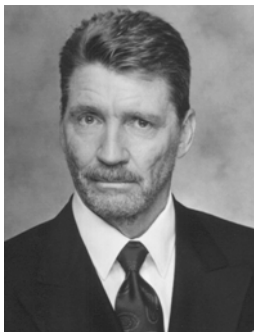
Dr. Charles N. Haas is the L.D. Betz Chair Professor of Environmental Engineering and head of the Department of Civil, Architectural and Environmental Engineering at Drexel University, where he has been since 1991. He also has an adjunct appointment in the Department of Emergency Medicine of the Drexel University College of Medicine. He co-directs the USEPA/DHS University Cooperative Center of Excellence – Center for Advancing Microbial Risk Assessment (CAMRA). For nearly 25 years, Professor Haas has specialized in the assessment of risk from pathogens and the control of human exposure to pathogenic microorganisms, particularly the treatment of water and wastewater to minimize microbial risk to human health. Professor Haas has published more than 150 papers in peer-reviewed journals as well as books and other major works. He received his BS (biology) and MS (environmental engineering) from the Illinois Institute of Technology and his PhD in environmental engineering from the University of Illinois at Urbana-Champaign.

NATIONAL TRANSPORTATION SECURITY
University of Arkansas
Kevin Hall, PhD

Dr. Kevin Hall is the Executive Director, Mack-Blackwell Rural Transportation Center, University of Arkansas. Dr. Hall is also a Professor and the Head of the Department of Civil Engineering at the University of Arkansas, where he joined the faculty as an Assistant Professor in 1993. His educational and research interests include Pavement Materials, Design, Construction, and Rehabilitation. In 2004 he received the Distinguished Faculty Achievement Award (Teaching and Research) at the University of Arkansas. Dr. Hall has published over 75 archival journal articles and given over 200 presentations in the highway engineering and Civil Engineering education arenas. He has served as the Principal or co-Principal Investigator on over $5 million in research grants and contracts. Dr. Hall serves on four standing committees of the Transportation Research Board, chairs two project panels for the National Cooperative Highway Research Program, and serves on numerous Expert Task Groups and other panels/committees sponsored by ASTM, the Federal Highway Administration, the American Society for Engineering Education, and the American Society of Civil Engineers. He is a licensed Professional Engineer in Arkansas. Dr. Hall earned his PhD from the University of Illinois, and his BS and MS in Civil Engineering from the University of Arkansas.

NATIONAL TRANSPORTATION SECURITY
Long Island University
Vincent E. Henry, PhD

Dr. Vincent E. Henry is an associate professor and director of Long Island University's Homeland Security Management Institute. A first responder to the 9/11 World Trade Center terrorist attack, Dr. Henry retired from the NYPD in 2002 following a 21-year police career in which he served in a wide variety of uniformed and plainclothes patrol, undercover decoy, training, investigative, supervisory and management assignments. He was the first American police officer to be named a Fulbright Scholar and holds the American Society for Industrial Security's certified protection professional (CPP) credential. Dr. Henry is the author of numerous publications in the fields of law enforcement management, police corruption and reform, psychological trauma, terrorism, and homeland security. His recent books include *The COMPSTAT Paradigm: Management Accountability in Policing, Business and the Private Sector* and *Death Work: Police, Trauma, and the Psychology of Survival*. Dr. Henry earned his PhD in criminal justice from the City University of New York.



NATIONAL TRANSPORTATION SECURITY
Mineta Transportation Institute
Brian Michael Jenkins

Mr. Brian Michael Jenkins is the director of the National Transportation Security Center at the congressionally-created Mineta Transportation Institute, and since 1997, he has directed the institute's continuing research on protecting surface transportation against terrorist attacks. As one of the world's leading authorities on terrorism and sophisticated crime, Mr. Jenkins works with government agencies, international organizations and multinational corporations. He is a senior advisor to the president of RAND and serves as a special advisor to the International Chamber of Commerce and is a member of the advisory board of the ICC's investigative arm, the Commercial Crime Services. Mr. Jenkins is a decorated combat veteran, having served in the Dominican Republic and later in Vietnam. He has authored books on terrorism and has published numerous articles and research reports on conflict and crime. Mr. Jenkins has a BA in fine arts and a master's degree in history, both from UCLA.

NATIONAL CENTER FOR THE STUDY OF PREPAREDNESS AND CATASTROPHIC EVENT RESPONSE (PACER)
Johns Hopkins University
Gabor D. Kelen, MD

Dr. Gabor Kelen is a professor and chair of the Department of Emergency Medicine at Johns Hopkins University and the director of the National Center for the Study of Preparedness and Catastrophic Event Response (PACER). He also serves as director of the Johns Hopkins Office of Critical Event Preparedness and Response (CEPAR) and chair of the medical board of the Johns Hopkins Hospital. He joined the faculty of the Department of Emergency Medicine at Johns Hopkins in 1984 as director of research and program director of the emergency medicine residency program. Over the years, Dr. Kelen developed novel methods to study HIV and other bloodborne pathogens. His research in this area helped define the extent of the HIV epidemic and led to the adoption of universal precautions. Dr. Kelen has more than 100 publications and served as a senior editor of the preeminent text in emergency medicine. His research has been recognized through numerous awards including the Society for Academic Emergency Medicine Hal Jayne Academic Excellence Award and Leadership Award, the American College of Emergency Physicians' Outstanding Contribution to Research Award, and the Emergency Medicine Foundation Center of Excellence Award. In recognition of his contributions, he was recently elected to the Institute of Medicine of the National Academies of Science. Dr. Kelen received his BS in experimental psychology from Carleton University in Canada and his MD from the University of Toronto.

NATIONAL CENTER FOR FOOD PROTECTION & DEFENSE (NCFPD)
University of Minnesota
Shaun Kennedy

Mr. Shaun Kennedy is director of the National Center for Food Protection and Defense (NCFPD). He also serves as director of partnerships and external relations for the University of Minnesota's College of Veterinary Medicine. Since joining the university, he has taken a leadership role in facilitating grants and contracts that advance research on animal health, food safety, and food-system biosecurity. He also coordinates research programs awarded in these areas and lectures on these topics. Mr. Kennedy previously held executive positions with Ecolab and Procter & Gamble, where he was involved in the development of animal health and food safety technologies. These included novel sanitizers, FDA-approved process additives, new sanitation technologies, and animal health products. Mr. Kennedy has expertise in heading research and development initiatives; commercializing new technologies; working with state, federal, and international regulatory agencies; and managing intellectual property. He has received six patents and has several additional patents pending. Mr. Kennedy graduated cum laude from Princeton University with a BS in chemical engineering.

NATIONAL CONSORTIUM FOR THE STUDY OF TERRORISM AND RESPONSES TO TERRORISM (START)
University of Maryland
Gary LaFree, PhD

Dr. Gary LaFree is director of the National Consortium for the Study of Terrorism and Responses to Terrorism (START) at the University of Maryland, as well as a professor in the Department of Criminology and Criminal Justice. Much of Dr. LaFree's current research is related to the development and analysis of the Global Terrorism Database. Before joining the faculty at UMD, Dr. LaFree served as chair of the Sociology and Criminology Department at the University of New Mexico for six years. He served as the director of the New Mexico Criminal Justice Statistics Analysis Center for 13 years. Dr. LaFree received the G. Paul Sylvestre Award for outstanding achievements in advancing criminal justice statistics in 1994, and the Phillip Hoke Award for excellence in applied research in 1994 and 1998 from the Justice Research Statistics Association. Dr. LaFree helped found and later served as director of the Institute for Social Research at the University of New Mexico. He has written over 60 articles and book chapters and three books and is currently on the editorial boards of seven journals. Dr. Lafree received his BA (magna cum laude), MA and PhD in sociology from Indiana University.

NATIONAL TRANSPORTATION SECURITY
Texas Southern University

Carol Lewis, PhD

Dr. Carol Lewis is an associate professor in transportation studies and director of the Center for Transportation Training and Research at Texas Southern University. In this capacity, she is responsible for educating students in fundamentals of transportation and urban transportation issues, as well as conducting operational and policy-related transportation research. Since joining the Texas Southern University faculty in 1992, she has been the principal investigator of more than 25 transportation research projects for federal, state and local governmental agencies. Dr. Lewis serves on a number of professional advisory committees for agencies including the Texas Department of Transportation, Houston Galveston Area Council (the metropolitan planning organization), and the City of Houston and in 2005 was named to a 4-month ad hoc committee for emergency management by the governor of Texas. She holds a BA in sociology and an MA in urban and transportation planning from the University of Iowa, and a PhD in political science from the University of Houston.

CENTER FOR ADVANCING MICROBIAL RISK ASSESSMENT (CAMRA)
University of Southern California

Isaac Maya, PhD, PE

Dr. Isaac Maya is the interim director of the National Center for Risk and Economic Analysis of Terrorism Events (CREATE). Prior to becoming interim director, Dr. Maya served as CREATE's director of research. He has over 25 years experience in executive management and strategic planning, academic and industrial research and development, product development and technology commercialization, and business start-up. As a senior researcher with technical leadership, his experience is divided evenly between industrial/commercial and academic environments, specializing in interdisciplinary R&D, and ranging in scope from analysis of terrorism events to information technologies and systems to advanced nuclear power reactor systems. He also has 10 inventions in the chemical engineering, electronics, medical, and nuclear fields, and over 100 refereed journal publications and technical reports. He is a registered professional nuclear engineer in California and was an astronaut candidate finalist in 1992.

NATIONAL TRANSPORTATION SECURITY
University of Arkansas

Heather Nachtmann, PhD

Dr. Heather Nachtmann is the director of the Mack-Blackwell Rural Transportation Center at the University of Arkansas. She is also an associate professor in the Department of Industrial Engineering at the University of Arkansas. Her current research focuses on improving decision-making through proper handling of uncertainty data elements with applications to transportation, logistics, and manufacturing systems. Dr. Nachtmann and two associates recently completed a study of rural transportation networks, adapting an urban-based tool to provide a low-cost and efficient tool for assessing the vulnerability of rural transportation assets in the event of an emergency such as a natural disaster or terrorist attack. She has received awards for outstanding advising from the College of Engineering at the University of Arkansas and was awarded the Eschenbach Best Paper Award from Engineering Management Journal and the Eugene L. Grant Best Paper Award from the Engineering Economist in 2004. Dr. Nachtmann earned her PhD, MS and BS at the University of Pittsburgh in industrial engineering.

BORDER SECURITY & IMMIGRATION
University of Arizona

Jay Nunamaker, PhD

Dr. Jay F. Nunamaker, Jr. is Regents and Soldwedel Professor of management information systems, computer science and communication; director of the National Center for Border Security and Immigration; and director of the Center for the Management of Information at the University of Arizona, Tucson. His current research focuses on deception detection (Agent 99) using linguistics, vocalics and kinesics. The goal is to develop deception detection technologies for rapid screening and credibility assessment in the laboratory and at the border to identify imposters, smugglers, terrorists and other criminals. Dr. Nunamaker has received numerous awards for teaching and research, including the LEO award from the Association of Information Systems (AIS) for a lifetime of exceptional achievement in information systems. He was also featured in the July 1997 Forbes Magazine issue on technology as one of eight innovators in information technology. Dr. Nunamaker received his PhD in operations research and systems engineering from Case Institute of Technology, an MS and BS in engineering from the University of Pittsburgh, and a BS from Carnegie Mellon University. He received his professional engineer's license in 1965.

AWARENESS AND LOCALIZATION OF EXPLOSIVES-RELATED THREATS (ALERT)
University of Rhode Island

Dr. Jimmie Oxley, PhD

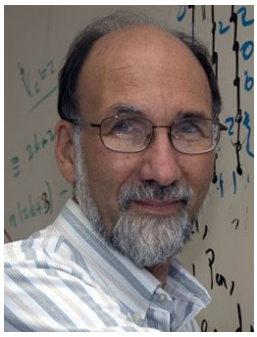
Dr. Jimmie Carol Oxley is professor of chemistry at the University of Rhode Island (URI) and co-director of the DHS Center of Excellence in Explosives Detection, Mitigation, & Response, also known as the Center of Awareness and Localization of Explosives-Related Threats (ALERT). Dr. Oxley's research interests include hazard analysis, explosive detection, and characterization and prevention of terrorist bombings, and she has worked with the FBI, FAA, and police agencies in the United States, United Kingdom, and Israel on research related to explosives and terrorism. She is often consulted on high-profile national and international explosives incidents, such as the 2005 London bombings and the 1993 World Trade Center bombing. Dr. Oxley is also a founding member and co-director of the Rhode Island Forensic Science Partnership, a collaboration of university, government, and industry stakeholders. She has authored over 90 papers on energetic materials (explosives, propellants, pyrotechnics). Dr. Oxley has a BA in chemistry from the University of California (San Diego), an MS in chemistry from California State University, and a PhD in chemistry from the University of British Columbia.

BORDER SECURITY & IMMIGRATION
University of Texas at El Paso

Jose D. Riojas

Jose (Joe) D. Riojas serves as the director of the DHS Center of Excellence for Border Security and Immigration and the executive director for the Center for Defense Systems Research, a DOD research center headquartered at the University of Texas at El Paso (UTEP). He is also vice president for strategic initiatives at UTEP, serves as chairman of the UTEP National Security Advisory Board, and is serving, by appointment, on the Texas Governor's Emerging Technology Fund Advisory Committee.

Mr. Riojas began his 30-year military career after graduating from the U.S. Military Academy at West Point as a second lieutenant in the field artillery in 1976. He is also a 1997 graduate of the U.S. Army War College, completing studies in national security strategy. His military assignments have taken him throughout the world and include service with the U.S. Department of State; service as the Army's representative on the Joint Requirements Oversight Panel; and executive officer to the chief of staff of the Army. He served in 5 different Army divisions and commanded for over 10 years at the battery, battalion, division artillery and task force levels. His last military assignment was as the commanding general of Joint Task Force North (JTF-N), which provided Department of Defense resources throughout the continental U.S. in support of law enforcement agencies so that they could more effectively interdict transnational threats including terrorists, weapons of mass destruction, aliens from special interest countries and narco-terrorism.



DYNAMIC DATA ANALYSIS (DYDAN)
Rutgers University
Fred Roberts, PhD

Dr. Fred Roberts is a professor of mathematics and the director of the Department of Homeland Security Center of Excellence on Dynamic Data Analysis (DyDAn) at Rutgers. As director, Dr. Roberts coordinates a consortium of university centers for collaboration with DHS on "discrete sciences." Dr. Roberts also chairs the Rutgers University Homeland Security Research Initiative, coordinating homeland security research efforts on all Rutgers' campuses. He is a member of the graduate faculties in computer science, computational molecular biology, BioMaPS (an interdisciplinary PhD program at the interface between the biological, mathematical, and physical sciences), and education. In January of 1996, he was named the director of the Center for Discrete Mathematics and Theoretical Computer Science (DIMAC). Dr. Roberts received his bachelor's degree in mathematics from Dartmouth College and his MS and PhD in mathematics from Stanford University.

CENTER FOR ADVANCING MICROBIAL RISK ASSESSMENT (CAMRA)
Michigan State University
Joan B. Rose, PhD

Dr. Joan B. Rose is the co-director of the Center for Advancing Microbial Risk Assessment (CAMRA), as well as the director of the Center for Water Sciences (CWS), and Homer Nowlin Chair in Water Research at Michigan State University. As the co-director, she has worked with Dr. Haas since 1988 and is a co-editor along with Dr. Haas of the only book on microbial risk assessment (*Quantitative Microbial Risk Assessment*). She has been involved with integrated microbial risk assessment (MRA) models with Drs. Casman and Small and has worked with Dr. Gerba on MRA as well as on methods and transport assessment for bacteria, parasites and viruses. She has been involved with EPA and development of the methods and data for support of various rule-making including the Enhanced Surface Water Treatment Rule. Her recent collaborations have examined zoonotic pathogens with Dr. Carole Bolin and biochip development with Dr. Syed Hashsham. Dr. Rose received her BS from the University of Arizona, her MS from the University of Wyoming, and a PhD in microbiology from the University of Arizona.

AWARENESS AND LOCALIZATION OF EXPLOSIVES-RELATED THREATS (ALERT)
University of Rhode Island
Michael B. Silevitch, PhD

Dr. Michael B. Silevitch joined the faculty of Northeastern in 1972 and was appointed to the Robert D. Black Endowed Chair in Engineering at Northeastern in 2003. In addition to co-leading the ALERT COE, he is the director of the Bernard M. Gordon Center for Subsurface Sensing and Imaging Systems, a National Science Foundation Engineering Research Center. Previously he was director of the Center for Electromagnetics Research (an NSF industry-university center) and the Center for the Enhancement of Science and Mathematics Education (CESAME). He is an elected fellow of the IEEE. Dr. Silevitch received his BS, MS, and PhD in electrical engineering from Northeastern University in 1965, 1966, and, 1971, respectively.

NATIONAL CONSORTIUM FOR THE STUDY OF TERRORISM AND RESPONSES TO TERRORISM (START)

University of Maryland

Kathleen Smarick, PhD

Dr. Kathleen Smarick is executive director of the National Consortium for the Study of Terrorism and Responses to Terrorism (START) at the University of Maryland. In that capacity, Dr. Smarick oversees more than 60 ongoing research projects and education programs supported by START as well as a range of educational programs for university students and for today's workforce. She previously served as the director of the ICONS project, an international education and training program at the University of Maryland. Dr. Smarick has developed and taught training programs in leadership, negotiation, conflict resolution, and crisis management for a variety of public- and private-sector officials. She has also taught courses in terrorism studies, international negotiation, international relations, and national security decision-making at both the University of Maryland and the United States Naval Academy and served as adjunct faculty and a fellow with the Integrative Center for Homeland Security at the Bush School of Public Policy at Texas A&M University. Her research focuses on individual and state behavior during international crises, and she is a co-author of "Mediating International Crises." Dr. Smarick earned a BA in government and international relations from the University of Notre Dame and an MA and PhD from the University of Maryland's Department of Government and Politics.

NATURAL DISASTERS, COASTAL INFRASTRUCTURE AND EMERGENCY MANAGEMENT (NDCIEM)

University of North Carolina at Chapel Hill

Gavin Smith, PhD

Dr. Gavin Smith is the executive director of the Center for the Study of Natural Hazards and Disasters (CSNHD) at UNC Chapel Hill and the executive director of the Department of Homeland Security's Center of Natural Disasters, Coastal Infrastructure and Emergency Management (NDCIEM). In his position at CSNHD, Dr. Smith oversees the administration of the center including the identification of research opportunities, building partnerships among hazard scholars and practitioners, and managing additional research initiatives and subcenters as they emerge. Within the NDCIEM, he is currently engaged in planning-related research focused on a national evaluation of local and state hazard mitigation plans. Prior to his work at UNC, Dr. Smith served as principal of a 4000-person firm, providing high-level policy counsel to governors, federal agencies, corporations, and others regarding disaster recovery and hazard mitigation practices.

Dr. Smith is also an associate research professor in the Department of City and Regional Planning at UNC Chapel Hill and teaches courses in disaster recovery, hazard mitigation and special topics. He has published numerous technical papers and reports and is currently writing the text, *A Review of the United States Disaster Assistance Framework: Planning for Recovery* (Public Entity Risk Institute). Dr. Smith holds a PhD in urban and regional planning, specializing in environmental planning and policy, environmental dispute resolution and hazard mitigation, and he also has BS and MS degrees in sociology. All of his degrees are from Texas A&M University.

NATIONAL TRANSPORTATION SECURITY

Tougaloo College

Abdul Turay, PhD

Dr. Abdul Turay is provost and vice president for academic affairs of Tougaloo College in Mississippi. As the chief academic officer of the college, he is responsible for all units reporting directly to the Office of Academic Affairs, including academic divisions, the registrar, the library, athletics, TRIO, the Office of Sponsored Programs, the Division of Continuing Education and Professional Studies, and the Comprehensive Academic Resources Program. Dr. Turay also reviews and processes all faculty and academic administrative appointments. From 1998 to 2005, Dr. Turay was dean for research and graduate studies and professor of economics at Western Carolina University. Prior to this, he

served as dean for graduate studies and research, and professor of economics, at Southern Illinois University at Edwardsville. Dr. Turay received his PhD in economics from the University of Oklahoma, an MA in economics from Atlanta University, and a BA in economics from Morehouse College.

NATURAL DISASTERS, COASTAL INFRASTRUCTURE AND EMERGENCY MANAGEMENT (NDCIEM)

Jackson State University

Robert W. Whalin, PhD, PE

Dr. Whalin is the Associate Dean of the College of Science, Engineering and Technology at Jackson State University (JSU) and the executive director of the Department of Homeland Security's Center of Natural Disasters, Coastal Infrastructure and Emergency Management (NDCIEM). Within the NDCIEM, he is currently engaged in developing educational curricula focused on natural disasters that will serve as a firm and enduring foundation for producing the next generation of highly educated, creative and innovative researchers to help solve the existing and future DHS challenges relating to natural disasters in coastal areas. His research interests include coastal engineering (breakwaters, wave transformations, non-linear wave theory, coastal/estuarine hydraulic modeling, long waves, tsunamis, sediment transport, shoreline evolution, tidal circulation, hurricane surge, wind-driven circulation); projectile penetration; weapons effects; high performance computing; organizational performance. Dr. Whalin holds a PhD in Physical Oceanography from Texas A&M University, an MS in Physics from the University of Illinois-Urbana and a BS in Physics from the University of Kentucky.

CENTER FOR ISLAND, MARITIME AND EXTREME ENVIRONMENT SECURITY (CIMES)

Univeristy of Hawaii

Roy Wilkens, PhD

Dr. Roy Wilkens is a senior research scientist at the Hawaii Institute of Geophysics & Planetology, University of Hawaii (UH), and the director of CIMES (The National Center for Island, Maritime, and Extreme Environment Security). His research interests include borehole geophysics, physical properties of rocks and sediments, instrumentation development, and seafloor structure. He has been a distinguished visiting scientist at the Naval Research Laboratory and was a program officer for marine geology and geophysics at the Office of Naval Research (ONR) from 1999 to 2001. He recently served as the coordinator for ONR's mine burial prediction program—a 6-year–long study of the interactions of shallow water mines with the seafloor. He is also involved in ONR's Hawaii Scientific Drilling Project. Dr. Wilkens holds a BA in history from the State University College of New York at New Paltz, an MA in geology from the State University of New York at Binghamton, and a PhD in geological sciences from the University of Washington.

MODERATORS AND PANEL MEMBER:

Michael Accorsi, PhD

Professor Michael Accorsi is the head of the Civil & Environmental Engineering Department at the University of Connecticut. He holds a joint appointment with the Mechanical Engineering Department and also currently serves as interim director of the Connecticut Transportation Institute, a unit of the School of Engineering. Dr. Accorsi's research focuses on computational solid mechanics, with specific application to composite materials, structural acoustics, and parachute mechanics. He has performed novel work in the area of computer simulation of parachute dynamics with support from the Army Research Office, Air Force Office of Scientific Research, NASA and the U.S. Army Soldier Systems Center. Dr. Accorsi received the Commander's Educational Award for Excellence from the U.S. Army Soldier Systems Command and is the co-inventor on one U.S. patent. Dr. Accorsi earned his PhD in applied mechanics at Northwestern University in Evanston, IL.

Gary Ackerman

Mr. Gary Ackerman is the assistant director for research and communication of START and is responsible for managing START research projects, exploring new avenues for research, and establishing collaborative research relationships with other institutions. His research encompasses various areas relating to terrorism and counterterrorism, including terrorist threat assessment, terrorist technologies and motivations, terrorism involving chemical, biological, radiological, and nuclear (CBRN) weapons, terrorist financing, environmental extremism, and the modeling and simulation of terrorist behavior. Mr. Ackerman possesses an eclectic academic background, including past studies in the fields of mathematics, history, law, and international relations, and has won numerous academic awards. He received his MA in international relations (strategic studies - terrorism) from Yale University and his bachelor's (law, mathematics, international relations) and honors degrees (international relations) from the University of the Witwatersrand in Johannesburg, South Africa.

Jason Ackleson, PhD

Dr. Jason Ackleson is an associate professor in the Department of Government at New Mexico State University. He teaches courses in international relations, comparative politics, and political science. His commitment to students extends through his work as faculty advisor for the award-winning NMSU Model United Nations program, a leading student simulation of international politics and diplomacy. Dr. Ackleson is also affiliated with the National Center for Food Protection and Defense, based at the University of Minnesota. Along with Dr. Justin Kastner of Kansas State University, he directs Frontier—an interdisciplinary program for the historical studies of border security, food security, and trade policy. His current research is focused on migration and border security. Dr Ackleson earned his PhD in international relations at the London School of Economics and Political Science.

L. Garry Adams, DVM, PhD

Dr. L. Garry Adams is a professor of veterinary pathology and the associate dean for research and graduate studies for the College of Veterinary Medicine at Texas A&M University. For almost two decades, he has been actively involved in improving the scientific basis of the two largest animal-health regulatory programs in the United States: brucellosis and tuberculosis. Recently, he has been very active in developing and implementing biodefense and emerging diseases research initiatives, and he has provided expert testimony to the U.S. House Committee for Homeland Defense as well as serving on the National Institutes of Health, Biodefense & Emerging Diseases, Blue Ribbon Committee for Category B and C Pathogens. He serves as the scientific leader for the biological systems section of the recently established Department-of-Homeland-Security–sponsored National Center for Foreign Animal Disease & Zoonotic Disease Defense. Dr. Adams earned an associate of science degree from Tarleton State University, a BS in animal science, and a PhD in veterinary pathology as well as a DVM from Texas A&M University.

Nabil R. Adam, PhD

Dr. Nabil Adam is currently serving as a fellow at the Science & Technology Directorate of the U.S. Department of Homeland Security. He is a professor of computers and information systems; the founding director of the Rutgers University Center for Information Management, Integration and Connectivity (CIMIC); the director of the recently established Information Technology for Emergency Management (i-TEAM) Research Laboratory at Rutgers; co-founder and past director of the Meadowlands

Environmental Research Institute; and past chair of the Management Science and Information Systems Department at Rutgers Business School. Dr. Adam has published over 100 technical papers covering such topics as information management, information security and privacy, data mining, web services and modeling & simulation, and he has co-authored/co-edited ten books. Dr. Adam is the cofounder and the executive-editor-in-chief of the International Journal on Digital Libraries and serves on the editorial board of a number of journals. He is also the cofounder and past chair of the IEEE Technical Committee on Digital Libraries. Dr. Adam holds a European-issued patent and has two pending patent applications submitted to the U.S. Patent and Trademark Office; all patents are related to web services. Dr. Adam's research work has been supported by over $15 million from various federal and state agencies, including the National Science Foundation (NSF), the National Security Agency (NSA), the National Oceanic and Atmospheric Administration (NOAA), and others. Dr. Adam received his MS, MPhil and PhD from Columbia University.

Terri Adams-Fuller, PhD

Dr. Terri Adams-Fuller is an assistant professor of administration and justice in Howard University's Department of Sociology and Anthropology. Her research takes a multidisciplinary approach to examining issues that have both theoretical and practical implications. Her specific research interest includes policing, domestic violence, and the sociology of disasters. Dr. Adams-Fuller's most recent work centers on the decision-making processes of both individuals and organizations in the midst of disasters. In addition to her academic work, Dr. Adams-Fuller has served as a research consultant for a number of agencies and nonprofit organizations including the Metropolitan Police Department, the National Organization of Black Law Enforcement Executives, the Prince George's Center for Youth and Family Research, the Fraternal Order of Police Metropolitan Police Labor Committee, and the Urban Institute. She received her PhD from Howard University.

Mustafa S. Altinakar, PhD

Dr. Mustafa S. Altinakar is currently the associate director and a research professor at the National Center for Computational Hydroscience and Engineering (NCCHE) of the University of Mississippi in Oxford, Mississippi. He is also the principal investigator of two research projects for developing 2D flood simulation models and GIS-based decision-support systems for flood mitigation and management. His has co-authored two textbooks and has published more than 60 journal articles, conference papers, and articles for online encyclopedias. He has been invited to deliver keynote lectures and short courses at universities and leading research institutes around the world. Dr. Altinakar obtained his PhD in hydraulics at the Laboratoire de Recherches Hydrauliques (LRH), Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland, and his MS and BS degrees in civil engineering at the Middle East Technical University, Ankara, Turkey.

Ian Anderson

Mr. Ian Anderson is a master's student in public policy at the University at Albany, SUNY.

Victor Asal, PhD

Dr. Victor Asal is an assistant professor of political science at Rockefeller College at the University at Albany, SUNY and a research associate with a focus on ethnic terrorism and mass casualty terrorism for the National Center for the Study of Terrorism and Responses to Terrorism (START). He is also the director of the Public Security Studies Certificate program at the University of Albany, SUNY and is a research associate at the Center for International Development and Conflict Management at the University of Maryland at College Park. Dr. Asal received his PhD in government and politics from the University of Maryland. He holds MAs in government and politics from the University of Maryland and in international relations from the Hebrew University of Jerusalem. Dr. Asal's research has focused on terrorist behavior including terrorist targeting the United States, structural and social antecedents to terror, nonstate actor mobilization online, and international crisis behavior.

Ryan Austin

Mr. Ryan Austin is a doctoral candidate at the University of Arizona in the Department of Agricultural and Biosystems Engineering. He received his BS and MS at Arizona, with his MS focusing on mixing in water distribution pipe networks. For his doctorate, which is being support by CAMRA, he is focusing on modeling water distribution systems to better predict contaminant spread in municipal water systems for microbial risk assessment.

Tami Beckham, PhD

Dr. Tami Beckham has led a distinguished scientific career, with an emphasis on diagnostic technologies, animal health and infectious diseases. In May of 2008, Dr. Beckham joined the Texas A&M University System as director of the Texas Veterinary Medical Diagnostic Laboratory. In this role, she leads one of the busiest and most productive veterinary diagnostic laboratories in the world. As director of TVMDL, Dr. Beckham works to serve the animal industries of Texas. She is responsible for coordinating diagnostic services among the various laboratory disciplines and branch laboratories and providing leadership and direction in the areas of resource management, quality assurance, safety and all other aspects of laboratory operations. Dr. Beckham received her DVM degree at Auburn University in Auburn, Alabama. While still at Auburn, she furthered her education through a doctoral program, conducting research for her dissertation at the U.S. Army Medical Research Institute for Infectious Diseases (USAMRIID) in Frederick, MD. After completing her dissertation, Dr. Beckham received her doctorate in biomedical science.

Christine Bevc

Ms. Christine Bevc is a research assistant at the Natural Hazards Center and a PhD student in sociology at the University of Colorado. She has her master's degree in applied sociology and a bachelor's degree in liberal studies from the University of Central Florida.

Vicki Bier, PhD

Dr. Vicki Bier is a risk and decision analyst specializing in probabilistic risk analysis for homeland security and critical infrastructure protection in the Department of Industrial and Systems Engineering at the University of Wisconsin-Madison. Her current research interests include the application of game theory to identify optimal resource allocation strategies for protecting critical infrastructure from intentional attacks. Other interests include vulnerability assessment for critical infrastructure; the use of accident "precursors" or near misses in probabilistic risk analysis; the use of expert opinion; and methods for effective risk communication, both to decision-makers and to the general public. Professor Bier is also the director of the Center for Human Performance and Risk Analysis at the University of Wisconsin-Madison.

Jade Blackwood

Ms. Jade Mitchell-Blackwood is a PhD candidate in environmental engineering at Drexel University in Philadelphia, PA. She is currently conducting research under the supervision of Dr. Patrick L. Gurian, a principal investigator of CAMRA (Center for Advancing Microbial Risk Assessment). She was recently awarded the Society for Risk Analysis (SRA) Biological Stressors Specialty Group (BSSG) Student Merit Award for her work on this project. Ms. Blackwood holds a BS degree from the University of Pittsburgh in civil and environmental engineering, and an MS degree in civil engineering from Drexel University. Her research interests include water quality and treatment, microbial risk assessment, environmental policy, environmental modeling, statistics, and bioterrorism.

Charles Blair

Mr. Charles Blair is a research associate at the National Consortium for the Study of Terrorism and Responses to Terrorism (START) and manager of the Global Terrorism Database (GTD). His work revolves primarily around the construction and maintenance of large terrorism-related databases. Prior to his work on the GTD, Mr. Blair worked on the Center for Nonproliferation Studies' Weapons of Mass Destruction Terrorism Database (WMDTD), the Centers for Disease Control's Incident and Response WMD Database (IRD) and several classified databases for the Lawrence Livermore National Laboratory (LLNL). His latest publication is "Jihadism and Improvised Nuclear Devices." Mr. Blair earned a BA in history from the University of Colorado at Boulder and an MA in nonproliferation studies from the Monterey Institute of International Studies.

Brock Blomberg, PhD

Professor Blomberg is the Peter and Robin Barker Professor at Claremont McKenna College with appointments in the economics department and the politics, philosophy, and economics program. He has taught courses in macroeconomics, microeconomics, international economics, econometrics, statistics and political economy. His research interests are grounded in macroeconomics, international economics, political economy and are focused on terrorism. Dr. Blomberg has written extensively on the economics of terrorism in journals, books, and newspapers. Over the past 14 years, he has published 34 articles and book chapters in such

top economics journals as the American Economic Review, Journal of Monetary Economics, Journal of International Economics, Journal of Public Economics and the Review of Economics and Statistics. Dr. Blomberg has held appointments on the president's Council of Economic Advisors, the Federal Reserve Bank of New York, the Federal Reserve Board of Governors, the International Monetary Fund and World Bank, Harvard University and Wellesley College. He also served in the United States Military for eight years and been the United States representative to the Economic Committee for Asian Pacific Economic Cooperation (APEC).

Troy E. Brown, PhD

Dr. Troy Brown is the chief of the research division at the Defense Academy for Credibility Assessment (DACA) in Columbia (Fort Jackson), South Carolina. Prior to his appointment in 2007, he served as a research psychologist in the division for seven years. Dr. Brown's general areas of expertise include autonomic and cardiovascular physiology and biomedical engineering, and he has been an investigator on numerous research efforts with DACA. He also previously worked with NASA at the Johnson Space Center in Houston, Texas where he investigated changes in cardiovascular regulation associated with spaceflight. He attended Texas A&M University in College Station, Texas where he earned a PhD in veterinary physiology (1989) and master's (1985) and bachelor's (1983) degrees in bioengineering. After finishing graduate school, he completed a post-doctoral fellowship in cardiovascular physiology at the Medical College of Virginia in Richmond. Dr. Brown has published numerous papers in the scientific literature and has received many awards and commendations related to his professional activities, including the NASA Group Achievement Award in 1992 and 1998 and a commendation from the Virginia Governor's School in 1990.

Frank Busta, PhD

Dr. Frank Busta is the director emeritus and senior science advisor of the National Center for Food Protection and Defense (NCFPD) based at the University of Minnesota. Professor Busta was named as the first director of NCFPD in 2004. Previously he held faculty positions at the University of Minnesota, North Carolina State University, and the University of Florida. He served as chair of the Department of Food Science and Human Nutrition from 1984 to 1987 at the University of Florida and head of the Department of Food Science & Nutrition, University of Minnesota from 1987 to 1997. Dr. Busta's research interests include food safety, growth and survival of microorganisms after environmental stress in food, and microbial ecology of the colon. He has published more than 125 refereed research papers and continues to contribute his expertise to courses such as food microbiology and issues in food science. He received the Center for Food Safety and Animal Nutrition (CFSAN) Director's Special Citation in 2003 for outstanding contributions to CFSAN through expert and independent food security threat assessments. He has served as chief technology advisor on a UNDP project in China on agri-processing within the WTO framework, and also served for 15 years on the International Commission on the Microbiological Specifications for Food (ICMSF).

Jennifer Butler

Ms. Jennifer Butler is the associate director of the Stephenson Disaster Management Institute (SDMI) in the E. J. Ourso College of Business at Louisiana State University. At SDMI, Ms. Butler is responsible for overall grant management to further the institute's mission and research agenda. She also serves as the program manager for the LSU research projects conducted through the Center of Excellence for the Study of Natural Disasters, Coastal Infrastructure and Emergency Management. Ms. Butler earned a BS in history and economics from Oklahoma City University, graduating magna cum laude. She also earned an associate certificate in federal contracting and a master's certificate in grants management from George Washington University.

David Caspi, JD

After four years of practicing corporate and general business law, Mr. Caspi left the practice of law in 2004 to pursue a career in academia. He is currently a 3rd-level doctoral student at John Jay College of Criminal Justice/CUNY. Mr. Caspi is completing his doctoral dissertation, which involves using social network analysis methodology to study the various types of links that exist between, and amongst, violent domestic extremists. He is specifically looking at white supremacist organizations and individuals that have demonstrated a willingness to commit ideologically motivated acts of violence.

David A. Castañon, PhD

Dr. David A. Castañon is a professor of electrical and computer engineering at Boston University and leader of the Explosives

Sensors Systems Thrust of the ALERT COE. Before joining Boston University in 1991, he had been chief scientist at Alphatech, Inc. and a research scientist at MIT's Lab for Information and Decision Systems. He received his BSEE from Tulane University in 1971 and his PhD from MIT in 1976. He is the past president of the IEEE Control Systems Society and is currently codirector of Boston University's Center for Information and Systems Engineering.

Xi Chen, PhD

Dr. Xi Chen is an assistant professor with a joint appointment in Political Science and Global Security Studies. She teaches the foundations course in global security studies and classes on East Asian politics. Her research is on Chinese government use of the state-owned media to influence internal and international opinion on issues of international and domestic policy. She coordinates UTPA's collaboration with Shandong Normal University, Chingdao, China, a partnership that she created. Her research is published in leading scholarly journals in the United States and China, and she is a regular speaker at national and international conferences on Chinese political policy and the media. Dr. Chen received her PhD from Virginia Tech.

Steven M. Chermak, PhD

Dr. Steven M. Chermak is a professor in the criminal justice department at Michigan State University. Steven is also a lead investigator for the National Consortium for the Study of Terrorism and Responses to Terrorism (START), a Center of Excellence of the U.S. Department of Homeland Security. His research interests include identifying effective strategies for reducing crime and violence, policing, domestic terrorism, and media coverage of crime and justice. His current research projects include a National-Institute-of-Justice–funded project examining the impact of a violence-reduction strategy on gun violence in Pittsburgh. This study includes building a national database of criminal incidents involving far right extremists, and another project involves building a terrorism data archive. Professor Chermak is the author of *Victims in the News: Crime and the American News Media and Searching for a Demon: The Media Construction of the Militia Movement.* He earned his PhD in criminal justice from the University at Albany, SUNY.

Ronald S. Colburn

Mr. Ronald S. Colburn is currently the national deputy chief of the United States Border Patrol in Washington, D.C. He is the second highest-ranking Border Patrol agent in the nation. Previously, as chief of the Yuma Sector, he was responsible for three Border Patrol stations within the Yuma Sector area of operations. Chief Colburn is a 30-year veteran of the Border Patrol, entering on duty in 1978. After graduating from Mesa College in Mesa, Arizona, and attending Arizona State University in Tempe, Arizona, Chief Colburn attended the 125th session of the U.S. Border Patrol Academy from which he graduated with honors. Additionally, the chief is a founding member of the Border Patrol's national special weapons and tactics unit known as BORTAC. While a member of BORTAC, Chief Colburn served as team leader on numerous domestic and international missions. The chief was also responsible for establishing a national police-training academy in Central America. In the United States, Chief Colburn has trained local city, county and state special weapons and tactics (SWAT) teams, as well as other federal and military organizations in tactical operations. Prior to assuming duties as Yuma Sector's chief patrol agent, he served as the senior associate chief of Southern Border Operations, Headquarters, Office of Border Patrol, U.S. Customs and Border Protection, Washington, D.C. He is the only Border Patrol agent in the history of the agency to have served an assignment to the White House with the Executive Office of the President.

Lieutenant Commander David W. Cooper

LCDR David Cooper is a Coast Guard officer and the Chief of the Integration Division within the Office of Performance Management and Assessment (CG-512). LCDR Cooper advises senior leadership & mission-programs on performance measurement, risk management, organizational change and engagement with external elements including GAO, OMB, and DHS. Prior assignments include being a helicopter pilot in Jacksonville, Florida and Atlantic City, New Jersey. Before flying, LCDR Cooper was a Deck Watch Officer on the USCGC RELAINCE, a 210' cutter stationed in Portsmouth, New Hampshire. LCRD Cooper graduated in 1994 from the U.S. Coast Guard Academy with a Bachelors of Science in Government. He is a 1998 graduate of Naval Flight School and was designated Coast Guard aviator #3359. Also, LCDR Cooper is a 2006 graduate of the Woodrow Wilson School of Policy and International Affairs at Princeton University with a Masters of Public Policy. LCDR Cooper has been awarded the Coast Guard Commendation Medal (two awards), the Coast Guard Achievement Medal (two awards) and the Commandant's Letter of Commendation (two awards) among other service medals and awards.

George Cummings

George P. Cummings is the director of homeland security for the Port of Los Angeles, one of the busiest, most successful seaports in the nation. In this position, he coordinates the Port's involvement in homeland security, maritime security and emergency preparedness at the national, state and local levels. He is responsible for the development of security infrastructure throughout the port and pursues grant funding for major projects such as port-wide surveillance cameras and access control systems. Cummings retired from the U.S. Coast Guard at the rank of commander after serving 21 years as a commissioned officer. His Coast Guard career included shipboard engineering, marine safety and maritime security assignments. Cummings' formal education includes a master of science in mechanical engineering from the U.S. Naval Post Graduate School, a bachelor of science in marine engineering from the U.S. Coast Guard Academy, and a professional designation as a Global Logistics Specialist from California State University, Long Beach.

James Curren

Mr. James Curren currently serves as TSA's Office of Law Enforcement/Federal Air Marshal Service (FAMS) chief of the Studies, Research and Analysis Unit. In this position he oversees the FAMS risk-based approach to scheduling deployments. His organization is also responsible for developing metrics for reporting the FAMS performance in addressing risk within the aviation domain. He and his group have supported FAMS missions with near real-time analysis for a number of key homeland security events such as the DHS response to Katrina, the UK liquid explosive threat of 2006, and the evacuation of Lebanon. Mr. Curren received an MA in security policy studies from George Washington University in 1983. He is currently enrolled in an MA program in homeland security at the Naval Postgraduate School.

Bob Dean, ScD

Dr. Bob G. Dean is professor emeritus in the coastal and oceanographic engineering program of the Civil and Coastal Engineering Department at the University of Florida in Gainesville, Florida. He has researched and taught subjects relating to waves and wave forces and beach systems for the last 47 years. He has co-authored two books, *Water Wave Mechanics for Engineers and Scientists and Coastal Processes with Engineering Applications*, and has authored a book titled *Beach Nourishment: Theory and Practice*. He has authored or co-authored over 200 technical publications and consulted with approximately 150 firms and governmental agencies in the general area of coastal and ocean engineering. He holds a BS in civil engineering from the University of California at Berkeley, an MS in physical oceanography from Texas A&M University, and a Doctor of Science (ScD) degree in civil engineering from the Massachusetts Institute of Technology.

Frank DeNap

Mr. Frank DeNap has over 20 years of experience conducting research programs both in the government and commercial sector. He is currently a senior program manager at Oak Ridge National Laboratory for the SensorNet Program. SensorNet involves developing a national-level–capable system to collect process and fuse sensor data into a common situational awareness picture. Prior to joining ORNL, he was a visiting researcher at Stanford University investigating advance fiber optic systems and served as the director of Sprint's Advance Technology Lab in Burlingame, CA. As the director, he lead a team of scientists and engineers in exploring , developing and testing advance fiber optic, wireless, internet and security systems.

Ruth Doherty, PhD

Dr. Ruth M. Doherty joined the Department of Homeland Security Science and Technology Directorate to become the program executive officer for counter-IED [PEO (CIED)] in April 2008. She came to DHS with over 25 years of experience with the U.S. Navy in the area of research and development of energetic materials. Dr. Doherty is internationally recognized as an expert in energetic materials, having served as the technical project officer on several Data Exchange Agreement Annexes for the Navy, and has been an invited speaker at international conferences in Europe and Asia. She is a member of the editorial advisory board of the journal Propellants, Explosives and Pyrotechnics. In 2004 Dr. Doherty was awarded the Navy Meritorious Civilian Service Award.

Amy K. Donahue, PhD

Dr. Amy K. Donahue is head of the Department of Public Policy at the University of Connecticut. Dr. Donahue's research focuses on the productivity of emergency services organizations and on the nature of citizen demand for public safety. She is an author of published work about the design, management, and finance of fire departments and other public agencies. She recently returned from a sabbatical appointment at Louisiana State University, where she served as the founding director of the Stephenson Disaster Management Institute, a research institute focused on the challenges of managing large disaster responses. For the past six years, Dr. Donahue has served as a technical advisor to the Department of Homeland Security's Science and Technology Directorate, helping to develop research and development programs to meet the technological needs of emergency responders. Dr. Donahue holds her PhD in public administration, an MPA from the Maxwell School of Citizenship and Public Affairs at Syracuse University, and a BA from Princeton University in geological and geophysical sciences.

Curtis Dubay, PE

Mr. Curtis Dubay is currently serving as the director of the Coast Guard Maritime Domain Awareness Program Integration Office, and as deputy director of the DHS Office of Executive Agent for Maritime Domain Awareness. He has over 25 years of experience in the provisioning, operation, and policy of national civil positioning, navigation and timing (PNT) systems, and recently chaired the DHS PNT policy working group. Mr. Dubay's current duties include coordination of Department of Homeland Security maritime domain awareness efforts and Coast Guard maritime domain awareness and information sharing efforts. He is a 1979 Coast Guard Academy graduate and holds a master's degree in electrical engineering and is a licensed professional engineer.

Laura Dugan, PhD

Dr. Laura Dugan is an associate professor in the Department of Criminology and Criminal Justice at the University of Maryland. She is a member of the National Center for the Study of Terrorism and the Response to Terrorism, the National Consortium on Violence Research, and the Maryland Population Research Center. Her research examines the consequences of violence and the efficacy of violence prevention/intervention policy and practice. She also designs methodological strategies to overcome data limitations inherent in the social sciences. She has published several articles on terrorism, victimization, policy, and methods. Professor Dugan received a PhD in public policy and management from Carnegie Mellon University, a master's in statistics from Carnegie Mellon, and a master's in management and public policy.

Robert Dye, PhD

Dr. Robert Dye has organized and structured large efforts at Los Alamos National Laboratory and in industry. His technical work at Los Alamos has focused on applying nanotechnology to energetics, separations, and material science. He has contributed significantly in these areas with 92 publications and 9 patents. He received Los Alamos's "Recognition of Excellence in Achieving Industrial Partnerships Award" in 1995, 1996, and 1997. In 1998, he was honored with Los Alamos National Laboratory's Distinguished Performance Award for his fundamental work on beryllium permeation. In the area of defense programs, Dr. Dye has launched several efforts to investigate nano-energetics and nano-energetic applications. His research has led to new nanoparticles and nanocomposites as well as novel methods in nanomaterials characterization. He has been a project leader for the Joint DoD/DOE Munitions Program and is still active in the commercialization of the program's technologies. Dr. Dye has been successful in constructing a multimillion dollar DARPA program from the bottom up and has extensive experience working with Washington, D.C., sponsors.

Billy Edge, PhD

Dr. Billy Edge is Bauer Professor and director of the Reta and Bill Haynes '46 Coastal Engineering Laboratory at Texas A&M University. He received his PhD from Georgia Tech in 1968 and has been actively involved in coastal and ocean engineering research and education for over 40 years. He served as a member of the prestigious Coastal Engineering Research Board, U.S. Army Corps of Engineers. He has been a key participant in the exhaustive analyses of Hurricane Katrina, the reasons for the flooding in New Orleans, and recommendations for future protection of New Orleans. His research interests include coastal engineering, dredging technology, coastal zone management, marine structures, bridge scour, and beach nourishment.

Frances L. Edwards, PhD

Dr. Frances L. Edwards is an associate professor and director of the Master of Public Administration program at San Jose State University and is the deputy director of the Mineta Transportation Institute's National Transportation Security Center of Excellence. She is co-author with Friedrich Steinhausler of two books in the NATO Science Series on terrorism threats, and co-authored a book with Brian Jenkins on 9/11. Dr. Edwards has also written over 30 professional journal articles, most recently on Hurricane Katrina and on federal homeland security grants. She is a member of the ASPA Hurricane Katrina Task Force, and has been a member of the Executive Session on Domestic Preparedness at Harvard, the Bioterrorism Working Group at Stanford, and three NATO expert workshop panels on terrorism. For 25 years, Dr. Edwards was a practitioner, including 14 years as the director of emergency preparedness for San Jose, California, the nation's 10th largest city. She has a PhD in public administration, a master's degree in urban planning, an MA in political science/international relations, and a certificate in hazardous materials management.

Captain Suzanne Englebert

Captain Suzanne Englebert is a 1984 graduate of the U.S. Coast Guard Academy. She has served as a deck watch officer aboard the 180' buoy tender CGC IRIS that operated off the coast of Oregon, commanded a Long Range Aids to Navigation station in Okinawa, Japan, and trained as a junior in the Puget Sound to become a fully qualified marine inspector. She has run inspection and marine safety field programs off the coast of Maine and in the Upper Great Lakes (Duluth, MN). Captain Englebert was assigned to Coast Guard Headquarters in Washington, D.C., where her work included developing national regulations for lifesaving safety standards, pollution prevention measures, and comprehensive maritime security requirements. She has also commanded USCG missions in the Midwest, including the 11-state region known as Sector Upper Mississippi River. Prior to becoming the commander of Seattle Sector and Captain of the Port, she was the chief of prevention for the U.S. Coast Guard's 7th District in Miami, Florida.

Anthony Flood

As program manager for food safety at the International Food Information Council (IFIC), Mr. Anthony Flood has worked for the past 13 years on a number of food safety and nutrition issues, managing the external communications of food safety education and outreach programs. He coordinates the development of communication materials, educational sessions, and workshops at national health professional meetings on food safety topics ranging from acrylamide in food to food allergy management to risk communications. These educational programs and workshops are part of an ongoing partnership activity cultivated between IFIC and opinion leader and governmental organizations to increase understanding, outreach, and education among consumers on numerous food safety issues. Mr. Flood is currently active with the International Association for Food Protection (IAFP), the Institute of Food Technologists (IFT) and various local and charitable organizations in Washington, D.C.

Joshua D. Freilich, PhD, JD

Dr. Joshua D. Freilich is a lead investigator for the National Consortium for the Study of Terrorism and Responses to Terrorism, a Center of Excellence of the U.S. Department of Homeland Security. He is also the deputy director of the criminal justice PhD program at John Jay College & GC, CUNY. Dr. Freilich's research interests include terrorism, far–right-wing ideology and crime, environmental criminology, and criminological theory. His research has been funded by DHS and START and has appeared in journals such as Law & Human Behavior, Criminology & Public Policy, Criminal Justice & Behavior, Justice Quarterly, Journal of Criminal Justice, Journal of Contemporary Criminal Justice, Prison Journal, and Behavioral Sciences & the Law. Dr. Freilich has been teaching at John Jay College since 2000. He is a Brooklyn College, CUNY graduate. He earned his PhD in criminal justice from the University at Albany, SUNY, and his JD from Brooklyn Law School.

Lenora Gant, PhD

Dr. Lenora Gant is a Senior Intelligence/Executive Service and Director of the Office of the Intelligence Community (IC) Centers of Academic Excellence (CAE) where she directs IC CAE operations for fourteen U.S. universities. She provides guidance and oversees strategic alignment with ODNI and IC policy directives. Before assuming her current assignment she served a two-year sabbatical at Trinity University, Washington, DC, as visiting professor and scholar-in-residence in International Affairs. Her IC CAE directive and approach emphasizes building, maintaining, and enhancing partnerships linking federal agencies, academia, and industry in support of the U.S. National Intelligence Strategy, DNI Strategic Plans and Vision 2015. Gant served several years on

the Director of Central Intelligence (Tenet) staff, advising the DCI on workforce management and training/education. She directed IC-wide inter-agency teams and oversaw development of human capital/workforce policy. She chaired the Intelligence Community Diversity Issues Board (CDIB) comprised of senior officers from the sixteen IC agencies/elements. She has published in academic and IC journals, and taught and administered programs at the Joint Military Intelligence College and the Joint Military Intelligence Training Center. Dr. Gant holds a PhD from Virginia Tech, and a BA from Florida A & M.

Theophilos C. Gemelas

Mr. Theophilos Gemelas is currently the program manager of University Programs for the Science and Technology Directorate of the Department of Homeland Security. In this position, Mr. Gemelas oversees two Centers of Excellence: the Center for Border Security and Immigration and the Center for Maritime, Island and Port Security. From 2005 to 2008, he was a senior advisor to the director and principal analyst with the Homeland Security Institute, a federally-funded research and development center for homeland security. From 2007 to 2008, Mr. Gemelas regularly participated as a panel member for an Aspen Institute study examining the preparedness activities of major U.S. cities. Mr. Gemelas is a member of the Naval War College Foundation, frequently lectures at the Army War College on maritime security, and holds degrees from the University of Pittsburgh in political science (BA) and public and international affairs (MPIA).

Scott Glenn, ScD

Dr. Scott Glenn is a professor and vice-chair in the Department of Marine and Coastal Sciences at Rutgers University and also serves as co-director for the Rutgers University Coastal Ocean Observation Laboratory. His research currently focuses on the development of regional-scale coastal ocean observation networks. Research on the sustained components of the system include the testing of new ocean color algorithms in coastal regions using data acquired from the international constellation of satellites, the development of dual-use multi-static HF radar networks for surface current mapping and ship-tracking, and the development of systems to coordinate the operation of fleets of long-duration autonomous underwater gliders. Dr. Glenn has received numerous awards for excellence in research and teaching and has published over 120 scientific papers. He holds a BS (with high honors) in geomechanics from the University of Rochester and an ScD in Ocean Engineering from MIT.

Carsten Görg, PhD

Carsten Görg is a postdoctoral researcher at the School of Interactive Computing at the Georgia Institute of Technology, where he works with the Information Interfaces Research Lab. Dr. Görg is a member of the Georgia Tech component of the Southeast Regional Visualization and Analytics Center, which is part of the Department of Homeland Security's Regional Visualization and Analytics Center of Excellence. His main research is in visual analytics and information visualization with a focus on building human-centered systems. He also applies visualization techniques to other domains (e.g. software visualization). Last year, Dr. Görg taught courses in information visualization and visual analytics as visiting faculty at Saarland University in Germany. He is a member of the program committee of the IEEE Symposium on Visual Analytics Science and Technology 2009. He received his PhD in computer science from Saarland University in Germany in 2005.

Patrick Gurian, PhD

Dr. Patrick Gurian is an assistant professor in the Department of Civil, Architectural and Environmental Engineering at Drexel University and the lead investigator of Project IV of the Center for Advancing Microbial Risk Assessment, which addresses the risk management and communications aspects of bioterrorism. He has worked on a variety of risk management problems in the past, including cost-benefit analysis of drinking water standards and the development of risk communication methods to inform the public about the risk of carbon monoxide intoxication. He is involved in ongoing efforts to assess appropriate interspecies and interstrain safety factors and to develop risk-informed response and monitoring guidelines for bioterrorism agents.

Sandra Hansmann, PhD

Dr. Sandra Hansmann is an assistant professor at the University of Texas Pan American (UTPA). She is a Co-Principal Investigator of the UTPA Intelligence Community Center of Academic Excellence (IC CAE), where she teaches an interdisciplinary research course focusing on open source research and applied analytical techniques. Her professional research agenda includes work

related to the use of academic research techniques in the intelligence community, and in health sciences-human services as an aspect of homeland security. Recent research has included modeling disaster preparation and response. She holds a MEd and PhD in Special Education/Rehabilitation Counselor Education from the University of Texas at Austin and a Graduate Certificate in Applied Intelligence from Mercyhurst College.

Emma Hartnett, PhD

Dr. Emma Hartnett is the lead of Microbial & Animal Health Risk Assessment at Risk Sciences International and is an internationally recognized expert in microbial risk assessment. Dr. Hartnett has extensive experience working in public and animal health risk analysis and modeling. She is frequently invited to provide expertise to the World Health Organization (WHO) and Food and Agricultural Organization (FAO). Dr. Hartnett also provides training in risk analysis and quantitative risk assessment to international organizations on behalf of the World Health Organization Eastern Mediterranean Office. She is an active member of the Society for Risk Analysis (SRA) and currently serves as past-chair of the Biological Stressors Specialty Group. She is currently an invited member of the ILSI-Europe panel examining the control of animal-borne viruses of relevance to the food industry. Dr. Hartnett has a PhD in statistics and modeling science and a BS in microbiology.

Mark Haselkorn, PhD

Dr. Mark Haselkorn is the founding chair of the Department of Technical Communication in the College of Engineering at the University of Washington and directs the Pacific Rim Visualization and Analytics Center (PARVAC). He is also the CCI lead on the National Center for Border Security and Immigration (NCBSI), founder and director of the UW's Interdisciplinary Program in Humanitarian Relief, and is currently the president of the IEEE Professional Communication Society. Dr. Haselkorn led an NSF initiative on the emerging frontier of humanitarian service science and engineering. He has worked with the military on a number of projects and has conducted foundational research in the area of intelligent transportation systems.

Syed Hashsham, PhD

Currently Dr. Syed Hashsham is the Edwin Willits Associate Professor of Environmental Engineering at Michigan State University. Dr. Hashsham has more than 15 years of experience in development of applications related to molecular biology, environmental sample analysis, and environmental genomics and has published more than 30 papers in this area. He has served as the lead investigator on five separate grants related to DNA biochip development for identification of bacteria, protozoa, and viruses in environmental samples. He is well versed with the current technologies, emerging directions, gaps, and challenges related to environmental genomics, microbial ecology, and point-of-care microbial diagnostics. Dr. Hashsham received his PhD degree from the University of Illinois at Urbana-Champaign and post-doctoral associate experience from Michigan State and Stanford University.

James Hendrickson

Mr. James Carl Hendrickson is a 4th-year doctoral student in the Department of Criminology and Criminal Justice at the University of Maryland at College Park. He has been primarily involved with studies of terrorism, including offender weapon choice, and examinations of the social and peer networks conditioning individual violence. Prior to coming to the University of Maryland, Mr. Hendrickson was a research analyst for the National Opinion Research Center in Washington, D.C., where his work primarily focused on analysis of substance abuse trends.

Colonel John T. Hoffman

Col. John T. Hoffman is a senior research fellow with the National Center for Food Protection and Defense at the University of Minnesota, as well as an advisor and project co-investigator for the National Center for Foreign Animal and Zoonotic Diseases at Texas A&M University, both of which are DHS Centers of Excellence. He is a visiting scholar with the U.S. Department of Homeland Security, serving as the principal investigator for bio-surveillance and as senior advisor to the assistant secretary of health affairs. Colonel Hoffman is focusing on the development of the National Bio-Surveillance Integration System (NBIS). He is also a co-investigator for the import safety vulnerability project that is studying the implications of and potential solutions for the recent national imported food risks. Colonel Hoffman spent the majority of his 31-year military career as a military police officer and intelligence officer working in the antiterrorism, weapons of mass destruction, and force protection areas. During his military career,

he worked in the international terrorism field, as well as in the area of domestic terrorism and security issues.

Keith Holtermann, DrPH

Dr. Keith Holtermann has been in the emergency health services field for over 35 years. He is currently working with the U.S. Department of Homeland Security, Federal Emergency Management Agency, National Preparedness Directorate, National Integration Center as the director of the National Exercise and Simulation Center. Dr. Holtermann is the associate dean for Health Sciences at the George Washington University, School of Medicine and Health Sciences. His past positions over the last 11 years at GW include principal investigator at the Response to Emergencies and Disasters Institute; assistant dean; chief of 9-1-1 Research and Policy Analysis at the Ronald Reagan Institute for Emergency Medicine; and director of the Emergency Health Services Program. His formal degrees include a BS in nursing from New York University, an MBA from National University, an MPH from San Diego State University, and a Doctor of Public Health (DrPH) from Johns Hopkins University with a concentration in health policy.

Tao Hong

Mr. Tao Hong is a doctoral student in the Department of Civil, Architectural and Environmental Engineering at Drexel University. Since 2007, he has worked as a research assistant under the guidance of Dr. Patrick Gurian. His work includes applying microbial risk assessment techniques to managing the threats presented by bioterrorism agents, including identifying the sampling required to inform risk-based responses to *B. anthracis* contamination, as well as modeling the fate and transport of *B. anthracis* in a room. Mr. Hong completed his bachelor's degree at Tongji University, where he was trained in the design of wastewater and water supply systems as well as in some basic molecular biology operations.

Yin Huang

Mr. Yin Huang is currently a doctoral candidate at Drexel University in the Department of Civil, Architectural and Environmental Engineering. His research is in dose response and focuses on time-dependent dose-response modeling.

Raphael Isokpehi, PhD

Dr. Raphael D. Isokpehi is an assistant professor in the Department of Biology and Director of the Center for Bioinformatics and Computational Biology, College of Science, Engineering & Technology, Jackson State University (JSU). Dr. Isokpehi is a member of the leadership team at Jackson State University that directs the Department of Homeland Security funded student career development program that focuses on bioinformatics and biodefense. Dr. Isokpehi's research interests are in biological data mining and integration; gene expression data analysis, text mining and pathogen bioinformatics. He is a pilot research project investigator at JSU's Research Centers in Minority Institutions (RCMI) Center for Environmental Health. In February 2008, Dr. Isokpehi was elected to Board of Directors of the MidSouth Computational Biology and Bioinformatics Society (MCBIOS).

Robert M Jacksta

Mr. Robert M. Jacksta was appointed deputy assistant commissioner of the Office of Field Operations (OFO) in September 2007. In this capacity, he is responsible for supervising border security, trade compliance, anti-smuggling, and passenger operations, as well as overseeing the programs and operations of 20 major field offices and 326 ports of entry. These ports staff 24,000 employees and have an operating budget of $2.5 billion. Mr. Jacksta is the recipient of the Presidential Rank Award for Meritorious Executive, Commissioner's "Customer Service Award," and the Commissioner's "Outstanding Performance Award." Mr. Jacksta received a BS from Buffalo State College in New York.

Richard John, PhD

Dr. Richard John is associate professor of psychology and a research team leader at the Center for Risk and Economic Analysis of Terrorism Events (CREATE) at the University of Southern California. His research focuses on normative and descriptive models of human judgment and decision-making and methodological issues in application of decision and risk analysis. Dr. John has over 40 refereed publications, including papers in top journals published by The Institute for Operations Research and Management Science,

the Society for Risk Analysis, and the American Psychological Association, as well as other top journals related to judgment and decision-making. Dr. John received his PhD in quantitative psychology from the University of Southern California, an MS in applied mathematics from the University of Southern California, and a BS in applied mathematics from the Georgia Institute of Technology.

Alexandra Jordan

Ms. Alexandra Jordan is a research assistant at the Natural Hazards Center and a PhD student in sociology at the University of Colorado. She earned her bachelor's degree in political science, with an emphasis on terrorism and genocide, at the University of Southern California. Before coming to the University of Colorado, Ms. Jordan worked for the U.S. Senate Sergeant at Arms Office of Security and Emergency Preparedness as a government contractor.

Curt Kastner, PhD

Dr. Curtis L. Kastner is the director of the Food Science Institute at Kansas State University. Dr. Kastner's major research is in food safety and security and postmortem handling, processing, and evaluation of meat and meat products. His food safety research includes identifying microbiological characteristics of further processed beef products; microbial sampling and evaluation techniques for carcasses and products; and evaluation of techniques designed to reduce microbial and chemical hazards on carcasses and products. He is involved in teaching and helping to structure curricula for distance education in food safety, security, and defense. Dr. Kastner holds BS, MS, and PhD degrees from Oklahoma State University.

Justin Kastner, PhD

Dr. Justin Kastner the Assistant Professor of Food Safety and Security at Kansas State University. He conducts scholarly activities related to trade policy, economic history and the history of science, international political economy, and multidisciplinary research and writing. Along with Dr. Jason Ackleson, he coordintates Frontier—an interdisciplinary program for the historical studies of border security, food security, and trade policy. Kastner publishes and lectures on the World Trade Organization (WTO), the WTO Agreement on the Application of Sanitary and Phytosanitary Measures, veterinary history, the history of public health, North American border issues, and the history of trade disputes regarding food safety and animal disease, focusing on both historical and contemporary trade-policy. He is co-instructor for the graduate courses Multidisciplinary Thought and Presentation, and Trade and Agricultural Health. Dr. Kastner holds a PhD from the University of Guelph, a Postgraduate Diploma in Public Health from the University of Edinburgh and a MSc from the London South Bank University.

Mila Kennett-Reston

Currently, Ms. Mila Kennett-Reston is a senior program manager in the Infrastructure/Geophysical Division (IGD) of the DHS Science & Technology Directorate. She manages several projects of the DHS S&T Counter-IED Research Program and is responsible for all IGD international programs and activities. She is also in charge of a number of workshops to position the vision and goals for the division to support resilience infrastructure and the infrastructure of the future with underlying principles of national continuity, energy, environmental sustainability, and resiliency. Ms. Kennett-Reston's main focuses are natural disaster mitigation; building security; risk assessments; planning and implementation of development programs; and management of pilot programs with national and local governments and nongovernmental organizations. She has more than 15 years of experience on projects in Latin America, Asia, the Middle East, Europe, and the United States. She received a degree in architecture and urban design from the Universidad Autonóma de Santo Domingo and an MA in international development with a major in urban economics from American University in Washington, D.C.

Thomas Kirsch, MD, MPH

Dr. Thomas Kirsch is an experienced educator and has lectured nationally and internationally on a variety of health issues. He currently teaches the health-related courses at the Bloomberg School of Public Health and is the director of the Johns Hopkins Wilderness Medicine Course. He has authored 27 scientific articles, dozens of abstracts, and four textbook chapters. He is also the second editor of an international health textbook. He serves on the editorial board for the American Medical Association's journal, Disaster Medicine and Public Health Preparedness, and is a reviewer for the Annals of Emergency Medicine and was the editor of the international section of the Annals of Emergency Medicine from 1995 to 2000. Dr. Kirsch has served as the national physician advisor for the American Red Cross Disaster Health Services and has consulted on disaster-related issues for the World Health

Organization, Unicef, the Centers for Disease Control, the United States Agency for International Development, and the Medical Reserve Corps.

Don Kleinmuntz, PhD

Dr. Don N. Kleinmuntz is cofounder and executive vice president of Strata Decision Technology LLC, a leading provider of financial planning and budgeting software to the U.S. healthcare industry. Dr. Kleinmuntz is also a research professor at the University of Southern California, affiliated with the Center for Risk and Economic Analysis of Terrorism Events, with joint appointments in the School of Policy, Planning, & Development and in the Department of Industrial & Systems Engineering. Dr. Kleinmuntz's professional interests focus on using analytics to improve decision-making by individuals and organizations, and he has consulted with corporations, public accounting firms, government, and not-for-profit organizations. Dr. Kleinmuntz currently serves as president of the Institute for Operations Research and the Management Sciences (INFORMS). He is an INFORMS Fellow and was founding editor-in-chief of the journal Decision Analysis. He holds a BA in statistics, an MBA, and a PhD with specialization in decision theory and statistics, all from the University of Chicago.

Christopher Kozub

Mr. Christopher Kozub is the associate director of the National Transit Institute's Workplace Safety and Security programs. He oversees strategic planning and the creative development and tactical delivery of 300 safety and security training courses each year, reaching 10,000 front-line employees in more than 100 of the nation's transit systems annually. He led a national security awareness training initiative for front-line transit employees after September 11, 2001. In 2005, Mr. Kozub testified before Congress regarding the vulnerability and readiness of the nation's public transportation workforce. Mr. Kozub is certified in a number of key areas of fire safety, health, and law enforcement. He holds certifications from the state of New Jersey as Fire Service Instructor Level II, IMS 100, 200, and 300 Level Instructor, and Hazardous Materials Technician Instructor.

Colonel Merrick E. Krause

Col. Merrick E. Krause, USAF, Retired, is the director of the Infrastructure Analysis and Strategy Branch, Office of Infrastructure Protection, National Protection and Programs Directorate, U.S. Department of Homeland Security. As division director, Colonel Krause leads three distinct analytical components and roughly 180 employees at the National Infrastructure Simulation and Analysis Center (NISAC), Homeland Infrastructure Threat and Risk Analysis Center (HITRAC), and the Research and Development Analysis Branch. His portfolio includes critical infrastructure protection analysis, including threat, vulnerabilities, and consequences, as well as creating mitigation strategies and informing policy development and execution. Colonel Krause earned master's degrees and was a distinguished graduate at the National War College, School of Advanced Airpower Studies, and Embry-Riddle Aeronautical University. He was initial operational F-15E Strike Eagle cadre and among the first graduates of the elite USAF Fighter Weapons School. Colonel Krause graduated from the United States Air Force Academy with honors.

Beth Lautner, DVM

Dr. Beth Lautner was named the director of USDA's National Veterinary Services Laboratories (NVSL) in Ames, Iowa, in May 2006. In that position, she is responsible for the operations and programs of NVSL, which is the only federal facility engaged in the diagnosis of both domestic and foreign animal diseases. NVSL has facilities in Ames, Iowa, and Plum Island, New York, and serves as the national reference laboratory for the National Animal Health Laboratory Network and as an international reference laboratory for the World Organization for Animal Health. Dr. Lautner is a member of the American Veterinary Medical Association (AVMA), the Iowa Veterinary Medical Association (IVMA), and the American Association of Swine Veterinarians (AASV). She has received a number of awards in recognition of her contributions to the advancement of animal health. Dr. Lautner holds BS and DVM degrees from Michigan State University. She also has an MS degree from the University of Minnesota.

Robert A. Lieberman, PhD

Dr. Robert A. Lieberman, president of Intelligent Optical Systems, has been the principal investigator on more than 35 federally funded projects aimed at developing optical devices, sensors, and systems for applications ranging from bio-warfare agent detection and medical diagnosis to industrial process control and structural health monitoring. Over 50 publications bear his name and he holds

29 U.S. patents. Dr. Lieberman has chaired more than 25 national and international sensor conferences and symposia, has served on numerous other fiber optic sensor and biosensor conference committees, and has presented more than 40 invited talks around the world on optical biological and chemical sensors. He is chairman of ASTM Standards Subcommittee E13.09 on Fiber Optics in Molecular Spectroscopy. Dr. Lieberman is a fellow of SPIE, a senior member of IEEE, and has served on numerous boards. He is the 2008 winner of the SPIE President's Award and has won three NASA Tech Briefs awards, three Bell Labs Exceptional Contribution Awards, and one NASA patent award. Dr. Lieberman received his BS and MS degrees in physics at Rensselaer Polytechnic Institute and a PhD in physics, with an emphasis on solid-state physics and biophysics, from the University of Michigan.

Rich Linton, PhD

Dr. Richard Linton's current appointment at Purdue University is divided into research, teaching, outreach, international programs, and agricultural administration. His research interests include the study of growth and inactivation of foodborne pathogens in different food systems. His area of expertise is development and implementation of Hazard Analysis Critical Control Point food safety programs. Dr. Linton teaches four undergraduate-level courses and one graduate-level course. Additionally, he serves as a guest lecturer for ten to fifteen classes each semester. He currently interacts with approximately 300 students each year and advises three graduate students. In 1998, 2002, and 2006, Dr. Linton was named Department of Food Science Teacher of the Year. Dr. Linton received a BS in biology, an MS in food science, and a PhD in food science, all at Virginia Polytechnic Institute and State University.

Robert S. Littlefield, PhD

Dr. Robert S. Littlefield is a professor of communication at North Dakota State University, Fargo, ND. He directs the Risk and Crisis Communication Project at NDSU, collaborating with the NCFPD, the Great Plains Institute of Food Safety, and the Center for Disaster and Emergency Management at NDSU. He specializes in intercultural communication as it applies to risk and crisis contexts. His research focuses on alternative perspectives of risk and crisis situations, particularly developing a culture-centered approach bringing diverse publics into contexts where risk and crisis messages are developed and presented to broader constituencies. He recently co-authored a book with Timothy Sellnow, Robert Ulmer, and Matthew Seeger titled "Effective Risk Communication: A Message-Centered Approach."

Rick Luettich, ScD

Dr. Rick Luettich is a professor of marine sciences and environmental sciences and engineering at the University of North Carolina at Chapel Hill and serves as the director of UNC's Institute of Marine Science. He recently cofounded the Center for Natural Hazards and Disasters to help enhance multi-hazard research programs at UNC. His research encompasses modeling and observational studies of physical processes in coastal systems and has included moored and shipboard sampling to characterize physical processes in coastal systems. His work has often been oriented toward understanding the role of physical processes in areas of water quality and fisheries recruitment. He is one of the two principal developers of the ADCIRC coastal circulation and storm surge model. Dr. Luettich is serving on two National Academy/National Research Council review committees. He has actively contributed to the national Integrated Coastal Ocean Observing Systems (IOOS) programs and is presently collaborating on several real-time observing systems in coastal North Carolina. Dr. Luettich received his bachelor's and master's degrees in civil engineering from Georgia Tech and his Doctor of Science degree in civil engineering from MIT.

Alan MacEachren, PhD

Dr. Alan M. MacEachren is a professor of geography, affiliate professor of information sciences and technology, and director of the GeoVISTA Center at the Pennsylvania State University. Dr. MacEachren's research foci include visual analytics, geo-visualization, geo-collaboration, interfaces to geospatial information technologies, spatial cognition, human-centered systems, and user-centered design. He applies basic research in these domains to applications challenges in public health, hazards/crisis management, intelligence analysis, environmental science, and other fields. He has authored more than 100 publications and is co-editor of additional journal special issues and was named honorary ICA fellow in 2005. He has directed the DHS-funded North East Visualization and Analytics Center (NEVAC) since January, 2006. Dr. MacEachren obtained his PhD in geography at the University of Kansas.

Ross Maciejewski

Ross Maciejewski is a PhD student in electrical and computer engineering at Purdue University and part of the Purdue University Regional Visualization and Analytics Center. His research interests includesyndromic surveillance, visual analytics, non-photorealistic rendering, and haptics. Maciejewski has an MS in electrical and computer engineering from Purdue University and BS degrees from the University of Missouri, Columbia.

Carol Mansfield, PhD

Dr. Carol Mansfield specializes in the empirical analysis of individual decision-making for management and policy applications related to the environment and health. Her research has investigated air- and water-quality protection, disease treatment and prevention programs, children's health, recreation experiences, and terrorism risk. Dr. Mansfield's research and project experience includes theoretical and methodological contributions to regulatory impact analysis and policy analysis. She has extensive experience with preference elicitation methods, including the design and implementation of surveys and activity diaries, as well as statistical analysis of the responses. Dr. Mansfield is a member of the American Economic Association and the Association of Environmental and Natural Resource Economists. Previously, Dr. Mansfield was an assistant professor of economics at Duke University's Nicholas School of Earth and the Environment where she taught graduate-level courses in environmental economics.

William Marinelli, PhD

Dr. William Marinelli is the executive vice president of defense systems for Physical Sciences Inc. and oversees a diverse range of activities in the areas of remote CBRNE sensing; advanced structural composite, nanoscale, and energetic materials development; image and sonar signal processing; and national missile defense activities as well as advanced battery development and energy-related activities. He has made numerous contributions in the fields of chemical kinetics, gas-surface interactions, space physics, and advanced diagnostics. Dr. Marinelli holds an ScB with honors in chemistry from Brown University and MS and PhD degrees in physical chemistry from the University of California, Berkeley.

Michael Matthews

Mr. Michael Matthews is a member of the Science & Technology (S&T) Directorate and works as a program analyst in the Infrastructure and Geophysical Division where he manages two programs: the Kentucky Critical Infrastructure Protection Program and the South East Region Research Initiative. These programs focus on preparedness, response, and recovery as well as critical infrastructure protection. Prior to his role in Homeland Security, he operated in several leadership positions in the National Weather Service as a chief meteorologist at two National Weather Service (NWS) offices. He had previously served as the weather service's national program manager for all public products and services and is credited for modernizing the highly visible suite of national public products and services. Before coming to S&T, Mr. Matthews worked directly for the NOAA under secretary for two years as the executive director of the under secretary's Decision Coordination and Program Coordination Office, where he managed and directed day-to-day front office operations in a fast-paced and politically charged environment. Mr. Matthews holds degrees in meteorology and business administration, and a master's degree in public administration.

Bruce McCarl, PhD

Dr. Bruce McCarl is a Regents Professor of agricultural economics at Texas A&M University and a distinguished fellow of the American Agricultural Economics Association. He has been on the Texas A&M faculty since 1985 and has authored more than 190 journal articles and more than 100 other professional publications. Dr. McCarl is currently working on the economics of strategies directed toward bio-security event prevention, detection, response and recovery and is the lead economist in the National Center for Foreign and Zoonotic Disease Defense. He has been associate editor of Climatic Change since 2001. Dr. McCarl was a participant in the IPCC Fourth Assessment Report and was named by the IPCC as a participant in the 2007 IPCC Nobel Peace Prize. He holds a BS in business statistics from the University of Colorado and a PhD in management science from Pennsylvania State University.

Rich Moro

Raytheon IDS Program Manager Rich Moro currently leads the C-IEDD efforts within the homeland security focus area of Raytheon Integrated Defense Systems, Advanced Technology Directorate. Mr. Moro joined Raytheon from Diamond Antenna, where he led the Roll-Ring Products business unit through a turnaround by stabilizing the core technology, forging new strategic alliances, and winning several SBIR and commercial contracts. Mr. Moro brings approximately 20 years of experience in program management, new product development and new business start-ups. He holds a BS in aerospace engineering and an MS in mechanical engineering from Boston University as well as an MS in engineering project management from Tufts University. He was a recipient of a Charles Stark Draper Laboratory fellowship during his graduate work at Boston University.

Stephen Morse, PhD

Dr. Stephen A. Morse serves as the associate director for Environmental Microbiology at the National Center for Preparedness, Detection, and Control of Infectious Diseases, CDC. He also has an appointment to the Senior Biomedical Research Service of the U.S. Public Health Service. He is currently an adjunct professor at Emory University School of Medicine, a member of the board of governors of the American Academy of Microbiology, and serves on several scientific advisory boards as well as the FBI Scientific Working Group for the Forensic Analysis of Chemical, Biological, Radiological, and Nuclear Terrorism (SWGCBRN). Dr. Morse has published over 280 articles, books and chapters and has received numerous awards and other forms of recognition for his achievements. Dr. Morse holds a BA in microbiology from San Jose State University, an MSPH in environmental chemistry and a PhD in microbiology from the University of North Carolina at Chapel Hill.

Nitin Natarajan

Mr. Nitin Natarajan is the program manager for Critical Infrastructure Protection (CIP) in the Office of the Assistant Secretary for Preparedness and Response, Department of Health and Human Services. In this role, he is responsible for implementing and managing all activities related to the healthcare and public health sector as defined under the National Infrastructure Protection Plan. He also manages a number of other critical projects including the department's participation in the Metropolitan Washington Fusion Center, the development of a new public health laboratory annex with biosafety level III capabilities, and the department's CBRNE planning. He serves as a liaison to a number of district, regional, and national committees in addition to working closely with both the Association of State and Territorial Health Officials and the National Association of City and County Health Officials.

Abbey Nutsch, PhD

Dr. Abbey Nutsch is an assistant professor of food safety and security with the Food Science Institute at Kansas State University (KSU). After spending five years as the director of technical services for a commercial food testing and research laboratory, Dr. Nutsch returned to KSU in 2002 to serve as a project coordinator within the Food Science Institute and since 2004 has served as an assistant professor of food safety and security. Dr. Nutsch has led efforts to develop graduate course offerings that address multidisciplinary aspects of food safety and security. She also co-instructs an on-campus graduate course that emphasizes critical thinking and writing skills relevant to students from various departments and academic disciplines. Dr. Nutsch holds BS and PhD degrees in food science from Kansas State University.

Anne Ohlrich

Anne Ohlrich is a professor in Political Science at St. Mary's University, San Antonio, on the Graduate International Relations Faculty, and is affiliated with the Center for Terrorism Law. She served overseas as a Foreign Service Office with the U.S. Department of State in South and Central America, Europe, and Mexico. Her academic and practical experience is in international relations and international law with a focus in immigration, social and economic development, research and analysis, counter narcotics and law enforcement affairs. Her research is in international law, national security, and diplomacy. She leads St. Mary's collaboration with UTPA's IC CAE, where she is working on joint graduate curricula for active duty intelligence and other national security professionals. Ohlrich holds a JD from St. Mary's University.

Mike Orosz, PhD

Dr. Mike Orosz is a principal investigator from the Foreign Animal and Zoonotic Diseases (FAZD) Center. His interests are human-computer interfaces in mission-critical environments, "system of systems" frameworks, distributed systems, and real-time data acquisition systems. Dr. Orosz is also interested in the development and fielding of prototype systems that address operational risk management, integrated modeling environments, command and control, decision support, and flight scheduling and execution. Dr. Orosz holds a PhD in computer science from the University of California in Los Angeles, an MS in computer science from the University of Colorado, and a BS in engineering from the Colorado School of Mines.

Margery Overton, PhD

Dr. Margery Overton is a professor in the Department of Civil, Construction, and Environmental Engineering at North Carolina State University and directs a number of research projects in coastal engineering. Her research expertise is in the mechanics of dune erosion, coastal erosion processes, and geospatial modeling of coastal environments. She has 20 years of professional experience in mapping and modeling the North Carolina coastline and has worked extensively with NC state agencies, e.g., NC Department of Transportation, Division of Coastal Management and Department of Emergency Management, on projects involving coastal hazard identification and mapping and communication. She is currently chair of the NC Science Panel on Coastal Hazards, which advises the NC Coastal Resources Commission. She received BS, MS, and PhD degrees in civil engineering from Duke University.

Todd Owen

Since May 2006, Mr. Todd Owen has been the executive director for Cargo and Conveyance Security (CCS), Office of Field Operations, U.S. Customs and Border Protection (CBP). He is directly responsible for all cargo security programs and policies for CBP. A variety of programs and efforts fall under the purview of the Cargo and Conveyance Security office, including the Container Security Initiative (CSI); the Secure Freight Initiative (SFI); radiation detection equipment and large-scale imaging equipment, policies, and programs; the Customs-Trade Partnership Against Terrorism program (C-TPAT); the national Canine Enforcement Program; cargo enforcement efforts and policies, coordinated activities with the U.S. Coast Guard and the Transportation Security Administration; the Cargo Control Office, trade security policies and programs including in-bond, manifest, and carrier compliance programs; and the National Targeting Center for Cargo (NTC-C), located in northern Virginia.

John Pearson, PhD

Dr. John Pearson leads the Government Research Program initiatives at Siemens Corporate Research that seek to leverage commercial innovations for government interests. Examples include video analytics for pedestrian-borne improvised explosive devices and critical infrastructure protection; cyber-security for the power grid; sensor fusion and data-mining for condition-based bridge maintenance; and open-architecture software platforms for multi-vendor interoperable imaging systems, both medical and baggage screening. He received a PhD in physics from the University of California for research that applied mathematical models of cooperative phenomena to neocortical sensory function. Dr. Pearson continued his education at Rockefeller University and at Sarnoff Corporation, where more applied topics and management responsibilities began.

Peter Pesenti, PhD

Dr. Peter T. Pesenti is currently the chief of the Threat Characterization and Attribution Branch within the DHS Chemical-Biological Division, Directorate of Science and Technology. He has been with the department since its establishment in March 2003. At DHS S&T, he has held a variety of positions in the Biological Countermeasures Portfolio, most notably serving as technical resource manager for the strategic planning of the multi-year Chemical-Biological research portfolio requirements, the president's budget formulation and Congressional interface. In Dr. Pesenti's current position, he is responsible for the technical oversight and management of research programs conducted at the National Biodefense Analysis and Countermeasures Center (NBACC) and all chemical-biological risk assessments. Dr. Pesenti is a retired Air Force lieutenant colonel with over 25 years of experience as a senior program manger focused on large-scale systems acquisitions including research and development of technical/scientific programs within the Department of Defense. Dr. Pesenti holds a PhD in environmental microbiology from George Mason University, an MBA in health systems from Golden Gate University, an MS in systems management from the Air Force Institute of Technology, and a BA in biology from St. Michael's College, Vermont.

Clarence J. Peters, MD

Dr. Clarence Peters is the John Sealy Distinguished University Chair in Tropical and Emerging Virology and the director for biodefense at the University of Texas Medical Branch (Galveston) Center for Biodefense and Emerging Infectious Diseases. His current research interests focus on Rift Valley fever vaccines and SARS pathogenesis. Prior to the opportunity in Galveston, Dr. Peters worked in the field of infectious diseases for three decades with NIH, CDC, and the U.S. Army. He has been chief of the Special Pathogens Branch at the Centers for Disease Control in Atlanta, Georgia, as well as the chief of the Disease Assessment Division and deputy commander at USAMRIID. He has worked on many of the epidemics of emerging zoonotic virus diseases that have troubled the world in recent years, including Bolivian hemorrhagic fever, Rift Valley fever, hantavirus pulmonary syndrome, Ebola virus, and Nipah virus. He received his MD from Johns Hopkins University and has more than 300 publications in the areas of epidemiology, virology, and viral immunology.

William Pike, PhD

Dr. Bill Pike is a research scientist at Pacific Northwest National Laboratory (PNNL), where he leads research in information visualization, visual analytics, knowledge management, and analytic reasoning for homeland security, intelligence, and cyber security applications. Dr. Pike serves as the research coordinator for the DHS National Visualization and Analytics Center. In that capacity, he helps define research strategies and technology transition opportunities for a portfolio of visual analytics projects at PNNL. Dr. Pike's research focuses on human-computer interaction with emphasis on the development of computational aids to hypothesis construction, modeling analytic reasoning processes in collaborative environments, and creating analytic algorithms for data-intensive computing applications. He has developed knowledge-capture systems for scientific cyber-infrastructure efforts, and his group-decision support tools have been used by teams in emergency medicine, technology forecasting, and environmental impact assessment. Dr. Pike holds a PhD in geography from Penn State.

Richard A. Posthuma, PhD, JD

Dr. Richard Posthuma is on the faculty of the College of Business at the University of Texas at El Paso, and he is the editor of the International Journal of Conflict Management. He is certified as an associate in risk management (ARM), senior professional in human resources (SPHR), global professional in human resources (GPHR), and is admitted to practice law in Michigan and the District of Columbia. He has more than 15 years of professional work experience in human resource management, risk management, and law. He has published numerous articles in leading journals. Dr. Posthuma earned his master's degree in labor and industrial relations from Michigan State University in 1977, his JD (cum laude) from the Thomas M. Cooley Law School in 1992, and his PhD in organizational behavior and human resource management from Purdue University in 1999.

William M. Pottenger, PhD

Dr. William Pottenger is an associate research professor of computer science at Rutgers University and CEO of Intuidex, Inc., a high-tech start-up company developing peer-to-peer information indexing solutions. Dr. Pottenger's research and development interests include the fields of machine learning as applied in text/data analytics and parallel and distributed computing, in which he has nearly 20 years of experience. Application domains for the technology he has developed include social networking, law enforcement, and counter-terrorism. Dr. Pottenger has more than 40 peer-reviewed publications, has served as editor and chair of several proceedings/symposia, and has made over 50 professional presentations/seminars. He is a member of ACM, IEEE and SIAM and has served as a program committee member/referee for numerous professional venues, journals, etc. Among other awards he is the recipient of the PC Rossin Endowed Assistant Professorship (2001–2003) and a United States Air Force Certificate of Appreciation (2001). Dr. Pottenger completed his PhD in computer science at the University of Illinois at Urbana-Champaign.

Richard Radke, PhD

Dr. Richard J. Radke joined the faculty of the Department of Electrical, Computer, and Systems Engineering at Rensselaer Polytechnic Institute in 2001, where he is now an associate professor. His current research interests include the distribution of computer vision problems on large camera networks, modeling 3-D environments, deformable registration and segmentation of three- and four- dimensional biomedical volumes, and machine learning for radiotherapy applications. Dr. Radke received a National Science Foundation CAREER Award in 2003. He is a member of the 2007 DARPA Computer Science Study Group. He received a dual BA

degree in mathematics and computational and applied mathematics and an MA in computational and applied mathematics from Rice University in 1996, and MA and PhD degrees in electrical engineering from Princeton University in 1998 and 2001, respectively.

Padmini Ramachandran

Ms. Padmini Ramachandran has extensive experience in the fields of biotechnology and microbiology. She has worked as a lecturer in India teaching biotechnology, biophysics, and enzyme technology to graduate students. Ms. Ramachandran was awarded the most prestigious scholarship award of India's Council of Scientific Industrial Research for her work on the secondary structure of the neurotoxin isolated from Russell's viper (common snake) venom, which causes 83% of the snake-bite deaths in India. She has also worked closely with a social organization named "Literacy for Everyone," helping to educate the low-income group in southern district villages in India.

Stig Regli

Mr. Stig Regli is a senior leader and policy advisor for EPA's Office of Ground Water and Drinking Water. Mr. Regli has been with EPA since 1979 and has been involved with developing national drinking water regulations for public water systems. His has worked primarily as a regulation manager and science advisor for control of pathogens, disinfection byproducts, and emerging contaminants. He is also involved with identifying research needs to support program development and with developing measures for program effectiveness in reducing waterborne disease on a national level. He has a BS in mechanical engineering and an MS in civil engineering from Duke University.

Van Reihead, PhD

Dr. Van Reihead is Dean of the College of Social and Behavioral Sciences at the University of Texas-Pan American and Primary Investigator of the Intelligence Community Center of Academic Excellence. An anthropologist, his published research includes operations science (linear programming) models of prehistoric change, studies of stability and change in the West's oldest continuous institutions, monastic societies, spiritual integration measurement, and K-16 bioanthropological experiential learning. In recent years he has focused on advanced interdisciplinary, global, and communication intensive/extensive approaches to education to develop team problem-solving skills for national security. He oversees the UTPA Affiliate of the National Center for Border Security and Immigration, in partnership with a consortium of universities led by the University of Arizona. Dr. Reihead received his PhD from Indiana University.

William Ribarsky, PhD

Dr. William Ribarsky is the Bank of America Endowed Chair in Information Technology at UNC Charlotte and the founding director of the Charlotte Visualization Center. He is the principal investigator for the DHS South East Regional Visualization and Analytics Center. His research interests include visual analytics; 3D multimodal interaction; bioinformatics visualization; virtual environments; visual reasoning; and interactive visualization of large-scale information spaces. Dr. Ribarsky has published over 120 scholarly papers, book chapters, and books and is also a member of the steering committees for the IEEE Visualization Conference and the IEEE Virtual Reality Conference, the leading international conferences in their fields. He received a PhD in physics from the University of Cincinnati.

James Rice, Jr.

Mr. Jim Rice is the deputy director of the MIT Center for Transportation and Logistics (CTL), a position he has held since 2007. As the deputy director, Mr. Rice oversees several research and outreach programs and the marketing activities. Mr. Rice also serves as the director of the Integrated Supply Chain Management Program and Supply Chain Exchange and runs CTL's executive education program. Additionally Mr. Rice teaches in the graduate degree program and CTL's executive education programs, specifically leading strategic alignment and business continuity planning workshops and simulations. Prior to joining MIT, Mr. Rice managed manufacturing and distribution operations at Procter & Gamble and served as a sales and market manager at General Electric Company. Mr. Rice earned his MBA in operations and finance from the Harvard Business School and a bachelor's degree in mechanical engineering from the University of Notre Dame.

Alan Roberson

Mr. Alan Roberson is currently the director of security and regulatory affairs at AWWA's Washington, D.C., office. He is responsible for implementing AWWA's overall regulatory program with all federal agencies. He works closely with EPA, DHS and the Water Sector Coordinating Council to establish drinking water security policies, national drinking water regulations and water sector issues. He is a licensed trainer for the Risk Assessment Methodology-Water (RAM-W) and has developed a two-day workshop on contamination monitoring technologies. Mr. Roberson has 12 years of consulting engineering experience with the design and project management for site development and water treatment projects. He has a bachelor's degree in civil engineering from Georgia Tech and a master's degree in civil engineering from Virginia Tech. He is a professional engineer in the Commonwealth of Virginia.

Bethann Rooney

Ms. Bethann Rooney currently serves as the manager of port security for the Port Authority of New York and New Jersey. Assuming this post in the aftermath of the 9/11 tragedy, Ms. Rooney has become a recognized world leader in maritime security issues. Her measures to minimize losses associated with natural or manmade disruptions have become a model for other ports. She has developed and cemented close working relationships with local stakeholders and federal, state and local law enforcement agencies to address awareness, prevention, protection, response and recovery efforts. Ms. Rooney is the chair of the Area Maritime Security Committee for the Port of New York and New Jersey and is a member of the Commercial Operators Advisory Committee (COAC) and National Maritime Security Advisory Committee (NMSAC) Transportation Workers Identification Credential (TWIC) Working Group. She founded and serves as chair of the Port Security Caucus and sits on the security committee of the American Association of Port Authorities (AAPA). Ms. Rooney is also actively involved in the legislative and regulatory processes. Ms. Rooney is a graduate of the State University of New York Maritime College with a master's degree in international transportation management and a bachelor's degree in marine transportation. She holds qualifications as a Third Mate.

George Rossetti, Jr., PhD

Professor George Rossetti, Jr. is an associate professor of materials science in the Department of Engineering at the University of Connecticut. His expertise is in structure-processing-property relations in electro-ceramic materials and their applications in dielectric, electromechanical and energy conversion devices and systems. Dr. Rossetti has worked as a research professor in the Institute of Materials Science at UC since 2006. He previously was a research associate professor at Rutgers University. His experience in industry spans more than a decade, during which he served as director of functional materials at Continuum Photonics, Inc. in Billerica, MA and a senior research engineer at Norton Company Central Research Laboratories, Saint-Gobain Corporation, Worcester, MA. He was also a senior research scientist at the NASA Center for Advanced Microgravity Materials Processing at Northeastern University, Boston. Dr. Rossetti earned his MS in materials engineering from Worcester Polytechnic Institute and his PhD in solid state science from the Pennsylvania State University. He conducted post-doctoral work at the Princeton Materials Institute.

Richard Rothman, MD, PhD

Dr. Richard Rothman is an associate professor in the Department of Emergency Medicine, with a joint appointment in the Department of Medicine, Division of Infectious Diseases at Johns Hopkins University (JHU) School of Medicine. He is Research Fellowship Director and the chair of the Research Committee in Emergency Medicine. He has served as a consultant both for the biotechnology industry in molecular assay development for infectious diseases, and for the Centers for Disease Control and Prevention for acute diagnosis of infectious diseases. Currently he is a lead on a program project for the Department of Homeland Security grant on diagnostic assay applications for disaster preparedness and response, focusing on emerging and biothreat events. Dr. Rothman also serves as PI for the Diagnostics Project of NIH Mid-Atlantic Regional Center of Excellence for Biodefense and Emerging Infectious Diseases Research (MARCE). Dr. Rothman developed his current translational research program through doctoral training at UCSF, fellowship training, and multidisciplinary collaborations both internal and external to JHU. He has received numerous awards including the Society for Academic Emergency Medicine Young Investigator Award and the Hopkins Clinical Scientist Award.

Marc Sageman, MD, PhD

Dr. Marc Sageman is an independent researcher on terrorism and the founder of Sageman Consulting, LLC. He is the New York Police Department's first "scholar in residence" and an adjunct associate professor at the School for International and Public Affairs at Columbia University. He holds various academic positions at George Washington University, University of Maryland and national think tanks like the Foreign Policy Research Institute, the Center for Strategic and International Studies, and the Homeland Security Policy Institute. He is director of research at ARTIS and a consultant for RTI International. He has lectured at many local and foreign universities, including Harvard University, MIT, University of Chicago, and the University of California at Berkeley. His new book, *Leaderless Jihad*, describes how the process of radicalization in a hostile environment is enabled by the Internet and evolves into a disconnected network, the leaderless jihad. After graduating from Harvard, Dr. Sageman obtained an MD and a PhD in sociology from New York University.

Venkatesh Saligrama, PhD

Dr. Venkatesh Saligrama is a faculty member in the Electrical and Computer Engineering Department at Boston University. His research interests are in statistical signal processing, information and control theory, statistical learning and sensor networks. He recently edited a book titled *Networked Sensing Information and Control*. Dr. Saligrama is an associate editor for IEEE Transactions on Signal Processing. He is the recipient of numerous awards including the Presidential Early Career Award, ONR Young Investigator Award, and the NSF Career Award. Dr. Saligrama holds a PhD from MIT. More information about his work is available at http://iss.bu.edu/srv.

Edu Suarez-Martinez, PhD

Dr. Suarez-Martinez is an associate professor of molecular biology at the University of Puerto Rico in Ponce (UPR-P). In the summer of 2007 Dr. Suarez-Martinez conducted research focused on animal disease at the National Center for Foreign Animal and Zoonotic Disease Defense at Texas A&M University in College Station, Texas. Currently Dr. Suarez-Martinez is collaborating with various colleagues and agencies to establish an Avian Influenza Virus (AIV) surveillance system in Puerto Rico that will permit early detection of AIV pathogenic strains in pigeons and migratory ducks. The surveillance system will be aligned with the National Network for AIV infections that helps report and monitor outbreaks of the virus. Dr. Suarez-Martinez is also developing programs at UPR-P that will be aligned with DHS mission and goals. Dr. Suarez-Martinez holds a BS from Pontifical Catholic University in Ponce, PR as well as a BS and a PhD from the Ponce School of Medicine in Ponce, PR.

Brian Sauser, PhD

Dr. Brian Sauser is currently the director of the Systems Engineering Management Program and an assistant professor in the School of Systems and Enterprises at Stevens Institute of Technology. Before joining Stevens in 2005, he spent more than 12 years working in government, industry, and academia both as a researcher/engineer and director of programs. Dr. Sauser holds a BS from Texas A&M University in agricultural development with an emphasis in horticulture technology, an MS from Rutgers in bioresource engineering, and a PhD from Stevens Institute of Technology in technology management.

James Scheulen

Mr. James Scheulen is the executive director of the National Center for the Study of Preparedness and Catastrophic Event Response (PACER). He is also the chief administrative officer for the Johns Hopkins Department of Emergency Medicine; president of the Johns Hopkins Emergency Medical Services; the liaison between Johns Hopkins and the Maryland Institute for Emergency Medical Services; and an appointee to the Maryland Statewide Emergency Medical Services Advisory Committee. He is the founder and director of Medical Transportation and Referring Physician Services for Johns Hopkins. Mr. Scheulen is also responsible for the creation of the Johns Hopkins Office of Critical Event Preparedness and Response (CEPAR), an office designed to assure a coordinated response to critical events across the entire Johns Hopkins Enterprise.

Matthew W. Seeger, PhD

Dr. Matthew W. Seeger is currently a professor and chair of communication at Wayne State University. His teaching and research interests are in areas of organizational communication, crisis, risk, issue management and communication ethics. He has worked extensively with the Centers for Disease Control and Prevention on issues of pandemic influenza preparedness, including the development and refinement of the CDC's Crisis and Emergency Risk Communication model (CERC), which is now used to inform all federal public health responses to emergencies. He has also worked with the National Center for Food Protection and Defense on issues of food safety and models of food recalls.

Timothy L. Sellnow, PhD

Dr. Timothy L. Sellnow is a professor of communication at the University of Kentucky. His primary research and teaching focus is on risk and crisis communication. His recent research focuses on strategic communication for mitigating the impact of and maintaining resilience in response to potential terrorist attacks on the United States. He has co-authored four books and published many refereed journal articles focusing on strategies for effective risk and crisis communication. Dr. Sellnow currently serves as theme leader for the risk communication research team at the National Center for Food Protection. He has also served on several occasions as a risk and crisis communication consultant for the Centers for Disease Control and Prevention.

Buck Sharpton, PhD

Dr. Virgil L. (Buck) Sharpton was named vice chancellor for research at the University of Alaska Fairbanks (UAF) in May 2006. Dr. Sharpton joined the faculty at the UAF in 1998 and was awarded tenure in 2000. In 2001, he was awarded one of the six presidential professorships across the UA system and holds the title of President's Professor of Remote Sensing. In his current position as vice chancellor for research, he assists the chancellor in shaping the research agenda at UAF. He oversees the Center for Research Services, Geophysical Institute, International Arctic Research Center, Office of Electronic Miniaturization, Institute of Arctic Biology, and various research programs. Dr. Sharpton serves on the governor's sub-cabinet on climate change and the Denali Commission Energy Committee and represents the university on ARCUS, INRA, and UCAR. In 2008, Dr. Sharpton was appointed by President Bush to serve on the United States Arctic Research Commission. Dr. Sharpton obtained a PhD and ScM in geological sciences from Brown University in 1984 and 1981, respectively, and a BS with high honors in geology from Grand Valley State University in 1979.

Arun Shukla, PhD

Dr. Arun Shukla is Chairman and Simon Ostrach Professor of Mechanical Engineering and Applied Mechanics at the University of Rhode Island, where he has been a member of the faculty since 1981. Dr. Shukla's research focuses on the dynamic behavior of materials. Under the sponsorship of the National Science Foundation, Office of Naval Research, Air Force Office of Scientific Research, Army Research Office, Department of Transportation, US Navy, and US Army, he has developed an internationally recognized research laboratory and research program in experimental solid mechanics. Dr. Shukla is also the Technical Lead for the blast mitigation effort in the Center of Excellence at URI funded by the Department of Homeland Security. Along with his students, Dr. Shukla has published more than two hundred and seventy five papers in journals and proceedings. He received his BS degree from the Indian Institute of Technology-Kanpur in 1976. After working briefly at Voltas Ltd. he joined the University of Maryland in 1977, and received his MS in 1978 and Ph.D. in 1981; both degrees are in the area of experimental fracture mechanics.

Frank Sisto

Mr. Frank Sisto retired from the Coast Guard after 20 years active duty in 2001. After retiring, he worked several years for Veridian Engineering as a program manger and doing business development before taking a civil service job as the chief of the Information Management Section at the newly formed Maritime Intelligence Fusion Center, Atlantic (MIFCLANT) in Virginia Beach. Including all the activities required to establish this new Coast Guard Command, as the IT chief, Mr. Sisto helped develop new Coast Guard intelligence policies for data management within the entire directorate. He accepted a position as chief of the Data Systems and Analysis Division within CG-2. Among his many duties, he was responsible for the development and implementation of the Maritime Awareness Global Network (MAGNet) program and the management of the Ships Advanced Notification System (SANS). Mr. Sisto developed data models, standards and policies, including the management of information protected under the Privacy Act of 1974, to facilitate data sharing with Maritime Domain Awareness (MDA) partners including the U.S. Navy. In June 2008, Mr. Sisto joined

the DoD family as an HQE serving as the senior advisor of data sharing and systems for the DoD executive agent for MDA in the deputy under secretary of the Navy's office. He is presently serving as deputy director, DoD executive agent for MDA.

Allison Smith, PhD

Dr. Allison Smith is the program lead for radicalization research in the Human Factors/Behavior Sciences Division of the U.S. Department of Homeland Security's Science and Technology (DHS S&T) Directorate. In this role, she is responsible for the division's social and behavioral science research efforts aimed at uncovering indicators that actors are radicalizing and examining the efficacy of counter-radicalization strategies. She also manages the Prevent/Deter Program of the DHS S&T counter-IED effort. Before joining DHS S&T in 2007, Dr. Smith conducted research for the intelligence community and served as an American Association for the Advancement of Science (AAAS) Science & Technology Policy Fellow. She received her PhD in psychology from the University of Michigan, where she studied the relationship between group rhetoric and violent activity.

Brent Smith, PhD

Dr. Brent Smith is distinguished professor and chair of the Department of Sociology and Criminal Justice at the University of Arkansas. He also serves as director of the Terrorism Research Center in UA's Fulbright College. His research has focused primarily upon social movements and governmental response. Terrorism and the response to terrorism have been of continuing interest throughout his career. He is currently directing projects funded by the Department of Justice and the Department of Homeland Security that examine the geospatial and temporal patterns of American terrorists' preparatory behaviors, defense and prosecutorial strategies in terrorism trials, and the measurement of government intervention strategies in counterterrorism. Dr. Smith is the author of *Terrorism in America: Pipe Bombs and Pipe Dreams* (1994). Additional publications on terrorism have appeared in Criminology, Justice Quarterly, Criminology and Public Policy, the National Institute of Justice Journal, and other scholarly outlets.

Gary Snowder, PhD

Dr. Gary Snowder is the associate director of the National Center for Foreign Animal and Zoonotic Disease Defense at Texas A&M University. In this capacity, he reviews and approves project proposals and oversees the administration of the center's daily activities. He was previously a senior scientist with the USDA's Agricultural Research Service (ARS), retiring just last year after 21 years of service. His research at ARS included studies of resistance and susceptibility to livestock diseases. He has published extensively, with more than 100 scientific peer-reviewed articles. Dr. Snowder has broad international research experience with cooperative projects in Canada, Mexico, Kazakhstan, Kyrgyzstan, Australia, and New Zealand. He is a member of the American Society of Animal Science and serves as chair of the Animal Health Committee for that organization. He has been a reviewer for many livestock research journals.

Mario Sznaier, PhD

Dr. Mario Sznaier received BS degrees in electrical engineering and in computer science from the Universidad de la Republica in Uruguay and MS and PhD degrees in electrical engineering from the University of Washington. From 1991 to 1993 he was an assistant professor of electrical engineering at the University of Central Florida. In 1993 he joined the Pennsylvania State University, where he was promoted to associate professor in 1997 and to professor of electrical engineering in 2001. In July 2006, Dr. Sznaier joined the Electrical and Computer Engineering Department at Northeastern University in Boston as the Dennis Picard Trustee Professor. He has also held visiting appointments at the California Institute of Technology in 1990 and 2000 and currently holds an appointment at Penn State as adjunct professor of electrical engineering. His research interests include multiobjective robust control; dynamic vision and imaging, control-oriented identification, robust model (in) validation, and application of dynamical systems theory to physics. Dr. Sznaier is currently serving as an associate editor for the journal Automatica and as a member of the board of governors of the IEEE Control Systems Society.

Milind Tambe, PhD

Dr. Milind Tambe is a professor of computer science at the University of Southern California (USC). He leads the TEAMCORE research group at USC, with research interests in multi-agent systems, specifically multi-agent and agent-human teamwork. He is a fellow of AAAI (Association for Advancement of Artificial Intelligence) and recipient of the ACM (Association for Computing

Machinery) SIGART Agents Research award. Dr. Tambe is also a recipient of the Okawa Foundation faculty research award, the RoboCup scientific challenge award for outstanding research, and the ACM recognition of service award. He has published widely in scientific journals, books, and conference proceedings, with numerous papers selected as best papers or finalists for best papers at premier conferences and workshops. He was general co-chair of the International Joint Conference on Agents and Multiagent Systems (AAMAS) 2004 and program co-chair of the International Conference on Multiagent systems (ICMAS) 2000. Dr. Tambe received his PhD in computer science at Carnegie Mellon University.

Gael Tarleton

Ms. Gael Tarleton has recently been elected to a four-year term as Seattle Port Commissioner. She is also the manager of Partnerships and New Initiatives for the Pacific Rim Visualization and Analytics Center (PARVAC) at the University of Washington (UW), as well as a senior advisor to UW's Institute for National Security Education and Research (INSER). At UW, Ms. Tarleton has focused on connecting faculty and students across UW to tackle the most important safety and security challenges of our generation. She started her career in Washington, D.C., as a research analyst in the national intelligence community, where she developed a life-long appreciation for how to collect, analyze, and distribute data to help people solve complex problems.

Mark Teachman, DVM

Currently, Dr. Mark Teachman is the director for interagency coordination in the National Center for Animal Health Emergency Management, which resides in USDA, APHIS, Veterinary Services. In this capacity, he leads a team of liaisons that are either imbedded in another federal agency or liaise with other agencies as needed. These liaisons are focused on identifying assets (people, teams, information or other tools) that can be used to support a response to an animal health emergency and also on providing the agencies appropriate information about NCAHEM activities and animal health emergency-response requirements. Dr. Teachman is also acting director of the fledgling USDA/DHS Joint Modeling Operations Center, where he tries to implement the vision of this center and activities described in the document titled "Protecting Against High Consequence Animal Diseases: Research & Development Plan 2008–2012." Dr. Teachman graduated from Michigan State University, College of Veterinary Medicine in 1984.

Kathleen Tierney, PhD

Dr. Kathleen Tierney is a professor of sociology at the University of Colorado and director of the Natural Hazards Center. She has studied the social dimensions of many major disasters, including major earthquakes in California and Japan, floods in the Midwest, Hurricanes Hugo and Andrew, the September 11 terrorist attack on the World Trade Center, and other large-scale natural and technological disaster events. Her current research, funded by NSF, DHS, and foundation grants, includes studies on disaster preparedness and resilience among community-based organizations; the use of information technologies by members of the public in disaster response; and the structural features and activities of homeland security preparedness networks in U.S. cities. Dr. Tierney is the author of dozens of articles, book chapters, and technical reports on the social aspects of hazards, disasters, and risk and is a member of the National Academy of Sciences Committee on Disaster Research in the Social Sciences and of the Academies' Panel on Strategies and Methods for Climate-Related Decision Support.

Michael Tobia, PhD

Dr. Michael Tobia is a 26-year veteran in law enforcement and is currently assigned to the Department of Homeland Security, Science & Technology Directorate as university programs staff. Previously, Dr. Tobia was the commanding officer of the bus terminal in midtown Manhattan located on 42nd and 8th Avenue. His prior assignments with the Port Authority Police Department included the Office of Counter-Terrorism unit, specializing in risk assessment, emergency operational planning and community awareness. He was appointed the commanding officer of the Police Academy for two periods following the tragic events of September 11, 2001, and enhanced recruit training to meet the demands of the post 9/11 environment. He has extensive command field experience in a number of emergency incidents, most notably the February 26, 1993, and September 11, 2001, terrorist attacks on the World Trade Center.

Brian Tomaszewski, PhD

Brian Tomaszewski is a GIScientist whose research involves developing collaborative, web-based geovisual analytic tools to support human analytical reasoning with heterogeneous geographic information for contextualizing crisis situations. Dr. Tomaszewski has worked as a special consultant for United Nations ReliefWeb group developing geospatial applications for humanitarian information. He completed his PhD in Geography from Penn State in December 2008. While at Penn State, he was a research assistant in the GeoVISTA Center on projects related to Geocollaboration and Visual Analytcis, part of the Northeast Regional Visualization and Analytics Center. He is currently an assistant professor at the Rochester Institute of Technology.

Abdul Turay, PhD

Dr. Abdul Turay is provost and vice president for academic affairs of Tougaloo College in Mississippi. As the chief academic officer of the college, he is responsible for all units reporting directly to the Office of Academic Affairs, including academic divisions, the registrar, the library, athletics, TRIO, the Office of Sponsored Programs, the Division of Continuing Education and Professional Studies, and the Comprehensive Academic Resources Program. Dr. Turay also reviews and processes all faculty and academic administrative appointments. From 1998 to 2005, Dr. Turay was dean for research and graduate studies and professor of economics at Western Carolina University. Prior to this, he served as dean for graduate studies and research, and professor of economics, at Southern Illinois University at Edwardsville. Dr. Turay received his PhD in economics from the University of Oklahoma, an MA in economics from Atlanta University, and a BA in economics, from Morehouse College.

Baxter Vieux, PhD, PE

Dr. Baxter Vieux is a professor in the School of Civil Engineering and Environmental Science at the University of Oklahoma in Norman and holds adjunct professorships with Rice University and Wuhan University (China). He directs the Center for Natural Hazards and Disaster Research located in the National Weather Center at the University of Oklahoma. His research interests are the study of hydrology and water resources using GIS, radar rainfall, and distributed hydrologic modeling. In 2008, the University of Oklahoma awarded him with the Joseph A. Brandt Professorship. Dr Vieux has over 110 publications in hydrology and is a registered professional engineer in three states. He is also co-principal and founder of Vieux & Associates, Inc., an engineering technology company with clients in the United States and abroad. Externally sponsored research at the University is funded by the Bureau of Reclamation, Department of Homeland Security, NASA, EPA, NWS, NOAA, Army Corps of Engineers, NSF, and state/local agencies.

James A. Wall, PhD

Dr. James Wall currently serves as the director of computing and information technology for the Texas Center for Applied Technology and holds an appointment as an associate research professor in the Industrial and Systems Engineering Department at Texas A&M University. Dr. Wall is the principal investigator for several simulation programs related to incident management and emergency response. His emergency management exercise system (EMES) has been used to train more than 3500 responders from around the nation. Current work for the DHS Center of Excellence for Foreign Animal and Zoonotic Disease relates to the use of dashboard technology to provide an integrated display providing a common operational picture for animal disease emergencies and bio-surveillance. Other research activities are a digital EMS program that is focused on transmitting real-time video, physiological telemetry, and medical record data between a moving ambulance and an emergency room, and a program entitled University XXI, which is focused on research in support of the U.S. Army's transformation from analog to digital command and control systems. Dr. Wall holds an MS in systems technology (command, control, and communications) from the Naval Postgraduate School and a PhD in computer science from Texas A&M University.

Toru Watanabe, PhD

Dr. Toru Watanabe received a BS in civil engineering from Tohoku University, Japan, in 1998. He remained at Tohoku University after graduating, working as an instructor and assistant professor in the Department of Civil Engineering. He received his PhD in civil engineering in 2006 and shortly thereafter began postdoctoral studies in the Department of Civil, Architectural and Environmental Engineering at Drexel University, sponsored by the Japan Society for the Promotion of Science. Dr. Watanabe's research interests center on risk evaluation and management of infectious diseases following water-related disasters.

Mark Weir

Mr. Mark H. Weir earned his BS in environmental engineering from Wilkes University in 2004. He is currently pursuing a PhD at Drexel University under the guidance of Dr. Charles Haas. As a researcher in the Center for Advancing Microbial Risk Assessment (CAMRA), Mr. Weir is using fundamental first principles of environmental engineering to develop physical transport and pathogenesis models for potential bioterrorism agents.

Jeff Werling, PhD

Dr. Jeff Werling is the executive director of Inforum, a research unit within the Department of Economics at the University of Maryland, College Park. As the executive director, Dr. Werling is dedicated to improving business planning, government policy analysis, and the general understanding of the economic environment. He also serves as a principal investigator for special projects applying Inforum modeling systems. He has completed recent studies on the economic implications of energy policy, immigration, exchange rate fluctuations and port disruptions due to terrorist strikes. Dr. Werling is currently the secretary of the National Economists Club and a member of the National Association for Business Economics (NABE), the National Peace Corps Association, the American Economic Association, and the International Input-Output Association. Previously, he held positions as an international and industry economist with the National Electrical Manufacturers Association (NEMA), the Manufacturers Alliance (MAPI), and the WEFA Group (now Global Insight). Dr. Werling received a BS in mineral economics at the Pennsylvania State University in 1981 and an MA and PhD in economics from the University of Maryland in 1989 and 1992, respectively.

Robert Whalin, PhD

Dr. Robert Whalin is currently associate dean of the College of Science, Engineering and Technology at Jackson State University and a professor of civil engineering. He is a well-known coastal engineer and is co-PI for the Department of Homeland Security's Center of Excellence for Natural Disasters, Coastal Infrastructure and Emergency Management. Dr. Whalin has had a distinguished career including 6 years in private industry, 36 years of government service, and 6 years in academia. He has held positions as director of the U.S. Army Corps of Engineers Waterways Experiment Station and director of the Army Research Laboratory and received both the Meritorious and Distinguished Presidential Rank Awards for exemplary executive leadership. Dr. Whalin received his PhD degree from Texas A&M University.

John Wigle

Mr. John Wigle is the chief of the Worldwide Incidents Team at the National Counterterrorism Center. The unit is responsible for collecting, analyzing and cataloging data on acts of terrorism for the U.S. government's authoritative database, the Worldwide Incidents Tracking System (WITS). The unit also coordinates annually with the Department of State on Country Reports on Terrorism (formerly Patterns of Global Terrorism), which is a widely referenced congressional report providing a calendar-year snapshot on terrorism. Mr. Wigle received his master's degree from Johns Hopkins University, his bachelor's degree from the University of Maryland University College, and completed graduate studies at Harvard University in 2003.

Jonathan Wilkenfeld, PhD

Dr. Jonathan Wilkenfeld is the director for the Center for International Development and Conflict Management (CIDCM), and a professor and prior chair of the Department of Government and Politics at the University of Maryland. As the director of CIDCM, Dr. Wilkenfeld leads the center's efforts in translating social science research into accessible and useful information for practitioners and policy-makers working in the fields of conflict management and development. He is a specialist in foreign policy decision-making and crisis behavior, and in the use of simulation in political science. Since 1977, Dr. Wilkenfeld has served as co-director of the International Crisis Behavior Project, a cross-national study of international crises in the twentieth century. He has published widely and received numerous awards for excellence in teaching. His latest work focuses on the use of experimental techniques to study the mediation process in international crisis negotiations and how decision-makers learn from previous crisis experience. Dr. Wilkenfeld received a BS from the University of Maryland, an MA from George Washington University, and a PhD in from Indiana University, all in political science.

Paul Williams, DVM

Dr. Paul Williams is the director for agriculture, food and veterinary security for the Terrorism Emergency Response and Preparedness Division at the Georgia Office of Homeland Security, Georgia Emergency Management Agency. In 1993, after more than 20 years in private practice, he joined the Georgia Department of Agriculture as a disease eradication veterinarian. Since 2000 he has served broadly on emergency preparedness, response and recovery for the State of Georgia, DHS, and USDA. He received his BS and DVM degrees from Graduate University of Georgia.

Ross Wilson

Ross Wilson is president and CEO of the Texas Cattle Feeders Association (TCFA), headquartered in Amarillo; he was named to that position in 2006. As president & CEO, Mr. Wilson is responsible for day-to-day operations of the association, including supervising a staff of 18 and carrying out policy established by the TCFA board of directors. He has been on the staff since 1985, serving previously as vice president and government affairs director. Mr. Wilson has been active in several industry-related and civic organizations. In 2006, Mr. Wilson was awarded the Gerald W. Thomas Outstanding Agriculturist Award by Texas Tech. He was also selected in 2001 as a distinguished alumni of the College of Agricultural Sciences and Natural Resources. Mr. Wilson is a 1980 honors graduate of Texas Tech University and holds a bachelor's degree in agricultural economics.

Kate Worboys, PhD

Dr. Katherine Worboys is the assistant director for education at START. In this capacity, she co-directs and teaches in the University of Maryland's undergraduate minor in terrorism studies and graduate certificate in terrorism studies. She directs the START pre- and post-doctoral fellowship program and the START undergraduate research program, and she has worked to found the University of Maryland's counterterrorism study-abroad program and Homeland Security federal semester. She also directs START's summer research program and for-credit internship program. In previous work, Dr. Worboys supported a range of different training and education initiatives for the Department of Homeland Security and partner organizations. She has authored numerous studies on emergency response and humanitarian assistance operations for a range of federal departments and agencies, including support for the federal interagency review effort that resulted in the Homeland Security Council's report on Hurricane Katrina. Dr. Worboys received her BA in history from Duke University, and her MA and PhD in history, with a secondary field in anthropology, from the University of Michigan.

Centers of Excellence

U.S. Department of Homeland Security

The Center for Risk & Economic Analysis of Terrorism Events (CREATE), led by the University of Southern California, evaluates the risks, costs, and consequences of terrorism, and guides economically viable investments in countermeasures that will make our Nation safer and more secure. www.usc.edu/create

CREATE
HOMELAND SECURITY CENTER

National Center for Food Protection & Defense (NCFPD), led by the University of Minnesota, defends the safety of the post-harvest food system by establishing best practices, developing new tools, and attracting new researchers to manage and respond to food contamination events. www.ncfpd.umn.edu

NATIONAL CENTER FOR
FOOD PROTECTION AND DEFENSE
A HOMELAND SECURITY CENTER OF EXCELLENCE

Discrete Science Centers are led by Rutgers University (Lead Center), the University of Southern California, the University of Illinois at Urbana-Champaign, and the University of Pittsburgh. They collaborate with the Institute for Discrete Sciences (IDS), based at Lawrence Livermore National Laboratory, to conduct research on advanced methods for information analysis and the development of computational technologies to protect the Nation. www.dydan.rutgers.edu

DyDAn
MIAS
MULTIMODAL INFORMATION ACCESS AND SYNTHESIS
CKD

The National Center for Foreign Animal and Zoonotic Disease Defense (FAZD), led by Texas A&M University, protects against the introduction of high-consequence foreign animal and zoonotic diseases into the United States, with an emphasis on prevention, surveillance, intervention, and recovery. http://fazd.tamu.edu

FAZD CENTER

Center for Advancing Microbial Risk Assessment (CAMRA), led by Michigan State University and established jointly with the U.S. Environment Protection Agency, fills gaps in risk assessments for decontaminating microbiological threats, such as the plague and anthrax—answering the question, "How Clean is Safe?" www.camra.msu.edu

CAMRA
Center for Advancing Microbial Risk Assessment

Natural Disasters, Coastal Infrastructure and Emergency Management (NDCIEM), led by the University of North Carolina at Chapel Hill and Jackson State University in Jackson, MS, will enhance the Nation's ability to safeguard populations, properties, and economies against the consequences of catastrophic natural hazards of coastal regions.

The Center for Border Security and Immigration, led by the University of Arizona and the University of Texas at El Paso, will develop technologies, tools, and advanced methods to balance immigration and

commerce with effective border security, as well as assess threats and vulnerabilities, improve surveillance and screening, analyze immigration trends, and enhance policy and law enforcement efforts.

Regional Visualization and Analytics Centers (RVACs) are led by Penn State University, Purdue University, Stanford University, the University of North Carolina at Charlotte, and the University of Washington. They collaborate with the National Visualization and Analytics Center, based at Pacific Northwest National Laboratory, to conduct research on visually based analytic techniques that help people gain insight from complex conflicting and changing information. http://nvac.pnl.gov/centers.stm

The Center for Island, Maritime and Extreme Environment Security (CIMES), led by the University of Hawaii in Honolulu for maritime and island security, and **the Center for Port Security**, led by Stevens Institute of Technology will develop technologies and tools that will strengthen maritime domain awareness and safeguard populations and properties unique to U.S. islands, ports, and remote and extreme environments.

Center for Explosives Detection, Mitigation, and Response (COE), led by Northeastern University and the University of Rhode Island, conduct research and develop technologies, tools, and advanced methods for the detection, interdiction, and mitigation of the effect of explosives used by terrorists. www.neu.edu/alert

The National Consortium for the Study of Terrorism and Responses to Terrorism (START), led by the University of Maryland, informs decisions on how to disrupt terrorists and terrorist groups while strengthening the resilience of U.S. citizens to terrorist attacks. www.start.umd.edu

National Transportation Security Center of Excellence (NTSCOE) has 3 major components: Research, Education & Training, and Petro-Chemical Transportation. The NTSCOE for Research is led by the University of Connecticut and includes the Mack-Blackwell Rural Transportation Center at the University of Arkansas and the Mineta Transportation Institute (MTI) at San Jose State University. The NTSCOE for Education & Training is led by Tougaloo College in Tougaloo, MS and includes the National Transit Institute at Rutgers University and the Homeland Security Management Institute at Long Island University. The NTSCOE- for Petro Chemical is led by Texas Southern University in Houston, TX. All 7 institutions for the NTSCOE will develop new technologies, tools, and advanced methods to defend, protect, and increase the resilience of the Nation's multimodal transportation infrastructure.

The National Center for the Study of Preparedness and Catastrophic Event Response (PACER), led by Johns Hopkins University, optimizes our Nation's preparedness in the event of a high-consequence natural or man-made disaster, as well as develops guidelines to best alleviate the effects of such an event. www.pacercenter.org

DHS S&T's Six Technical Divisions

The mission of the Department of Homeland Security is to prevent terrorist attacks within the United States, reduce America's vulnerability to terrorism, and minimize the damage and recover from attacks that may occur. The strategies the Science & Technology Directorate will use to accomplish those Department goals and make the Nation safer are:

The S&T Directorate **Explosives Division** promotes the development of effective techniques to protect our citizens and our country's infrastructure against the devastating effects of explosives by seeking innovative approaches in detection, and in countermeasures. It provides the concepts, science, technologies and systems that increase protection from explosives and promotes the development of field equipment, technologies, and procedures to interdict suicide bombers, car and truck bombs, and shoulder-fired missiles before they can reach their targets.

The S&T **Chemical/Biological Division** seeks out the science needed to reduce the probability and potential consequences of a biological pathogen or a chemical attack on the nation's civilian population, its infrastructure, or its agricultural system. The division develops and implements early detection and warning systems for attack characterization. Priorities include research and development efforts on urban monitoring, detection technologies, bioassays, a bioforensics capability, and restoration and response tools and technologies.

The attack on 9/11 demonstrated profoundly the danger to first responders and the public when those responding to emergencies cannot communicate effectively. The ability to talk across disciplines and jurisdictions systems, exchanging voice and/or data on demand, in real time, when authorized, is critically important, as is having disaster management plans to deal with crises. The S&T Directorate's **Command, Control, and Interoperability Division** addresses the intricately related issues of reliable day-to-day public safety communications, as well as the security of our cyber world.

The S&T **Borders and Maritime Security Division** focuses on preventing the entry of illegals and terrorists while ensuring an efficient flow of lawful commerce, visitors, and citizens. It looks at technologies to protect and strengthen our ports of entry, technologies that can prescreen all high-risk entities coming into the country, and entry/exit tracking capabilities. It also looks at new technologies for detecting, identifying, and classifying high-interest vessels, and capabilities for wide-area monitoring of maritime traffic.

S&T looks at biometrics, motivation and intent, hostile intent, human factors engineering, and the social/behavioral/economic sciences to improve detection, analysis, and understanding of threats posed by individuals, groups, and radical movements. The efforts of the S&T **Human Factors Division** support the preparedness, response, and recovery of communities affected by catastrophic events.

The need to protect the country's 18 areas of critical infrastructure from acts of terrorism, natural disasters, and accident, is also paramount, but so are state and local preparedness and response. S&T's **Infrastructure/Geophysical Division** addresses physical, cyber, and human elements of our Nation's vulnerable infrastructure, focusing on capabilities, needs, and gaps, and on known threats.

In short, when dedicated scientists, engineers, and thinkers push the boundaries of challenge, and when they are committed to the security of our nation, they can help ensure that new mission-critical capabilities are created, knowledge is generated, and needed technologies are deployed to the right places.

Centers of Excellence Director's Contact List

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