



Homeland
Security

Science and Technology

S&TRONG!

Science & Technology for Intelligent Resilience



Online at <http://www.orau.gov/DHSsummit>

The Fourth Annual DHS University Network Summit

March 10-12, 2010
Renaissance Hotel
Washington, DC



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



Sponsored by the Office of University Programs, 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 10, 2009

Message from the Under Secretary for Science and Technology

Welcome to the Fourth Annual Department of Homeland Security University Network Summit!

This year's theme – Science and Technology for Intelligent Resilience – affords an opportunity for the academic community to consider research initiatives across the broad homeland security enterprise for strengthening the resiliency of the Nation.

We must ask ourselves: What makes people and communities resilient in the face of a high-consequence event? What is in place now and what else do we need to prevent the Nation from becoming overwhelmed by such events? What is the role of science and technology in strengthening the resiliency of the country? What can the science and technology community do to mitigate the impacts of a disaster and enhance opportunities for communities to quickly regain their footing?

The research community is the foundation for technology solutions that will help the nation prepare for, protect against and recover from an event. We need to hear your good ideas and circulate them so that we can learn from one another and take these lessons home to better prepare our communities.

It is my hope that the Summit – which showcases the capabilities of the S&T Centers of Excellence – stimulates fresh thinking in the research community so you may gain new perspective and valuable insights into some of the most pressing homeland security challenges. We count on you to inspire, discover, and advance solutions for protecting people and infrastructure.

Thank you for joining us for this important Summit. I hope all of you take advantage of the valuable opportunity before you to connect with your peers, exchange information, and focus attention on the vital role of resiliency in making the Nation stronger.

A handwritten signature in black ink that reads "Tara O'Toole".

Tara O'Toole, M.D., M.P.H.
Under Secretary for Science and Technology

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



**Homeland
Security**

Science and Technology

March 10, 2010

Welcome to the Fourth Annual DHS University Network Summit sponsored by the DHS Science and Technology Directorate, Office of University Programs.

This year's theme is **STRONG: Science and Technology for Intelligent Resilience**. Subject matter experts from academia, DHS and the international community will focus on four aspects of resilience: individual, community, economic and infrastructure and how research and technology can strengthen all of these.

There are over 30 breakout panels and plenary sessions to satisfy your interests. These panels highlight the collaborative research efforts of the 12 DHS Centers of Excellence (COE) and their over 200 partner institutions.

I strongly encourage you to visit the COE Research Innovation Showcase to see the Centers' research efforts first-hand. I also encourage you to take advantage of this opportunity to engage in the sessions by asking questions and developing relationships with our COE researchers.

While we have a way to go to ensure the Nation's resilience, we are proud of the progress we have made to date. We think that by the end of the Summit you will understand why.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew Clark".

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



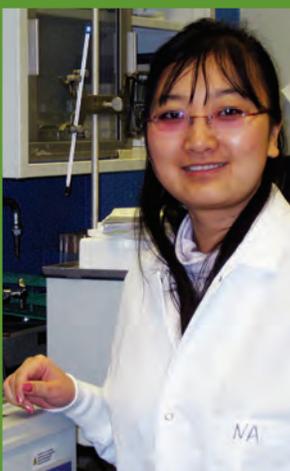
S&TRONG! **Science & Technology** for Intelligent Resilience



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

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University Network Summit

AGENDA



AGENDA

WEDNESDAY, March 10th, 2010

8:30 am – 8:40 am	Honor Guard/National Anthem Welcome: Matthew Clark, <i>Director, Office of University Programs</i>				
8:40 am – 9:00 am	Keynote Speaker: Janet Napolitano, <i>Secretary, DHS (Invited)</i>				
9:00 am – 10:00 am	Plenary 1: How Can S&T Improve Operational Resilience?				
	Moderator: Rolf Dietrich, <i>Deputy Director of Research, S&T</i>				
	Panel Members: David Aguilar, <i>Deputy Commissioner (Acting), U.S. Customs and Border Protection (Invited)</i> Admiral Thad Allen, <i>Commandant, USCG (Invited)</i> Rand Beers, <i>Under Secretary, NPPD</i> Craig Fugate, <i>Administrator, FEMA (Invited)</i> Robin Kane, <i>Assistant Administrator/Chief Technology Officer, TSA</i> Caryn Wagner, <i>Under Secretary for Intelligence and Analysis</i>				
10:00 am – 10:15 am	Break				
10:15 am – 10:45 am	Keynote Speaker: Lt. General Russel Honoré, <i>United States Army (Ret.)</i>				
10:45 am – 11:00 am	Break				
11:00 am – 12:00 pm	Plenary 2: What Makes an Economy Resilient?				
	Moderator: Matthew Clark, <i>Director, Office of University Programs</i>				
	Panel Members: Carol Mansfield Erwann Michel-Kerjan Adam Rose Gary Shiffman				
12:00 pm – 1:15 pm	Lunch				
	Keynote Speaker: Gary Berntsen Author of: <i>Jawbreaker: The Attack on bin Laden and al-Qaeda; The Walk-In; and Human Intelligence, Counterterrorism and National Leadership: A Practical Guide</i>				
1:15 pm – 1:30 pm	Transition to Breakout Sessions				
1:30 pm – 3:00 pm	Breakout Sessions				
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5
	Topic: The Challenges of Food Defense in a Global Food System Moderator: Shaun Kennedy Panel Members: Bob Brackett Sara Klucking Bill Ramsey	Topic: The H1N1 Influenza Pandemic as a Case Study for the One-Health Approach Moderator: Tom Powdrill Panel Members: George Korch Elizabeth Lautner Daniel Perez	Topic: Improving Human and Environmental Resilience after a Bioterrorist Attack using QMRA Moderator: Stephen Schaub Panel Members: Elizabeth Casman Patrick Gurian Mark Weir	Topic: Visualization Sciences: Research and Transition Moderator: David Ebert Panel Members: Niklas Elmqvist Brian Fisher Kelly Gaither John Gerth Bill Ribarsky	Topic: Post-secondary Homeland Security Curriculum Development for Economic, Community, and Individual Resilience Moderator: Christine Springer Panel Members: Bethany Brown Terri Clay Keith Clement
3:00 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
	<p>Topic: Challenges and New Approaches for Protecting Systems-Based Infrastructures</p> <p>Moderator: Morgan Hennessey</p> <p>Panel Members: Ryan Newkirk Darren Slevin Paul Williams</p>	<p>Topic: Applications of the FAZD Center Dynamic Preparedness System</p> <p>Moderator: James Wall</p> <p>Panel Members: Eric Meyers John Picanso Mark Teachman</p>	<p>Topic: Enhancing Community Resilience to All Hazards</p> <p>Moderator: Michael Matthews</p> <p>Panel Members: David Butler Ruth Carrico Warren Edwards Thomas Robl David Tilotta</p>	<p>Topic: Homeland Security Applications of Data Science Research</p> <p>Moderator: Fred Roberts</p> <p>Panel Members: Hans Chalupsky Dan Roth William Wallace Abdul-Aziz Yakubu</p>	<p>Topic: Building a Resilient Community through the Transition of University-Based Research</p> <p>Moderator: Tom Kowalczyk</p> <p>Panel Members: James Bohland Chung-Sheng Li Clay Rogers</p>
5:00 pm – 5:30 pm	Keynote Speaker: Congressional Representative – To Be Determined				

THURSDAY, March 11th, 2010

8:30 am – 8:40 am	Welcome: Bradley Buswell, <i>Deputy Under Secretary, S&T</i>
8:40 am – 9:00 am	Keynote Speaker: Dr. Tara O'Toole, <i>Under Secretary, S&T</i>
9:00 am – 10:00 am	<p>Plenary 3: What Makes a Resilient Community?</p> <p>Moderator: Rick Lempert, Research Lead & Chief Scientist, Human Factors Division</p> <p>Panel Members: David Kaufman Ji Sun Lee Fran Norris Gavin Smith</p>
10:00 am – 10:15 am	Break
10:15 am – 11:15 am	<p>Plenary 4: What Makes the International Community Resilient?</p> <p>Moderator: Paul Ragsdale, <i>Science Advisor, International Cooperative Programs Office</i></p> <p>Panel Members: Homeland Security Subject Matter Experts from the International Community Khoen Liem, <i>European Commission</i> Johan von Schreeb Ian Stewart, <i>Deputy Commissioner of Specialist Operations, Queensland Police Service, Australia</i></p>
11:15am – 11:30 am	Break
11:30 am – 12:30 pm	<p>Plenary 5: What Makes the Infrastructure Resilient?</p> <p>Moderator: Chris Doyle, Director, Infrastructure and Geophysical Division</p> <p>Panel Members: Jim Caverly (Invited) Mary Ellen Hynes Brian Jenkins Shaun Kennedy</p>

AGENDA

12:30 pm – 1:30 pm	Lunch Keynote Speaker: President Charles Steger, <i>Virginia Tech University</i>				
1:30 pm – 1:45 pm	Transition to Breakout Sessions				
1:45 pm – 3:15 pm	Breakout Sessions				
	Panel 11 Topic: Challenges in Suspicious Activity Reporting (SAR) Moderator: Michael Orosz Panel Members: Joan McNamara Melissa Smislova Henry Willis	Panel 12 Topic: Community Resilience as a Function of State and Local Government Moderator: Gary LaFree Panel Members: Sabrina Mattson Rose Pfefferbaum Mark Tompkins	Panel 13 Topic: Resiliency on the Border: Cross-Border Risk Management and Security Moderator: Victor Talavera Panel Members: Ricardo Blazquez Jaime Garcia Richard Posthuma Juan Villa	Panel 14 Topic: Threats and Resiliency in the Arctic North Moderator: Roy Wilkens Panel Members: Margo Edwards John Farrell J.J. Fisher Buck Sharpton	Panel 15 Topic: Building the DHS Workforce through Educational Opportunity Moderator: Dave Newton Panel Members: Sam Musa Cheryl Seminara Stephanie Willett
3:15 pm – 3:30 pm	Transition				
3:30 pm – 5:00 pm	Breakout Sessions				
	Panel 16 Topic: Risk Perception & Communication to Enhance Resilience Moderator: Richard John Panel Members: William Burns Robin Dillon-Merrill Heather Rosoff Tim Sellnow	Panel 17 Topic: Terrorism Trends: Understanding Threat to Enhance Resilience Moderator: Kathleen Smarick Panel Members: Gary Ackerman Rebecca Denning Gary LaFree	Panel 18 Topic: Creating Resilient Border Security Infrastructure and Systems Moderator: Elyse Golob Panel Members: Neville Cramer Bojan Cukic Doris Meissner Jay Nunamaker	Panel 19 Topic: Maritime Security: From Preparedness and Response to Resilient: The Urban Port and Inland Waterway Moderator: Michael Bruno Panel Members: Kevin Kiefer Ed Merkle Jeff Nickerson James Platske	Panel 20 Topic: Building Community Resilience in the K-12 Market Moderator: Tom Kowalczyk Panel Members: Mark Casto Claire Duggan Ric Ledbetter Dan Wendel
5:00 pm – 5:30 pm	Keynote Speaker: Former Governor George Pataki, <i>New York</i>				

Friday, March 12th, 2010

8:30 am – 8:40 am	Welcome: Starnes Walker, <i>Director of Research, S&T</i>				
8:40 am – 9:00 am	Keynote Speaker: Brian Kamoie, <i>Senior Director for Preparedness Policy, White House National Security Staff</i>				
9:00 am – 9:15 am	Transition to Breakout Sessions				
9:15 am – 10:45 am	Breakout Sessions				
	Panel 21	Panel 22	Panel 23	Panel 24	Panel 25
	Topic: Hazards Resilience: A New Approach to Forecasting the Coastal Impacts of Hurricanes	Topic: Transportation System Resiliency	Topic: Crisis Standards of Care	Topic: Intelligent Detection and Deterrence Using Resilient Policies and Distributed Equipment	Topic: Building an S&T Strong First Responder Community through Educational and Training Partnerships
	Moderator: Tom Richardson	Moderator: Dan Schultz	Moderator: Gabe Kelen	Moderator: Michael Silevitch	Moderator: Mike Tobia
	Panel Members: Shahrouz Aliabadi Himangshu Das Gordon Skelton Jennifer Wozencraft	Panel Members: Michael Accorsi Vincent Henry Chris Kozub Edward Pohl	Panel Members: Elizabeth Lee Daugherty Dan Hanfling Darren Mareiniss Sally Phillips	Panel Members: Carl Crawford Lisa Dolev Carey Rappaport Roshni Sherbondy	Panel Members: Tyfur Altiok Diana Beecher William Pottenger Fred Roberts Bethann Rooney
10:45 am – 11:00 am	Transition				
11:00 am – 12:30 pm	Breakout Sessions				
	Panel 26	Panel 27	Panel 28	Panel 29	Panel 30
	Topic: Promoting Psychological Resiliency in Disasters	Topic: Prevention Strategies for Surface Transportation Systems	Topic: Resilience in the Face of Pandemics	Topic: Structures Resilient to Blast Effects	Topic: Research Transition Pathways Roundtable
	Moderator: Mary Lou Kelley	Moderator: Sonya Proctor	Moderator: Lynn Goldman	Moderator: Jimmie Oxley	Moderator: Tom Kowalczyk
	Panel Members: Connie Best Ken Ruggiero Kathleen Sherrieb	Panel Members: Brian Jenkins Carol Lewis Abdul Turay	Panel Members: Joshua Epstein Andrew Garrett Adam Rose	Panel Members: Eve Hinman Shalva Marjanishvili Arun Shukla Nancy Sottos	Panel Members: Virginia Chappelle Tyler Foulkes Joe Garofalo Clay Rogers Beth Windisch
12:30 pm – 1:30 pm	Lunch				
	Keynote Speaker: Stephen Flynn, <i>President, Center for National Policy</i> Author of: <i>The Edge of Disaster: Rebuilding a Resilient Nation</i>				



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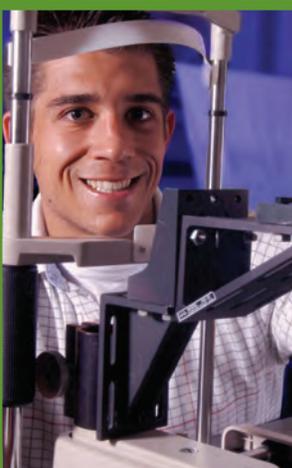
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SESSION DESCRIPTIONS



SESSION DESCRIPTIONS

PLENARY SESSION DESCRIPTIONS

Wednesday, March 10th, 2010

Plenary 1:

Title: How Can S&T Improve Operational Resilience?

Plenary 2:

Title: What Makes an Economy Resilient?

Thursday, March 11th, 2010

Plenary 3:

Title: What Makes a Resilient Community?

Plenary 4:

Title: What Makes the International Community Resilient?

Plenary 5:

Title: What Makes the Infrastructure Resilient?



SESSION DESCRIPTIONS

BREAKOUT SESSION DESCRIPTIONS

Wednesday, March 10th, 2010

Panel 1: National Center for Food Protection and Defense (NCFPD)

Title: The Challenges of Food Defense in a Global Food System

As illustrated by recent food borne illness outbreaks and food supply disruptions, our increasingly global food system presents a unique set of vulnerabilities to homeland security. With food imported from over 160 countries, from ingredients to finished products, it is nearly impossible to eat a meal without consuming something from outside the United States. This complex global food system meets consumer needs for variety and freshness but presents many challenges to understanding risks, designing food system chains, and implementing cost-effective mitigation strategies. Both the scope of these vulnerabilities and current approaches for developing strategies to protect the food system and the public will be explored in the context of these global challenges.

Panel 2: National Center for Foreign Animal and Zoonotic Disease Defense (FAZD)

Title: The H1N1 Influenza Pandemic as a Case Study for the One-Health Approach

The DHS FAZD Center and the NIH Western Regional Center of Excellence for Biodefense and Emerging Infectious Diseases were co-conveners of a national influenza task force comprising 20 nationally recognized experts that met in December 2009 to review the H1N1 pandemic as a case study. The task force evaluated issues and opportunities for research and education involved in taking a one-health approach to the surveillance, diagnostics, transmission, and application of modern biological and computational methods to prevention, intervention, and recovery from outbreaks of influenza and other zoonotic diseases. The one-health approach is an emerging strategy that links animal, human, and environmental factors that come into play in emerging zoonotic diseases and is leading to an interdisciplinary approach in research, education, and operational response to these diseases. This session will review the resulting publication from the task force and will involve participants from government, academia and medical, public health and animal health communities.

Panel 3: Center for Advancing Microbial Risk Assessment (CAMRA)

Title: Improving Human and Environmental Resilience after a Bioterrorist Attack using QMRA

Anthrax remains one of the key agents of bioterrorism due to its environmentally resistant spores, multiple exposure pathways, and mortality of individuals who are not treated. CAMRA researchers present a complete quantitative microbial risk assessment (QMRA) that improves the understanding of the complexities, uncertainties, and ability to adapt to an anthrax bioterrorist scenario. This QMRA will help put the problems and decisions that need to be made to protect public health into perspective, assisting both the scientist and practitioner.

SESSION DESCRIPTIONS

Panel 4: The Command, Control and Interoperability Center of Excellence (CCI) – Visual Analytics for Command, Control and Interoperability Environments (VACCINE)

Title: Visualization Sciences Research and Transition

This session will highlight the investigation and application of visualization sciences to first responder requirements, the efforts of other DHS centers of excellence, and the needs of other homeland security agencies.

Panel 5: Education

Title: Post-secondary Homeland Security Curriculum Development for Economic, Community, and Individual Resilience

This session targets those interested in building a homeland security curriculum as a stand-alone program or to augment existing education programs. In addition, the session targets those interested in applying for education grants from DHS S&T Office of University Programs because all panel members were awarded either DHS S&T Scientific Leadership Awards or Career Development Grants from the Office of University Programs.

Panel 6: National Center for Food Protection and Defense (NCFPD)

Title: Challenges and New Approaches for Protecting Systems-Based Infrastructures

Systems-based infrastructures pose unique challenges when assessing vulnerability and risk, as well as implementing new technology-based solutions to reduce the risk to that critical infrastructure. Most, if not all, of the traditional risk assessment techniques or criticality assessment techniques that are utilized were developed within the context of defending assets, not systems. The tools do not generally lend themselves to cross-comparison or internal comparison within a system. In addition, once those critical elements of the infrastructure have been identified, doing a comparative risk assessment is a challenge, and determining where across this broad infrastructure to invest for its further protection is difficult. Through partnership with DHS, USDA and FDA, NCFPD has developed the Food and Agriculture Criticality Assessment Tool (FASCAT), which was deployed for the second year to the states for identifying critical infrastructure within their state. In addition to other uses, at the state level this supports the annual data call. Having identified what infrastructure is most critical in the state, the next step is to perform a risk assessment that takes into account the systems-based nature of that infrastructure. New approaches are being piloted now, on conducting quantitative, comparative system-based risk assessment that would allow internal and cross-systems comparisons. These new approaches and techniques are very valuable for food and agriculture, although the need is not unique to food and agriculture. The tools can now be extended to other systems-based infrastructures to enhance the ability to protect them the same way we are now able to protect asset-based infrastructures.

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Panel 7: National Center for Foreign Animal and Zoonotic Disease Defense (FAZD)

Title: Applications of the FAZD Center Dynamic Preparedness System

The Dynamic Preparedness Simulator is an integrated distributed multi-purpose system developed to support operational and analytical functions created as part of the FAZD Center core program. It involves a common framework in a dashboard format that provides integration of spatially explicit information and overlays related reports, decision support tools, models, and relevant databases available for immediate access to planners, managers, and senior administrators. The system is web based and highly flexible. This session will present the use of the system as an integrated dashboard for the DHS National Biological Information Center (NBIC), a common operating picture for the U.S. Coast Guard Joint Harbor Operations Center at the Port of Seattle, and the Emergency Response Support System (ERSS) to support emergency responders in outbreaks of animal disease under development for the USDA Animal and Plant Health Inspection Service Emergency Programs (APHIS).

Panel 8: Southeast Region Research Initiative (SERRI) and Kentucky Critical Infrastructure (KCI)

Title: Enhancing Community Resilience to All Hazards

No factor is more critical in lessening the impact of a disaster or a pandemic than the speed with which the community recovers. Faster recovery reduces the negative impact on the lives of humans and minimizes economic loss and/or damage to the environment and property. This panel will explore various research and development projects from the Southeast Region Research Initiative and Kentucky Critical Infrastructure Protection Program focusing on community resilience when a disaster or pandemic occurs.

Panel 9: The Command, Control and Interoperability Center of Excellence (CCI) – Command, Control, and Interoperability Center for Advanced Data Analysis (CCICADA)

Title: Homeland Security Applications of Data Science Research

This session will highlight the investigation and application of data sciences to first responder requirements, the efforts of other DHS centers of excellence, and the needs of other homeland security agencies.

Panel 10: Research Transition

Title: Building a Resilient Community through the Transition of University-Based Research

The breakout session will feature a presentation of the Living Lab concept, a joint initiative of Virginia Tech, Arlington County, and IBM to accelerate the transition of enabling research. Through this embedded development environment, many of the barriers to rapid research transition can be addressed and resolved. Opportunities exist for DHS centers of excellence collaborations with the Living Lab.

SESSION DESCRIPTIONS

Thursday, March 11th, 2010

Panel 11: Center for Risk and Economic Analysis of Terrorism Events (CREATE)

Title: Challenges in Suspicious Activity Reporting (SAR)

This session will report on the effectiveness of programs generating and using suspicious activity reports (SARs). We will review how local and national law enforcement agencies are currently implementing the SARs initiative, identify known issues and challenges, and review which methods and processes currently work. We will also review progress on improving understanding of the existing SARs operating environment and establishing a prototype SARs collaborative environment for testing and demonstrations. A question to be addressed by the panel is whether the SARs collaborative system should be built as part of an existing fusion infrastructure (i.e., integrated into an existing system) or developed as a completely new system.

Panel 12: National Consortium for the Study of Terrorism and Responses to Terrorism (START)

Title: Community Resilience as a Function of State and Local Government

There is wide recognition that individuals need to take specific actions to maximize their own ability to survive and recover from a disaster event—be it a natural hazard or a man-made threat. However, a wide range of institutions can also impact the levels of resilience in a given community and, while much attention is paid to the role of the federal government in enhancing resilience, state and local governments can also play an essential role. This panel will explore the key components of community resilience, with an emphasis on which components can most effectively be fostered by state and local governments. In particular, the panel will explore what roles and functions state institutions have adopted in efforts to support resilience, preparedness, and safety, as well as what leaders in one specific component of the public sector—K-12 education—have done to enhance both institutional and community resilience.

Panel 13: National Center for Border Security and Immigration – BORDERS (NCBSI – BORDERS)

Title: Resiliency on the Border: Cross-Border Risk Management and Security

This panel will offer different perspectives regarding the effects of and the preparedness and response to threats on the border, including terrorist attacks, drug cartel violence, and natural and man-made disasters. Border cities in the United States are particularly vulnerable because of the high volume in border traffic through their ports of entry. Panelists will discuss some of the threats and effects of actual attacks in twin border cities, such as Ciudad Juarez and El Paso, Texas. They will also discuss how border cities can prepare for these kinds of incidents on the border. Preparation includes education of first responders and security practitioners of both the private and public sectors, and plans of communicative action within the city and with authorities in cities on the other side of the border. This will include the need to develop cross-national agreements on plans and the distribution of these plans, as they are crucial in establishing and maintaining resiliency. Through this method of adoption and agreement of plans, resiliency becomes part of the strategy.

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Panel 14: Center for Maritime, Island and Remote and Extreme Environment Security (MIREES) – National Center for Island, Maritime, and Extreme Environment Security (CIMES)

Title: Threats and Resiliency in the Arctic North

As the Arctic warms, nations look to the high north for reducing shipping costs and to develop natural resources that have been locked beneath the sea ice for millennia. But little thought has gone into preparing for this new era; there are no deep water ports in northern Alaska, and this will always be a very dangerous place to do business. Planning for resiliency in Arctic infrastructure requires an assessment of man-made and natural threats, construction designs that protect against these dangers, and a timely/effective response to minimize impacts. The principal dangers to Arctic infrastructure include storms, ice collisions (with ships and offshore constructs), and accidents (ship collisions, ship grounding, oil spills in ice-laden waters, etc). Oil spill prevention and cleanup has to be approached from an international perspective because a single major oil spill in the Arctic Ocean could close down all U.S. commercial/industrial activities in the Arctic for a very long time—even if the spill does not occur in U.S. territorial waters. Other major issues are the effects of winter storms on coastal infrastructure along the western and northern coasts of Alaska. These storms have barometric pressure drops equivalent to hurricanes in tropical/temperate regions, and winds can exceed 90 kts. As the Arctic sea ice retreats further and earlier, and returns later, storm surge and fetch become huge challenges for coastal villages and industrial activities along the northern Bering, the Chukchi, and Beaufort Seas.

Panel 15: Education

Title: Building the DHS Workforce through Educational Opportunity

The future leaders of DHS will come from the dedicated DHS workforce on the front lines today. Nearly all the ingredients are there—skill, professionalism, dedication and desire. The one thing missing is opportunity. This session will bring together experts from academia, DHS components, DHS S&T, and the DHS Chief Learning Officer to discuss their efforts to expand that critical element, opportunity in education, which will propel the future leaders of DHS forward to meet the challenge.

SESSION DESCRIPTIONS

Panel 16: Center for Risk and Economic Analysis of Terrorism Events (CREATE)

Title: Risk Perception & Communication to Enhance Resilience

A key factor in enhancing the resilience of a community is improving public understanding of the types, nature, and scope of threats a community and its residents might face. If the nature of risks is better understood, individuals and institutions will be more likely to engage in behaviors that support the goal of resilience (i.e., engage in preparedness/protective activities, buy appropriate insurance, build structures in safe areas, etc.). Thus, the way in which the public receives information about threats and risks can be essential to supporting (or hindering) steps that will enhance resilience.

The panelists will discuss the importance of understanding the dynamics of public response and will report preliminary results from a longitudinal study of public reactions to the attempted terrorist bombing of a commercial jetliner on 12/25/09. They will also report results from an experiment tracking individuals' cognitions, emotions, and behavioral intentions in response to a deadly biological threat. In addition, they will examine possible attributions for "near-misses" and how these attributes affect community preparations and resilience for disasters, both natural (e.g. hurricanes) and man-made (e.g. terrorist attacks on transportation systems). Lastly, we'll turn to crisis communication and its contribution to resilience.

Panel 17: National Consortium for the Study of Terrorism and Responses to Terrorism (START)

Title: Terrorism Trends: Understanding Threat to Enhance Resilience

In developing strategies for effectively enhancing U.S. resilience, it is crucial to understand the specific nature of threats faced in the country. One of the major threats existing in the United States today is the threat presented by terrorism. This panel will present state-of-the-art research on the nature of that threat by identifying trends in terrorist activity in the United States from 1970 to the present. In addition, the panel will examine emerging terrorist threats related to the possibility that



SESSION DESCRIPTIONS

terrorists might employ nuclear and/or radiological weapons in an attack. Finally, the panel will explore how effective counterterrorism measures can mitigate these threats and serve to enhance resilience. Expanded understanding of the nature of past, present, and future terrorist activity in the United States, and abroad, should inform decisions at both national and local levels about what actions and investments need to be made to enhance resilience to potential terrorist threats.

Panel 18: National Center for Border Security and Immigration (NCBSI)

Title: Creating Resilient Border Security Infrastructure and Systems

This panel will discuss some of the key factors required for resilient and collaborative border security and immigration infrastructure and systems. Unique aspects of trust, governance, information sharing, culture, and technical infrastructure are identified as the key ingredients in any security collaboration effort between the United States and Mexico. In addition, successful immigration policy depends on the extent to which it is congruent with the larger and changing forces driving immigration to the United States. Panelists will address how these key ingredients are organized through the use of relevant models and frameworks and will outline several challenges and potential solutions.

Panel 19: Center for Maritime, Island and Remote and Extreme Environment Security (MIREES) – Center for Secure and Resilient Maritime Commerce and Coastal Environments (CSR)

Title: Maritime Security: From Preparedness and Response to Resilient: The Urban Port and Inland Waterway

Our nation's ports and inland waterways contain critical infrastructure that might be vulnerable to human and natural threats arising from the waterside. Such vulnerabilities present challenges to the ability of our ports and waterways to absorb or limit disruption while retaining service continuity. This session will examine these threats and vulnerabilities—and the technologies and strategies to address them—via a specific threat scenario.

Panel 20: Research Transition

Title: Building Community Resilience in the K-12 Market

Preparing and inspiring today's youth to pursue careers in science, technology, engineering, and math (STEM) starts with early and creative interventions in the education process. This breakout session will feature several innovative efforts that are building the future STEM workforce while they build community resilience. One program model, Research Experience for Teachers (RET), is providing summer research opportunities for middle and secondary STEM teachers and community college faculty with supporting professional development to integrate research into local classrooms. Following an overview of the program, a high school teacher participating in RET will share his experience and the learning tools he developed for his students as a result of the program. Another initiative, implemented by a small business, has focused on the development of middle-school science fair kits inspired by DHS centers of excellence research. These and other programs are helping communities to improve their school systems and effectively educate students to meet demand for a skilled STEM workforce.

SESSION DESCRIPTIONS

Friday, March 12th, 2010

Panel 21: Center for Natural Disasters, Coastal Infrastructure, and Emergency Management (NDCIEM)

Title: Hazards Resilience: A New Approach to Forecasting the Coastal Impacts of Hurricanes

Researchers at the NDCIEM Center of Excellence have developed an innovative approach to improving hurricane impact forecasts that will enable local decision-makers to effectively plan and execute hurricane landfall response. The process rapidly accesses information contained in existing high-resolution data sets of hurricane surge in response to new advisory data from the National Hurricane Center. In addition, the information from the data sets can be coupled with 3-dimensional land-use products from existing airborne sensors to generate time-dependent inundation predictions. High-resolution surge data sets for large geographic regions can be generated quickly and cost effectively by applying newly developed computational algorithms.

Panel 22: National Transportation Security Center of Excellence (NTSCOE)

Title: Transportation System Resiliency

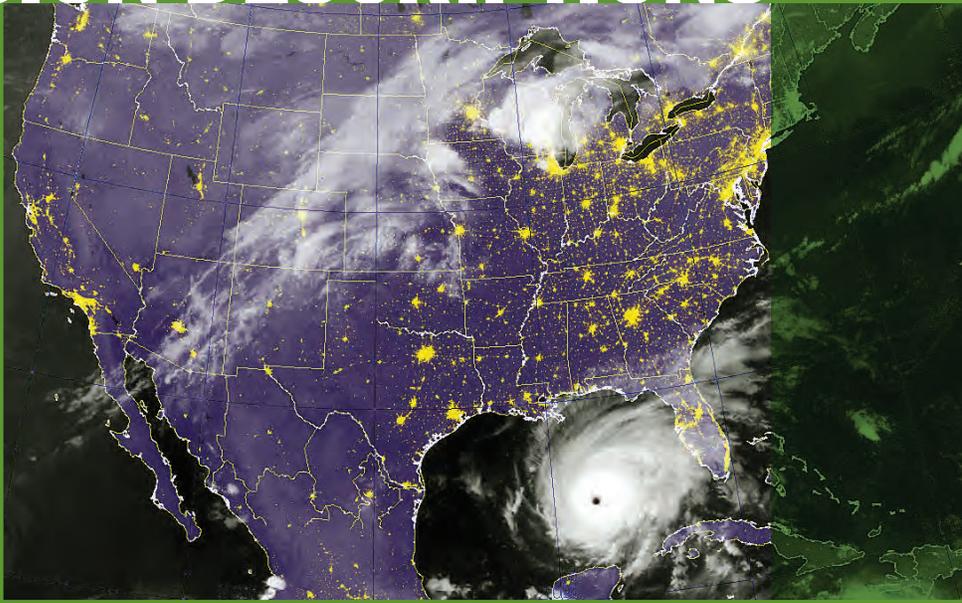
Transportation system resiliency is necessary to maintain an appropriate level of performance in the face of unplanned events. Breakdowns in resilience can result in significant economic loss and, more importantly, losses in human life. The panelists will address modeling resiliency of transportation systems, providing enabling technologies to develop the next generation of resilient transportation infrastructure, performing emergency preparedness exercises that contribute to flexible response and overall resilience, and developing resilience-building curriculum to strengthen crisis communication skills. This session will provide a cross-spectrum view into enhancing transportation system resilience through systems modeling, enabling technologies, preparedness exercises, and curriculum design.

Panel 23: National Center for the Study of Preparedness and Catastrophic Event Response (PACER)

Title: Crisis Standards of Care

This session will feature a discussion of legal considerations that providers and healthcare organizations must understand in a crisis event in order to enhance the resilience of their medical response systems. We will consider legal issues related to crisis standards of care and discuss the expansion of legal authority during a public health emergency. We will reflect on potential liability issues related to “crisis standards of care” and possible legal remedies. Additionally, operational considerations in hospital planning for crisis standards of care will be discussed with particular focus given to allocation of scarce medical resources with an aim of providing the audience with strategies that collectively enhance medical system resilience. The aim of this session is to raise awareness and enable audience members to create a durable healthcare system that is able to respond to a crisis environment while keeping in mind the legal implication of our response efforts.

SESSION DESCRIPTIONS



Panel 24: Center of Excellence for Awareness and Location of Explosives-Related Threats (ALERT)

Title: Intelligent Detection and Deterrence Using Resilient Policies and Distributed Equipment

Available threat detection equipment has limitations because detection rates are less than 100% on a finite suite of threats; false alarms and follow-up secondary and tertiary screening lead to high labor costs; throughput is limited; people who have to use the detection equipment are inconvenienced; and the weaknesses of the equipment may in time become evident to suspects. The panel will discuss how some of these limitations may be reduced with the use of policies and distributed equipment. The ultimate goal of threat interdiction is deterring the presence of the threats in the first place. Threat detection equipment provides a deterrent in addition to actual detection. The panel members will discuss how resilient policies can affect detection and deterrence. The idea of resiliency includes providing layers of observation and screening, randomization of policy, and varying levels of screening. A case study will be presented on the application of these methods for protecting subways. In addition, the integration and deployment of distributed, orthogonal equipment will be discussed.

Panel 25: Education

Title: Building an S&T Strong First Responder Community through Educational and Training Partnerships

The first responder community plays a vital and active role in many DHS centers of excellence (CoE) education and training research initiatives through collaborations cultivated by university program staff and with federal, state, and local stakeholders. This presentation will highlight several education and training projects underway that focus on first responder resiliency and include successful partnerships between CoE universities, members of the first responder community, and university program practitioners. Each project will include a brief demonstration of product(s) in development by the primary research team in consultation with a relevant end-user. The discussion of the Compstat project will cover training and education developed to assist first responder community. The discussion of the WTC Project will cover further development, examples and discussion of John Jay College mock EOC.

SESSION DESCRIPTIONS



Panel 26: Center for Natural Disasters, Coastal Infrastructure, and Emergency Management – DIEM (NDCIEM – DIEM)

Title: Promoting Psychological Resiliency in Disasters

Natural disasters can uproot families, destroy neighborhoods, and limit the availability of community resources. Despite devastating losses, some individuals quickly return to pre-disaster levels of adjustment. This panel explores variables related to psychological resiliency and recovery post-disaster.

Panel 27: National Transportation Security Center of Excellence (NTSCOE)

Title: Prevention Strategies for Surface Transportation Systems

This panel session will focus on strategies, lessons learned, and future developments for preventing acts of terrorism against surface transportation systems. Panel topics will include a range of preventive techniques and practices, including statistical analyses of explosive attacks on surface transportation systems; tracking hazardous materials carried on roadways; and behavior awareness training for surface transportation system employees.

Panel 28: National Center for the Study of Preparedness and Catastrophic Event Response (PACER)

Title: Resilience in the Face of Pandemics

Topics relating to resilience will be discussed. Presenters will address improving medical and public health outcomes in the face of pandemics. Specific examples include the national economic impact of school closures as a mechanism of resiliency; workforce resiliency; and absenteeism in the hospital-based workforce during pandemics.

SESSION DESCRIPTIONS



Panel 29: Center of Excellence for Awareness and Location of Explosives-Related Threats (ALERT)

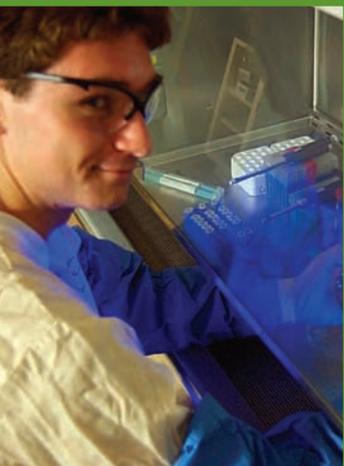
Title: Structures Resilient to Blast Effects

The physical integrity of infrastructure plays a critical role in the ability of a community or nation to rebound from man-made and natural disasters. With better design and construction materials, lives and property are saved and emergency response facilitated. This panel session will consider how to evaluate the resilience and robustness of structures using a probabilistic assessment approach. In addition, we will learn about new materials being developed to withstand and recover from catastrophic events. The blast resistance and dynamic failure behavior of novel composite materials will be discussed, as well as biologically inspired “self-healing” polymers and polymer composites that have the potential to recover functional performance following stress.

Panel 30: Research Transition

Title: Research Transition Pathways Roundtable

This roundtable will feature several pathways for the transition of research carried out at DHS centers of excellence (CoE). Each pathway provides the opportunity to bring the enabling capability made possible by CoE research to a wide and diverse clientele.



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BIOGRAPHIES



BIOGRAPHIES

KEYNOTE SPEAKERS

Secretary, U.S. Department of Homeland Security



Janet Napolitano

Ms. Janet Napolitano is the third Secretary of the Department of Homeland Security. Prior to becoming Secretary, Ms. Napolitano was in her second term as governor of Arizona and was recognized as a national leader on homeland security, border security, and immigration. She was the first woman to chair the National Governors Association and was named one of the top five governors in the country by Time Magazine. She was also the first female Attorney General of Arizona and served as U.S. Attorney for the District of Arizona.

Ms. Napolitano is responsible for leading our nation's collective efforts to secure our country from the threats we face, from terrorism to natural disasters. To counter the threat of terrorism, she has forged new partnerships with international allies and expanded information-sharing with federal, state, and local law enforcement, building a collaborative effort to detect and disrupt threats early on. She has initiated a new, more strategic course to strengthen security along our southwest border, deploying additional personnel and advanced technology, while working closely with Mexico to combat violent international drug cartels. Ms. Napolitano also has forged a smart and effective approach to enforcing our immigration laws and prioritizing public safety while targeting criminal aliens and aggressively pursuing employers that knowingly take advantage of illegal labor.

She has strengthened the nation's ability to prepare for, respond to, and recover from disasters by cutting through red tape and expediting decision-making along the Gulf Coast, providing new resources to build resilient communities and bolster their response capabilities.

Ms. Napolitano graduated from Santa Clara University, where she won a Truman Scholarship and was the university's first female valedictorian. She received her law degree (JD) from the University of Virginia School of Law. Before entering public office, Napolitano served as a clerk for Judge Mary M. Schroeder on the U.S. Court of Appeals for the Ninth Circuit and practiced law in Phoenix at the firm of Lewis and Roca.

Lieutenant General (Retired), United States Army



Lt. General Russel Honoré

Lieutenant General Honoré is a career soldier whose lengthy military career has taken him around the world, from Korea to Germany and the entire United States. He served as the commanding general of Joint Task Force Katrina following the devastating hurricane that struck New Orleans in 2005. While in charge of the entire Army east of the Mississippi, he brought leadership to New Orleans and is credited with bringing the city back under control, creating a more positive atmosphere, and starting the long process of putting it back together. Lt. General Honoré proved that by taking charge and creating a culture of preparedness, whether as an individual, a group, a city, or an entire country, unexpected crises can be managed and their impacts minimized.

He has many awards and distinctions, including the Defense Distinguished Service Medal, the Defense Superior Service Medal, the Legion of Merit, and a Bronze Star. Since his retirement from the Army, Lt. General Honoré has brought the lessons of Katrina to organizations around the country and has published a book on preparedness titled *Survival: How a Culture of Preparedness Can Save You and Your Family from Disasters*. An expert on preparedness and responding to catastrophe, he offers insights into protecting people and organizations, outlining the principles necessary to lead through unexpected and uncontrollable crises.

Lieutenant General Honoré is a native of Lakeland, Louisiana. He was commissioned a Second Lieutenant of Infantry and awarded a BS in vocational agriculture upon graduation from Southern University and A&M

College in 1971. He holds an MA in human resources from Troy State University, as well as an honorary doctorate in public administration from Southern University and A&M College, and honorary doctorates in laws and humane letters from Stillman College.

President, Berntsen Group



Gary Berntsen

Mr. Gary Berntsen is a recently retired 23-year veteran of CIA's Clandestine Service and is author of the best-selling book *Jawbreaker: The Attack on Bin Laden and Al-Qaeda*. He has also published a novel, *The Walk-in*, and a policy book titled *Human Intelligence Counterterrorism and National Leadership*. As one of CIA's most decorated officers, Mr. Berntsen led many of the CIA's most important counterterrorist deployments and served as a senior CIA field commander for a decade around the globe. Selected to lead CIA's deployment after the East Africa bombings and then again to lead in Afghanistan following the September 11, 2001, attacks, he was at the forefront in confronting Al-Qaeda and the Taliban and was a pivotal figure in the United States victory in Afghanistan.

At the core of his success was the ability to lead under adverse conditions and inspire the men and women under his command. In 2007–2008, Mr. Berntsen returned to Afghanistan as civilian advisor to the 173rd Airborne Brigade Combat Team and worked against militant improvised explosive device networks.

Mr. Berntsen was the recipient of CIA's Distinguished Intelligence Medal and the Intelligence Star award in 1998 and 2004, respectively. In 2006 Intelcon, a private sector supporter of the intelligence community, awarded him the first William F. Buckley Award for Leadership. As a renowned national security and counterterrorism expert, Mr. Berntsen has completed over 200 television and radio interviews. He frequently appears as a national security expert on Fox News and CNN. Since 2008, Mr. Berntsen has worked as both a lecturer and a defense consultant and has served as president of Berntsen Group. His knowledge of intelligence, counterterrorism, and foreign affairs provides for an informed and dynamic presentation in our ongoing struggle with jihadist terrorists.

Deputy Under Secretary, Science & Technology Directorate, U.S. Department of Homeland Security



Bradley L. Buswell

Mr. Brad Buswell 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 of government relations for GE's Global Research Division. He joined the Department of Homeland Security Science &

Technology Directorate in October 2006. Mr. Buswell is a native of Durango, Colorado, and a graduate of the United States Naval Academy. He holds a BS in systems engineering from the U.S. Naval Academy and an MBA from The George Washington University.

BIOGRAPHIES

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



Tara O'Toole, MD

Dr. O'Toole was confirmed in November 2009 as the Under Secretary for Science and Technology at the Department of Homeland Security. From 2003 to 2009, Dr. O'Toole was the CEO and director of the Center for Biosecurity at the University of Pittsburgh Medical Center (UPMC) and a professor of medicine and of public health at the University of Pittsburgh. Prior to founding the UPMC Center in 2003, Dr. O'Toole was one of the original members of the Johns Hopkins Center for Civilian Biodefense Strategies and served as its director from 2001 to 2003.

Dr. O'Toole is internationally known for her work on biosecurity and on health and safety issues related to the U.S. nuclear weapons complex. From 1993 to 1997, she served as Assistant Secretary of Energy for Environment Safety and Health, overseeing the health and safety of the approximately 100,000 workers in the U.S. nuclear weapons complex and Department of Energy (DOE) laboratories. She developed the first overall management and safety plan for dealing with the highly enriched uranium, plutonium, spent fuel, and radioactive waste left in place when nuclear weapons production was stopped in the early 1990s. She ran the multi-agency, multimillion dollar task force that oversaw the government's investigations into human radiation experiments conducted during the Cold War. And she led the U.S. delegation to Russia to establish the U.S./Russia cooperative effort to study radiation exposure and environmental hazards of the Russian nuclear weapons complex.

Prior to her work at DOE, Dr. O'Toole was a senior analyst at the Congressional Office of Technology Assessment (OTA) and also served as a consultant to industry and government. She has served on numerous government and expert advisory committees dealing with biodefense and has published widely in the biodefense field. She is coeditor-in-chief of the journal *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*. She was also a principal author and producer of biosecurity exercises *Dark Winter* and *Atlantic Storm* in 2001 and 2005, respectively.

Dr. O'Toole has a bachelor's degree from Vassar College, an MD from the George Washington University, and an MPH from Johns Hopkins University. She completed internal medicine residency training at Yale and a fellowship in occupational and environmental medicine at Johns Hopkins University. She is board certified in internal medicine and in occupational and environmental health.

President, Virginia Polytechnic Institute and State University



Charles W. Steger, PhD, FAIA

Dr. Charles Steger is the 15th president of Virginia Tech, the university where he earned his bachelor's and master's degrees in architecture and a PhD in engineering. After working as a professional architect and planner, Dr. Steger's passion for teaching led him to return to Virginia Tech to teach in the College of Architecture and Urban Studies. He subsequently served as dean of that college and vice president for development and university relations before being named president in 2000.

Under Dr. Steger's leadership, the university has charted a course to expand its research enterprise and establish Virginia Tech among the nation's top research universities. Among his most recent publications are book chapters on the topics of the business of education and the university presidency. Dr. Steger is a Fellow in the American Institute of Architects. The New Century Technology Council awarded him its 2004 Compass Award for visionary thinking and leadership in the field of information technology. He recently finished a term as chairman of the Virginia Council of Presidents and has been appointed by four governors of Virginia to serve on various boards dealing with higher education, homeland security, information

technology, and international education. In addition, he serves on the boards of a number of public and private organizations, including the Senior Advisory Group of the Northern Virginia Technology Council Board of Directors. He is also president of the Council of Presidents of the Southeastern Universities Research Association (SURA). Dr. Steger is the 2009 recipient of the Chief Executive Leadership Award conferred by the Council for the Advancement and Support of Education (CASE), District III, for outstanding leadership and service in support of education.

Former Governor of New York State



Honorable George E. Pataki, JD

Governor George E. Pataki is counsel with the law firm Chadbourne and Parke, focusing on their environmental, energy, and infrastructure practice areas. He also is the founder and chairman of Pataki-Cahill Group, a consulting firm concentrating on climate change, energy, and the environment. Prior to joining Chadbourne & Parke, he served three terms as governor of New York State, from 1995 through 2006. Widely known for his protection of over one million acres of open space, Gov. Pataki balanced his pro-business philosophy with cutting-edge policies in the renewable energy and environmental fields. He led the establishment of the first mandatory cap and trade carbon initiative (Regional Greenhouse Gas Initiative - RGGI) and implemented the first integrated strategy for creating clean, renewable transportation networks utilizing alternative fuels, including tax and other incentives for both consumers and manufacturers, grants for alternative retail fuel distribution systems, and the exemption of renewable fuels from all state and local taxes.

Gov. Pataki established New York's leading brownfield program spurring development in cities across the state by creating a \$200 million fund to support the redevelopment of contaminated sites and instituting a \$135 million tax credit program to encourage public-private investment in brownfields. He instituted the nation's first green buildings tax credit incentive program, which led to the building of the first green high-rise office and residential buildings in the United States. In addition, Gov. Pataki worked to create public-private partnerships for clean energy generation in New York State, resulting in one of the largest industrial solar power arrays in the U.S., two cellulosic ethanol pilot production facilities, and one of the largest wind-power arrays in the eastern United States.

Among numerous other awards, Business Week named Governor Pataki one of the top 20 "individuals who stand out for their efforts to cut gases that cause global warming" in the world. He has served as co-chairman of the Council on Foreign Relations Independent Task Force on Climate Change and as United States public delegate to the United Nations General Assembly.

He is also a director of the National Audubon Society and the New York Historical Society.

A graduate of both Yale University (1967) and Columbia Law School (1970), he today resides in Garrison, New York.

BIOGRAPHIES

Director of Research, Science & Technology Directorate U.S. Department of Homeland Security



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 of 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 BS, MS, and PhD degrees in physics from the University of California and an honorary degree in nuclear engineering from the University of Missouri-Rolla.

Senior Director, Preparedness Policy White House National Security Staff



Brian Kamoie, JD

Mr. Brian Kamoie is senior director for preparedness policy on the White House national security staff. In this role he leads the development of national policy related to all-hazards preparedness, individual and community resilience, domestic critical infrastructure protection and resilience, preparedness grants, and national security professional development. Mr. Kamoie previously served as deputy assistant secretary for preparedness and response and director of the Office of Policy, Strategic Planning & Communications at the U.S. Department of Health and Human Services (HHS).

While at HHS, he led in the development and implementation of key national policies, including the National Response Plan and National Incident Management System, the National Strategy for Pandemic Influenza, the Pandemic and All-Hazards Preparedness Act, the Public Readiness and Emergency Preparedness Act and a number of Homeland Security presidential directives. Mr. Kamoie also played key leadership roles in the department's response to major incidents (e.g., hurricanes, floods, and the 2009 H1N1 influenza pandemic) and national exercises (Top Officials (TOPOFF) 3 and 4).

Prior to his work at HHS, Mr. Kamoie was an associate professor of health policy and health services management and leadership at The George Washington University School of Public Health and Health Services, where he taught classes in public health law, health services law, and homeland security and public health policy. He has published many scholarly articles on these topics. He is a 2009 senior fellow of The George Washington University's Homeland Security Policy Institute and continues to serve on the adjunct faculty as a professorial lecturer in the School of Public Health and Health Services.

Mr. Kamoie received his bachelor's degree in policy studies and political science from Dickinson College and his law degree and master's degree in public health from The George Washington University, where he served as managing editor of *The George Washington Law Review*.

President, Stephen E. Flynn Associates LLC



Stephen Flynn, PhD

In January 2010, Dr. Stephen Flynn became the sixth president of the Center for National Policy (CNP). He is also the principal for Stephen E. Flynn Associates LLC, where he provides independent advisory services on improving enterprise resiliency and critical infrastructure protection, and transportation and maritime security. Prior to September 11, 2001, Dr. Flynn served as an expert advisor to the U.S. Commission on National Security, and following the 9/11 attacks he was the principal advisor to the bipartisan Congressional Port Security Caucus and advised the Bush administration on maritime and homeland security issues. Following the election of President Barack

Obama, he served as the lead policy advisor on homeland security for the presidential transition team. He currently serves as a member of the bipartisan National Security Preparedness Group.

A 1982 graduate of the U.S. Coast Guard Academy, Dr. Flynn served in the Coast Guard on active duty for 20 years, including two tours as commanding officer at sea. He received several professional awards, including the Legion of Merit, and retired at the rank of Commander. As a Coast Guard officer, he served in the White House Military Office during the George H. W. Bush administration and as a director for global issues on the National Security Council staff during the Clinton administration.

Dr. Flynn is the author of the critically acclaimed *The Edge of Disaster: Rebuilding a Resilient Nation* (2007) and the national bestseller *America the Vulnerable* (2004). Excerpts of his books have been featured in *Time*, as the cover story for *U.S. News & World Report*, and as the subject of two CNN documentaries. He is a frequent media commentator and has appeared on numerous television and radio shows. Since 9/11 he has also provided testimony on 22 occasions on Capitol Hill. Dr. Flynn holds a master of arts in law and diplomacy degree, as well as a PhD in international politics, from the Fletcher School of Law and Diplomacy, Tufts University.

OFFICE OF UNIVERSITY PROGRAMS STAFF



Matthew Clark, PhD

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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.

BIOGRAPHIES



Desiree Linson

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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, Alabama.

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BIOGRAPHIES

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 the DHS Science and Technology Directorate, 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. 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 served 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 Science and Technology Directorate. Until merging into the new department in March 2003, Dr. George was the program manager of the Chemical and 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/BEHAVIORAL SCIENCES DIVISION



Sharla P. Rausch, PhD

Dr. Sharla Rausch is the first director of the Human Factors/Behavioral Sciences Division within the DHS Science and Technology Directorate. 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 in 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 the DHS Science and Technology Directorate'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 (SEMMP).

BIOGRAPHIES

DHS SCIENCE & TECHNOLOGY DIRECTORATE DIVISION RESEARCH LEADS

EXPLOSIVES DIVISION



Douglas C. Bauer, PhD, JD

Dr. Douglas Bauer is the program executive for basic research within the Explosives Division of the DHS Science and Technology Directorate. 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.

INFRASTRUCTURE & GEOPHYSICAL DIVISION



Mary Ellen Hynes, PhD

Dr. Mary Ellen Hynes is the director of research for the Infrastructure and Geophysical Division within the Science and Technology Directorate (S&T) at the Department of Homeland Security. Before joining S&T in December of 2006, Dr. Hynes spent 30 years as a researcher, rising to the position of technical director at the US Army Engineer R&D Center (ERDC). Her research focused on extreme loading of critical infrastructure. 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 from the University of California at Berkeley.

COMMAND, CONTROL & INTEROPERABILITY DIVISION



Joseph Kielman, PhD

Dr. Joseph Kielman is the basic/futures research lead for the Command, Control and Interoperability (CCI) Division and also manages the CCI Center of Excellence for the Office of University Programs. For the CCI Division, he created, established, and manages the National Visualization and Analytics Center (NVAC), the five-year joint NSF/DHS program on Foundations of Data and Visual Analytics (or FODAVA), the Precision Information Environments (PIE) and Transnational Islamic Activism and Radicalization (TIARA) programs, and multi-year formal research collaborations in analytics with Germany, the United Kingdom, and Canada, among other activities. Prior to joining DHS S&T in 2003, he worked for 20 years at the FBI. There he served as chief of the Advanced Technology Group for the engineering section, chief of research and development in the Technical Services Division, and chief scientist and chief architect for the Information Resources Division. Dr. Kielman worked for the American Society for Testing and Materials, MCI Communications, and the Department of Health and Human Services prior to joining the FBI. Among other interagency assignments, he has chaired two subcommittees for the White House Office of Science and Technology Policy National Science and Technology Council as well as serving on four advisory committees for the Department of Energy Pacific Northwest National Laboratory. Dr. Kielman has an undergraduate degree in physics and graduate degrees in biophysics and did his postdoctoral work in genetics. He was awarded the Presidential Rank of Meritorious Senior Professional in 2006.

HUMAN FACTORS/BEHAVIORAL SCIENCES DIVISION



Richard Lempert, PhD, JD

Dr. Richard O. Lempert is the research deputy and chief scientist in the Human Factors/Behavioral Science Division of the Department of Homeland Security's Science and Technology Directorate. Before coming to DHS, he 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.

Dr. 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*. 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 deputy director and research lead in the Borders/Maritime Security Division of the DHS Science & Technology (S&T) Directorate. Ms. Lin oversees the division's research strategy and program development, including integrating the department's centers of excellence programs into the division's mission. In 2007, Ms. Lin was a Capitol Hill Fellow serving on the House Committee on Homeland Security, and in 2005, she co-chaired the Gordon Research Conference titled *Detecting Illicit Substances: Explosives and Drugs*. She has been with DHS S&T since February 2003 and served as the first Border & Transportation Security Portfolio Manager of the

Directorate's Programs, Plans, and Budget Division.

Ms. Lin previously served as acting executive director of the U.S. Customs Service's Applied Technology Division. She also served as director of the Research Development and Evaluation Branch, where her responsibilities included developing technical requirements and specifications as well as research, development, and evaluation of advanced technology equipment and systems. Prior to joining the Customs Service, she worked for more than 20 years as a program and technical manager within the Department of Navy.

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

BIOGRAPHIES

CHEMICAL & BIOLOGICAL DIVISION



Segaran P. Pillai, PhD

Dr. Segaran P. Pillai currently serves as the chief medical and scientific officer in the Chemical and Biological Division in the Science and Technology (S&T) Directorate of the U.S. Department of Homeland Security (DHS). In this capacity, he serves as an advisor for all DHS S&T initiatives to deter, detect, or mitigate a biological attack on the nation as well as public-health-related issues. Prior to this position, Dr. Pillai served as the director of the Florida Department of Health, State Public Health Laboratory and as the clinical services director for the Miami-Dade County Health Department. He had previously been an assistant professor of research at the University of Kansas.

Trained as a molecular biologist, Dr. Pillai played a critical role as one of the lead investigators during the 2001 anthrax attack. While in Florida, he was instrumental in developing a model public health program that was recognized by CDC. He also served as a voluntary assistant professor of medicine at the University of Miami School of Medicine and an associate professor and advisor for the School of Public Health, Florida International University.

Dr. Pillai earned a bachelor's degree with honors in microbiology and a master's degree with honors in medical physiology from Pittsburgh State University. He received his PhD in molecular genetics and biochemistry at the University of Kansas.

CENTERS OF EXCELLENCE DIRECTORS

NATIONAL TRANSPORTATION SECURITY CENTER OF EXCELLENCE (NTSCOE)

University of Connecticut



Michael Accorsi, PhD

Dr. Michael Accorsi is a professor of civil and environmental engineering and is director of the Center for Resilient Transportation Infrastructure, the DHS Center of Excellence at the University of Connecticut. Prior to his appointment as director, Dr. Accorsi served as department head of Civil and Environmental Engineering from 2006 to 2009. Dr. Accorsi received his PhD from Northwestern University in 1985 with a concentration in the field of theoretical and applied mechanics. He was inducted as a member of the Connecticut Academy of Science and Engineering in 2008. His areas of expertise include constitutive modeling, computational mechanics, and finite element methods.

CENTER FOR MARITIME, ISLAND AND REMOTE AND EXTREME ENVIRONMENT SECURITY (MIREES) – CENTER FOR SECURE AND RESILIENT MARITIME COMMERCE AND COASTAL ENVIRONMENTS (CSR) Stevens Institute of Technology



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 CENTER FOR FOREIGN ANIMAL AND ZOO NOTIC 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 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 in 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, particularly agricultural bio-security at state and national levels. Dr. Clarke is director emeritus of the Texas Agricultural Experiment Station and has authored more than 100 scientific publications. 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 initiated the modern development of aircrew and airbase protection against CBW weapons. Dr. Clarke received his PhD from the University of Washington and his DVM from A&M College of Texas.

BIOGRAPHIES

NATIONAL TRANSPORTATION SECURITY CENTER OF EXCELLENCE (NTSCOE)

Mineta Transportation Institute, San José 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 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 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 to the California High Speed Rail Authority Board. He is also chair of 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.

THE COMMAND, CONTROL AND INTEROPERABILITY CENTER OF EXCELLENCE (CCI) – VISUAL ANALYTICS FOR COMMAND, CONTROL AND INTEROPERABILITY CENTER (VACCINE)

Purdue University



David S. Ebert, PhD

Dr. David Ebert is a professor in the School of Electrical and Computer Engineering at Purdue University, as well as a University Faculty Scholar, a Fellow of the IEEE, and director of the Visual Analytics for Command, Control and Interoperability Center (VACCINE), the visualization science team of the Department of Homeland Security's Command, Control and Interoperability Center of Excellence. Dr. Ebert performs research in novel visualization techniques, visual analytics, volume rendering, information visualization, perceptually-based visualization, illustrative visualization, mobile graphics and 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 on the ACM SIGGRAPH executive committee, serving as editor-in-chief of *IEEE Transactions on Visualization and Computer Graphics*, serving as a member of the IEEE Computer Society's publications board, serving on the IEEE Computer Society Board of Governors, and successfully managing a large program of external funding to develop more effective methods for visually communicating information.

NATIONAL CENTER FOR THE STUDY OF PREPAREDNESS AND CATASTROPHIC EVENT REPOSE (PACER) Johns Hopkins University



Lynn R. Goldman, MD

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.

NATIONAL TRANSPORTATION SECURITY CENTER OF EXCELLENCE (NTSCOE) Rutgers University



Michael Greenberg, PhD

Dr. Michael Greenberg is the director of both the Center for Transportation Safety, Security, and Risk and the National Center for Neighborhood and Brownfields Redevelopment of Rutgers University. He is also a professor and associate dean of the faculty of the Edward J. Bloustein School of Planning and Public Policy. Dr. Greenberg has authored numerous books on environmental health and neighborhood redevelopment policies and has contributed more than 560 publications to more than 100 science, social science and policy journals. He has been a member of National Research Council Committees that focus on waste management, such as the destruction of the U.S. chemical weapons stockpile and nuclear weapons. He has received awards for research from the U.S. EPA, the Society for Professional Journalists, the Public Health Association, the Association of American Geographers, and the Society for Risk Analysis. Dr. Greenberg serves as editor-in-chief for Risk Analysis and as associate editor for environmental health for the *American Journal of Public Health*.

BIOGRAPHIES

CENTER FOR ADVANCING MICROBIAL RISK ASSESSMENT (CAMRA) Drexel University



Charles N. Haas, PhD

Dr. Charles N. Haas is the co-director of CAMRA as well as 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. For nearly 25 years, Dr. Haas has specialized in the assessment of risk from pathogens and the control of human exposure to pathogenic microorganisms. Through his work with CAMRA, Dr. Haas is currently exploring the assessment of risks from exposures to deliberately released agents (e.g., anthrax); microbiological risks associated with diverse exposures, such as pathogens in drinking water and recreational waters, biosolids (sludges), and food (including *E. coli* O157:H7, *Campylobacter* and *Listeria*); risks from personal household exposures, and prevention using anti-microbial agents; and development of dose-response models for chemical mixtures of agents. Professor Haas has published more than 150 papers in peer-reviewed journals as well as books and other major works. He received a BS in biology and an MS in environmental engineering from the Illinois Institute of Technology and a PhD in environmental engineering from the University of Illinois at Urbana-Champaign.

NATIONAL TRANSPORTATION SECURITY CENTER OF EXCELLENCE (NTSCOE) University of Arkansas



Kevin Hall, PhD

Dr. Kevin Hall is the executive director of the Mack-Blackwell Rural Transportation Center at the University of Arkansas. He 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 primary teaching and research interests include pavement design, materials, construction, and rehabilitation. Currently, he serves on eight committees, task groups, and panels through the Transportation Research Board, and numerous committees with the American Society for Testing and Materials and in the highway construction industry. Dr. Hall has published over 75 journal articles and given over 200 presentations in the highway engineering and civil engineering arenas. He has been recognized as the Outstanding Teacher in the Department of Civil Engineering at the University of Arkansas two times and the Outstanding Researcher a total of five times; he has also received the Arkansas Alumni Association's Distinguished Faculty Achievement Award for Teaching and Research. 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 CENTER OF EXCELLENCE (NTSCOE)

Long Island University



Vincent E. Henry, PhD

Dr. Vincent 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. As Commanding Officer of the Police Commissioner's Office of Management Analysis and Planning's Special Projects Unit from 1991 to 2000, Dr. Henry was a member of the Police Commissioner's Executive Staff and played an integral role in developing and implementing policy initiatives throughout the agency. 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. He earned BA and MS degrees from Long Island University, a Master of Philosophy degree from the City University of New York, and a PhD in criminal justice from the City University of New York.

CENTER FOR RISK AND ECONOMIC ANALYSIS OF TERRORISM EVENTS (CREATE)

University of Southern California



Stephen C. Hora, DBA

Dr. Stephen C. Hora is the director of the University of Southern California's (USC) Center for Risk and Economic Analysis of Terrorism Events (CREATE). He is also a research professor of industrial and systems engineering at the Viterbi School of Engineering, and a research professor of public policy and management at the School of Policy, Planning, and Development. Before his move to USC, Dr. Hora was a professor of management science and statistics at University of Hawaii-Hilo, where he also served as interim vice chancellor for academic affairs from 2005 to 2007. He is an expert in decision and risk analyses with particular interest in the use of subject matter experts, statistical modeling, and the analysis of technological, natural, and environmental hazards. His research has focused on the analysis of risks from technological hazards and spans a range from practical applications to the creation of theoretical foundations. His projects have included, among others, the NUREG-1150 nuclear power generating risk study; the performance assessment for the Waste Isolation Pilot Plant (Carlsbad radioactive waste repository); the safety study for the Yucca Mountain commercial radioactive waste repository; and an analysis of shuttle safety prior to the Challenger loss. Dr. Hora earned both his Doctorate in Business Administration (DBA) and his bachelor's degree from USC.

BIOGRAPHIES

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 AND 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 has received the Food and Drug Administration Commissioner's Special Citation, "for leadership in fostering effective partnership in international food safety capacity building programs to improve the safety of

food imported into the U.S. and consumed globally." 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. 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 CENTER OF EXCELLENCE (NTSCOE)

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.

BIOGRAPHIES

NATIONAL CENTER FOR BORDER SECURITY AND IMMIGRATION – BORDERS (NCBSI – BORDERS) **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 LOCATION OF EXPLOSIVES-RELATED THREATS (ALERT) **University of Rhode Island**

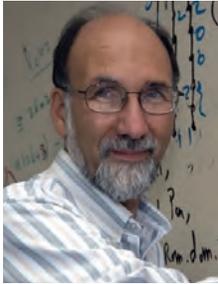


Jimmie Oxley, PhD

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 Location 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.

THE COMMAND, CONTROL AND INTEROPERABILITY CENTER OF EXCELLENCE (CCI) – COMMAND, CONTROL AND INTEROPERABILITY CENTER FOR ADVANCED DATA ANALYSIS (CCICADA) Rutgers University



Fred Roberts, PhD

Dr. Fred S. Roberts is a professor of mathematics at Rutgers University and director of the Department of Homeland Security Center of Excellence CCICADA, the Command, Control, and Interoperability Center for Advanced Data Analysis. In addition, he has served as director of the Center for Discrete Mathematics and Theoretical Computer Science (DIMACS) since 1996, and director of the Department of Homeland Security Center of Excellence on Dynamic Data Analysis (DyDAn) since 2006. Dr. Roberts' major research interests are mathematical modeling in the social, behavioral, biological, and environmental sciences; modeling problems in communications, transportation, and homeland security; graph theory and combinatorics and their applications; measurement theory; utility, decision-making, and social choice; and operations research. He has authored four books, published more than 160 scientific articles, and is the editor of eighteen books covering such varied topics as energy modeling, reliability of computer and communication networks, mathematical psychology, computational biology, and precollege discrete mathematics.

In recent years, Dr. Roberts has co-chaired the New Jersey Universities Homeland Security Research Consortium and has served in numerous other homeland security and emergency preparedness efforts. He received his bachelor's degree in mathematics (summa cum laude) from Dartmouth College and his MS and PhD degrees 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.

BIOGRAPHIES

NATIONAL CENTER FOR BORDER SECURITY AND IMMIGRATION (NCBSI) University of Texas – El Paso



Eunice Santos, PhD

Dr. Eunice E. Santos is the director for the National Center for Border Security and Immigration at the University of Texas, El Paso (UTEP), where she is also a professor and chair of the Department of Computer Science. Dr. Santos joined UTEP in September 2009 following an appointment as a senior research fellow at the Center for Technology and National Security Policy in the Department of Defense. She had previously served on the faculty of Virginia Tech and Lehigh University. Dr. Santos is a leading expert and researcher in the areas of large-scale distributed processing, computational modeling, complex adaptive systems, and human modeling with applications to the biological, physical, and social sciences. She has received numerous awards, including a National Science Foundation Career Award, the Spira Award for Excellence in Teaching, and the Robinson Faculty Award. Dr. Santos earned her PhD in computer science from the University of California, Berkeley.

AWARENESS AND LOCATION OF EXPLOSIVES-RELATED THREATS (ALERT) Northeastern University



Michael 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 Center of Excellence, 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 MA and PhD degrees from the University of Maryland's Department of Government and Politics.

NATURAL DISASTERS, COASTAL INFRASTRUCTURE AND EMERGENCY MANAGEMENT – DIEM (NDCIEM – DIEM) **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 a 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. Dr. Smith holds a PhD in urban and regional planning, specializing in environmental planning and policy, environmental dispute resolution and hazard mitigation, and BS and MS degrees in sociology, all from Texas A&M University.

NATIONAL TRANSPORTATION SECURITY CENTER OF EXCELLENCE (NTSCOE) **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.

BIOGRAPHIES

NATURAL DISASTERS, COASTAL INFRASTRUCTURE AND EMERGENCY MANAGEMENT (NDCIEM)

Jackson State University



Robert W. Whalin, PhD

Dr. Robert Whalin is a professor of civil engineering and associate dean of the College of Science, Engineering and Technology at Jackson State University, and is also 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 engaged in developing educational curricula focused on natural disasters that will serve as a firm foundation for the next generation of highly educated and innovative researchers to help solve existing and future DHS challenges relating to natural disasters in coastal areas.

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 BS and MS degrees in physics at the University of Kentucky and the University of Illinois – Urbana, respectively, and a PhD from Texas A&M University.

CENTER FOR MARITIME, ISLAND AND REMOTE AND EXTREME ENVIRONMENT SECURITY (MIREES) – NATIONAL CENTER FOR ISLAND, MARITIME, AND EXTREME ENVIRONMENT SECURITY (CIMES)

University 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 the National Center for Island, Maritime, and Extreme Environment Security (CIMES). 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.

PLENARY PANEL MEMBERS

PLENARY 1

Deputy Commissioner (Acting), U.S. Customs and Border Protection



David V. Aguilar

On January 3, 2010, Mr. David V. Aguilar was named Acting Deputy Commissioner of U.S. Customs and Border Protection (CBP) following the retirement of Acting Commissioner Jayson P. Ahern. In that position, he will serve as chief operating officer, overseeing the daily operations of CBP's 57,000-employee workforce and ensuring that CBP's mission of protecting our nation's borders from terrorists and terrorist weapons is carried out effectively in partnership and unison with our country's other federal, state, local, and foreign partners. Keeping out illegal drugs and illegal aliens, securing and facilitating legitimate global trade and travel, and protecting our food supply and agriculture industry from pests and disease will also be a priority. Mr. Aguilar was previously the chief of the U.S. Border Patrol, a position he took after serving as chief patrol agent of the Tucson Sector. In 2008, President Bush conferred the rank of Distinguished Executive on Mr. Aguilar in recognition of his extraordinary leadership and management contributions to the U.S. government. Mr. Aguilar received an associate's degree in accounting from Laredo Community College and attended Laredo State University and University of Texas at Arlington. He is a graduate of the John F. Kennedy School of Government's Harvard Senior Executive Fellows program.

Commandant, U.S. Coast Guard



ADM Thad W. Allen

Admiral Thad W. Allen assumed the duties of the 23rd Commandant of the U.S. Coast Guard in May 2006. To many, he is considered "the face of the Coast Guard." He leads the largest component of the Department of Homeland Security, comprising approximately 40,150 men and women on active duty, 7000 civilians, 8000 reservists, and 34,000 volunteer auxiliaries. He is known for his leadership in times of crises and his tremendous ability to effect change. In his 38 years of service, Admiral Allen has held operational command both at sea and ashore, conducting missions to support the maritime safety, security, and environmental stewardship interests of the nation. Today Admiral Allen is leading the Coast Guard through significant modernization to better organize, train, equip, and deploy our men and women to meet the challenges of the 21st century. Admiral Allen graduated from the U.S. Coast Guard Academy and earned an MPA from the George Washington University. He also holds an MS degree from MIT's Sloan School of Management and an honorary doctorate of science from the National Graduate School. Among his many personal awards, he was the first recipient of the Homeland Security Distinguished Service Medal and has been awarded three Coast Guard Distinguished Service Medals and the Legion of Merit.

BIOGRAPHIES

Under Secretary for the National Protection and Programs Directorate, U.S. Department of Homeland Security



Rand Beers

Mr. Rand Beers was appointed by President Barack Obama to serve as the under secretary for the National Protection and Programs Directorate (NPPD) at the U.S. Department of Homeland Security. In that capacity, he oversees the coordinated operational and policy functions of the directorate's subcomponents—Cybersecurity and Communications (CS&C), Infrastructure Protection (IP), Risk Management and Analysis (RMA), and the United States Visitor and Immigrant Status Indicator Technology (US-VISIT) program. Mr. Beers has served as counselor to Secretary Napolitano since January 21, 2009 and will continue in that capacity while directing the activities of NPPD. Before his appointment, he was the co-leader of the Department of Homeland Security Transition Team for the incoming Obama Administration. Mr. Beers served in Vietnam and the Foreign Service and has spent most of his career working for the Department of State. He holds a bachelor's degree from Dartmouth College and a master's degree from the University of Michigan.

Administrator, Federal Emergency Management Agency



W. Craig Fugate

Mr. W. Craig Fugate began serving as administrator of the Federal Emergency Management Agency (FEMA) in May 2009. Prior to coming to FEMA, Mr. Fugate was director of the Florida Division of Emergency Management (FDEM). In that role since 2001, he managed 138 full-time staff and a budget of \$745 million. His agency coordinated disaster response, recovery, preparedness, and mitigation efforts with each of the state's 67 counties and local governments.

Mr. Fugate began his emergency management career as a volunteer firefighter, emergency paramedic, and finally as a lieutenant with the Alachua County Fire Rescue. From there, he was promoted to the emergency manager for Alachua County and then to the bureau chief for preparedness and response for the FDEM. During his years at FDEM, Mr. Fugate served as the state coordinating officer in Florida for 11 presidentially declared disasters and managed \$4.5 billion in federal disaster assistance. He managed the largest federal disaster response in Florida history as four major hurricanes impacted the state in quick succession in 2004. In recent years, Mr. Fugate has been focusing FDEM on preparedness and planning for the future.

Assistant Administrator/Chief Technology Officer (CTO), Transportation Security Administration



Robin E. Kane

Mr. Robin E. Kane is the assistant administrator for the Transportation Security Administration's (TSA) Office of Security Technology. In this role, he serves as the agency's chief technology officer overseeing the implementation and development of security technologies across several modes of transportation. His duties include development, test and evaluation, acquisition and deployment, and the maintenance of all TSA security technologies and systems. Mr. Kane joined TSA in 2005 as a branch chief within TSA's Office of Budget and Performance, where he managed the planning, programming, budgeting, and execution of all technology programs. He has also served as the branch chief for law enforcement programs and all support programs. Prior to TSA, Mr. Kane served 20 years in the Coast Guard. He was the homeland security program analyst in the Office of Budget and Programs subsequent to 9/11 and reviewed a number of new and expanded programs requiring substantial resource, organizational, and policy shifts. He served in acquisition programs as technical director and modeling and simulation manager. Mr. Kane has a BS in ocean engineering from the Coast Guard Academy, an MS in information systems from George Mason University, and a Naval War College Diploma.

PLENARY 2 – 5

Director, Office of University Programs, U.S. Department of Homeland Security



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. 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. 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.

Deputy Director of Research, Science & Technology Directorate, U.S. Department of Homeland Security



Rolf Dietrich

As deputy director of research for DHS S&T, Mr. Rolf Dietrich oversees the integration of the basic research portfolios throughout the directorate and is chair of the Research Council. He also exercises line management over the Office of National Laboratories, the Office of University Programs, and the Program Executive Office (C-IED). Mr. Dietrich spent 20 years in the Navy, culminating in command of a nuclear submarine; 12 years with SAIC; and has been with DHS S&T since January 2007. A member of Sigma Xi, Mr. Dietrich holds a BS in mathematics from the Naval Academy, MS degrees in mechanical engineering and ocean engineering from MIT, and an MBA from the University of

Maryland. He also holds a professional engineer license in Virginia.

Director, Office of Policy and Program Analysis, Federal Emergency Management Agency



David Kaufman

Mr. David J. Kaufman is the director of FEMA's Office of Policy and Program Analysis. In this position, he is responsible for providing leadership, analysis, coordination, and decision-making support to the FEMA administrator on a wide range of agency policies, plans, programs, and key initiatives. Mr. Kaufman has extensive experience with homeland security and disaster preparedness issues. He has been a member of the faculty at the Naval Postgraduate School's Center for Homeland Defense and Security, where he has taught in the center's graduate- and executive-level education programs, and he has previously served in several senior positions in the U.S. Department of Homeland Security

and in FEMA. Mr. Kaufman left government service in 2008 to become Safety and Security Director for CNA, a non-profit think-tank where he worked on a range of homeland security issues including community engagement, risk management, and catastrophic planning. Mr. Kaufman holds a Master of Public Policy degree from the University of Michigan; a BA in international relations, political science, and history from the University of Wisconsin-Madison; and is a graduate of the Center for Homeland Defense and Security's Executive Leaders Program.

BIOGRAPHIES

Program Manager, Human Factors/Behavioral Sciences Division, U.S. Department of Homeland Security



Ji Sun Lee, JD

Ms. Ji Sun Lee is the program manager for the Technology Acceptance and Integration Program and the program lead for the Community Preparedness and Resilience Program within the Human Factors/Behavioral Sciences Division, Science and Technology Directorate of the DHS. The purpose of the Technology Acceptance and Integration Program is to provide program managers throughout the DHS community with insight into potential issues and problems that may be related to community perception and acceptance of a technology. The program strives to develop innovative methods in collecting and utilizing public perception data, and integrating that data into the technology life cycle. As director of the Community Preparedness and Resilience Program, Ms. Lee works to develop a research agenda that is responsive to the DHS component agencies as well as to tribal, state, and local agencies as they assist communities in preparing for, responding to, and recovering from all hazards. Prior to her appointment at DHS, Ms. Lee worked in international development, comparative education research, and program evaluations. She is a doctoral candidate in international educational development at Columbia University and received her JD and BA from the College of William and Mary.

European Commission



Khoen Liem

Mr. Khoen Liem holds a master's degree in electronics engineering from the University of Kent at Canterbury. He worked for 14 years at Honeywell in Germany on military aircraft avionics, infrared systems, and other defense programs. For more than 17 years, he has been with the European Commission. He was part of the team that built up aeronautics/air transport research at DG RTD. He was among the first people in the team setting-up European Security Research, now with DG Enterprise and Industry.

Senior Economist, RTI International



Carol Mansfield, PhD

Dr. Carol Mansfield is a senior economist in the Environmental, Technology and Energy Economics program at RTI International. She also is affiliated with the National Center for Risk and Economic Analysis of Terrorism Events (CREATE) at the University of Southern California. Dr. Mansfield's research focuses on the empirical estimation of benefits and costs for management and policy applications. She has extensive experience with preference elicitation methods, including the design and implementation of surveys and time and activity diaries, as well as statistical analysis of the responses. Her research topics include air and water quality protection, disease treatment and prevention programs, children's health, recreation experiences, and terrorism risk. Dr. Mansfield received her bachelor's degree in economics from Yale University and her PhD in economics from the University of Maryland.

Managing Director, Wharton Risk Management and Decision Processes Center



Erwann Michel-Kerjan, PhD

Dr. Erwann O. Michel-Kerjan is an authority on managing the risks, the financial impact, and the public policy challenges associated with catastrophic events, especially natural disasters and terrorism events. In particular, his interest lies in risk transfer mechanisms to provide financial protection against the consequences of large disasters capable of inflicting billions of dollars of economic losses. Dr. Michel-Kerjan advises corporations and public organizations around the world on how to better protect against those events and develop innovative solutions. He is chairman of the OECD Secretary-General High Level Advisory Board on financial management of large-scale catastrophes (30 member countries). In 2007, he was named a Young Global Leader by the World Economic Forum, an honor recognizing and acknowledging the most extraordinary leaders of the world under the age of 40. He also teaches at the University of Pennsylvania's Wharton School and is managing director of the Wharton Risk Management and Decision Processes Center. He has published widely in peer-reviewed journals and news publications and has authored or co-authored numerous books. Originally from Brittany in France, he holds a PhD in economics and finance.

Research Professor, Dartmouth Medical School



Fran Norris, PhD

Dr. Fran Norris is a research professor in the Department of Psychiatry at Dartmouth Medical School, a research associate of the Executive Division of the Department of Veterans Affairs National Center for PTSD, and a consortium member of START. Through START, Dr. Norris has researched the development of community resilience and a quantitative index of the public health impacts of terrorism. She has published over 120 articles and chapters and has been the recipient of a number of grants for research, research education, and professional development. Her interests include the epidemiology of posttraumatic stress, cross-cultural studies, the mobilization and deterioration of social support after disasters, and systems issues in providing disaster mental health services. She was the lead investigator on two case studies that examined lessons learned from mental health systems' responses to the Oklahoma City bombing and the World Trade Center Disaster, and has been serving as the National Cross-Site Evaluator for the FEMA-funded Crisis Counseling Assistance and Training Program since 2005. She holds a PhD in community and social psychology from the University of Louisville.

Science Advisor, International Cooperative Programs Office, U.S. Department of Homeland Security



Paul Ragsdale, Ph.D.

Dr. Paul Ragsdale is a Science Advisor in the Department of Homeland Security (DHS) Science and Technology Directorate's International Cooperative Programs Office (ICPO). At DHS Dr. Ragsdale is responsible for overseeing and managing an annual academic grant competition for international research in homeland security mission areas. Prior to joining DHS, Dr. Ragsdale spent 3.5 years working for a small business in the Washington, D.C., area that specialized in science and technology analysis for various clients in the Federal government. He received his PhD from Texas A&M University and bachelors degrees from Louisiana State University.

BIOGRAPHIES

Coordinator, Center for Risk and Economic Analysis of Terrorism Events (CREATE)



Adam Rose, PhD

Dr. Adam Rose is the Coordinator for Economics at the DHS Center for Risk and Economic Analysis of Terrorism Events (CREATE). He is also a research professor in the School of Policy, Planning, and Development at the University of Southern California. Dr. Rose's research addresses the economics of natural and man-made hazards; resilience to natural disasters and terrorism at the levels of the individual business, market, and regional economy; and the economics of energy and climate change policy. He recently completed a report on economic resilience for the Community and Regional Resilience Institute. He has also coordinated a group of studies to estimate the economic consequences of 9/11. Dr.

Rose is the author of several books and more than 150 professional papers and has received numerous awards for his achievements. Dr. Rose is currently serving on the National Academies Panel on Earthquake Resilience. He holds a PhD in economics from Cornell University.

Director, Center for Peace and Security Studies, Georgetown University



Gary M. Shiffman, PhD

Dr. Gary M. Shiffman is the director of homeland security studies at the Center for Peace and Security Studies at Georgetown University. He is an economist whose work has focused on developing innovative approaches to national and homeland security, and on educating the next generation of security professionals and academics. He is also a managing director of the Chertoff Group, a global risk management and security services advisory firm. From 2006 to 2009, Dr. Shiffman re-engineered and successfully led the risk management solutions business unit at L-3 Communications, a Fortune 200 corporation, as senior vice president and general manager. He served at the U.S. Department of Homeland Security as the chief of staff

at U.S. Customs and Border Protection during the creation of that agency. Prior to DHS, Dr. Shiffman worked on anti-terrorism and homeland defense emerging issues at an international law firm; advised U.S. senators as a national security and senior policy advisor to the Senate leadership; and served in policy, planning, and operational positions in the U.S. Department of Defense. He is a decorated U.S. Navy Gulf War veteran. Dr. Shiffman earned an MA from Georgetown University and a PhD in economics from George Mason University.

Deputy Commissioner of Specialist Operations, Queensland Police Service, Australia



Ian Stewart, APM

Mr. Ian Stewart serves as the deputy commissioner of specialist operations in Australia's Queensland Police Service. He is responsible for the provision of specialist policing services including State Crime Operations and Operations Support Command, which encompass criminal investigations, all specialist operational support (such as forensic services), state traffic enforcement, counterterrorism coordination, and special emergency response teams. Mr. Stewart also manages Security Planning and Coordination, a unit that provides government-wide coordination for security issues, particularly issues of counterterrorism. He is chair of Australia's Investigation Support Capability Coordination Subcommittee of

the National Counterterrorism Committee, as well as chair of numerous other national and state committees.

Mr. Stewart is a career police officer with over 35 years of service. Prior to his current assignment, he was the assistant commissioner of Information and Communications Technology of the Queensland Police Service, and

the assistant commissioner of the Ethical Standards Command. He also served as the operations coordinator of the North Coast Police Region at the rank of chief superintendent and district superintendent of the largest police district (by operational police) in Queensland at the Gold Coast. His earlier experiences include management of state-wide operational audits; district inspector duties; and assignments as a metropolitan and country detective, a traffic officer, and a project manager in police training. In 2005 Mr. Stewart received the Australian Police Medal for his services to policing.

In 1999 Mr. Stewart was awarded the Australian Fullbright Professional Award, which allowed him to spend five months in the United States studying the balance between operational policing and police accountability. He holds a number of graduate and post graduate tertiary qualifications including a master's degree in public policy and administration and a bachelor's degree in business. He has successfully completed the Police Executive Leadership program of the Australian Institute of Police Management; the Executive Fellows program of the Australian and New Zealand School of Government; and the Senior Managers in Government course at the Harvard Kennedy School.



Johan von Schreeb, MD, PhD

Dr. Johan von Schreeb is a surgeon with over 20 years of humanitarian work experience in conflict, post-conflict, and disaster zones worldwide. He leads a team of researchers to study and combat the health challenges in disaster zones, from developing rapid assessment tools to collecting evidence for best practices. In 1989, Dr. von Schreeb began his career in Afghanistan and moved on to found the Swedish branch of Doctors Without Borders. In 2002, he partnered with the Swedish National Board of Health and Welfare to set up a university-based Centre for Research and Development on disaster medicine in low- and middle-income countries at Karolinska Institutet in Stockholm. In

2007, Dr. von Schreeb was awarded a PhD for his work in the area of needs assessments for international humanitarian health assistance in disasters.

BREAKOUT SESSION MODERATORS AND PANEL MEMBERS

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, and international relations) and honors degrees (international relations) from the University of the Witwatersrand in Johannesburg, South Africa.

Shahrouz K. Aliabadi, PhD

Dr. Aliabadi, a professor in the Department of Computer Engineering and Computer Science at Jackson State University, is director of the Northrop Grumman Center for High Performance Computing of Ship Systems Engineering and is the Northrop Grumman Professor of Engineering. His areas of research include computational fluid dynamics and high-performance computing, and he also has held teaching and research positions at Clark Atlanta University and the University of Minnesota. He received his PhD in aerospace engineering from the University of Minnesota.

BIOGRAPHIES

Diana Beecher

Ms. Diana Beecher is the chief technology officer of the Port Authority of New York and New Jersey. In that capacity, she is responsible for technology strategy, implementation, and operations for the systems and applications that support the Port Authority's business. Prior to joining the Port Authority, Ms. Beecher was the chief information officer at Marsh, Inc. (2003-2006). She had previously been employed with Travelers Insurance, where she served as vice president for technical engineering in the Information Systems Core Technology area before being promoted to senior vice president and chief information officer. Other positions held by Ms. Beecher include senior vice president of brokerage operations for S.G. Warburg & Co., Inc., and principal of the Worldwide Equity Division at Morgan Stanley & Co., Inc. Ms. Beecher received her bachelor's degree in accounting from Shippensburg University in Pennsylvania.

Connie Best, PhD

Dr. Connie Best is a professor in the Department of Psychiatry and Behavioral Sciences at the Medical University of South Carolina. Her research interests include the psychological effects of large-scale disasters, individual and community effects of terrorist events, and effective training of mental health professionals in disaster response. She has published extensively in the areas of post-traumatic stress disorder, psychological trauma, and the effects of disasters and terrorism. Dr. Best has also served as a national consultant on disaster recovery and psychological first aid post-disaster and served more than 20 years in the Navy Reserve. She earned a BA in psychology from the University of South Carolina, and an MS in general experimental psychology and PhD in clinical psychology from the University of North Texas.

Ricardo R. Blazquez

Mr. Ricardo R. Blazquez was named executive director of the Center for Inter-American and Border Studies of the University of Texas at El Paso in 2007. He leads the efforts of the Center in its academic programs and university-wide engagements in Latin America. He also is an adjunct professor at the Graduate School of Business at the University of Texas at El Paso and a visiting adjunct professor at the Graduate School of Business of the I.T.E.S.M. in Monterrey, Mexico. His areas of interest, research, and instruction are Latin American business, globalization, operations management, continuous improvement strategies, strategy deployment methodologies, global information technology management, organizational behavior, leadership, labor relations and the dynamics of corporate politics, bureaucracy, and ethics. Mr. Blazquez has over 25 years of experience in industry, with well over 15 years as an executive with General Motors. He obtained a bachelor's degree in sociology and history from DePaul University and a master's degree in management from the Kellogg School of Management at Northwestern University.

James Bohland, PhD

Dr. James Bohland is currently the vice president at Virginia Tech with responsibility for developing and managing new research initiatives and advanced educational programming in the Washington, D.C. region (National Capital Region) for the university. Previously he served as department chairman for Urban Affairs and Planning, director of the School of Public and International Affairs, director of the Institute for Community Health, and interim provost for the university. In his current position, he has oversight responsibility for a number of research programs with foci on national and homeland security. These include the Center for Technology, Security, and Policy; the Center for Community Security and Resiliency (partnership with IBM); and the Center for Geospatial Information Technology. He also works collaboratively with research institutes and faculty within the region. These include research programs in smart grids, emergency management, forensics, and cascading infrastructures. Dr. Bohland holds a BA in history from Western Michigan University and MA and PhD degrees in geography from the University of Georgia.

Bob Brackett, PhD

Dr. Bob Brackett is GMA's senior vice president and chief scientific and regulatory affairs officer. Dr. Brackett oversees all of the association's scientific and regulatory activity, including the operation of its in-house food safety laboratory. Prior to coming to GMA, Dr. Brackett served in various positions within the U.S Food and Drug Administration's Center for Food Safety and Applied Nutrition, eventually attaining the position of center director. In that role, he provided executive leadership to the Center's development and implementation of programs and policies relative to the composition, quality, safety, and labeling of foods, food and color additives, dietary supplements and cosmetics. Dr. Brackett has served elected leadership positions in several professional associations and is a Fellow of the American Academy of Microbiology and the International Association for Food Protection. He is also the recipient of numerous professional awards and serves on the Advisory Boards of the National Center for Food Protection and Defense, and the National Center for Food Safety and Technology.

Bethany Brown, PhD

Dr. Bethany L. Brown, an assistant professor in the Department of Protection Management, earned her doctorate from the University of Delaware. She was employed there as a research assistant at the Disaster Research Center where she participated in projects pertaining to the movement of critical supplies after Hurricane Katrina and improvisation after the 2001 World Trade Center terrorist attacks. Dr. Brown's areas of expertise are social vulnerability and disasters, and organizational perspectives involving community-based groups in disaster planning, response, and recovery. The National Consortium for the Study of Terrorism and Responses to Terrorism (START) has awarded Dr. Brown a grant to study the impact of current catastrophic event preparedness policies and programs on institutions, officials, and citizens. Findings will help to inform the Department of Homeland Security on how these policies can bolster domestic preparedness and reduce vulnerabilities.

David L. Butler, PhD

Dr. David L. Butler is director and a tenured associate professor in the International Development Doctoral Program in the Department of Political Science, International Development and International Affairs at the University of Southern Mississippi. Dr. Butler is co-principal investigator with Dr. Edward Sayre of the Southeast Region Research Initiative (SERRI) funded project "Modeling Micro-Economic Resilience and Restoration after a Large-Scale Catastrophe: An Analysis of the Gulf Coast after Hurricane Katrina." Dr. Butler has published over 20 articles and books, given over 50 presentations, and has been awarded over \$1 million dollars of external funding for research projects during his career. He has a doctorate in geography from the University of Cincinnati, an MS in geography from Texas A&M University, and a BA from Texas A&M University.

Ruth M. Carrico, PhD

Dr. Ruth M. Carrico is an assistant professor with the University of Louisville School of Public Health and Information Sciences and associate faculty with the Center for Health Hazards Preparedness. With more than 30 years in healthcare practice, Dr. Carrico has focused her practice toward infection prevention in the healthcare and public health sectors and has received training specific for healthcare epidemiology and public health at the CDC in conjunction with the Rollins School of Public Health at Emory University and the Society for Healthcare Epidemiology of America. Dr. Carrico has authored numerous publications and has spoken to both national and international audiences on a variety of topics regarding hospital-based performance improvement, immunization, and preparedness strategies, and continues to advise hospitals, healthcare facilities, and healthcare personnel groups on issues relevant to infection prevention and control. She holds an MA in health services management from Webster University and a PhD in management.

BIOGRAPHIES

Elizabeth Casman, PhD

Dr. Elizabeth Casman is an associate research professor in the Department of Engineering and Public Policy at Carnegie Mellon University. Her research interests are focused on challenges presented by risk assessment under uncertainty. She has studied the potential of urban ecosystems to support rodent-borne plague epidemics; risk communication strategies for rapidly changing and complex bioterrorism scenarios; rapid detection of covert bio-attacks; the economic impact of pandemic influenza; and the effect of the Patriot Act and the Bioterrorism Preparedness Act on the scientific community. A major direction of her current research is evaluating the risk posed by nanomaterials in the environment. She is also interested in drinking water and health connections in developing countries, watershed management, and biotechnology policy.

Dr. Casman earned a BS in microbiology from Syracuse University, an MS in microbiology from Northern Arizona University, and a PhD in geography and environmental engineering from the Johns Hopkins University.

Mark Casto

Mr. Mark Casto is the preK–12 science director for Amesbury public schools in Massachusetts. Since 2003, he has participated in the Research Experience for Teachers (RET) program, which provides summer research opportunities for teachers. His research topics have ranged from detecting dense, nonaqueous-phase liquids using radar technologies to studies of concrete reinforced structure collapse. Mr. Casto has also been involved with planning and conducting a professional development component to the RET experience focused on inquiry-based learning strategies. He has had the opportunity to share his experiences at several national conferences. Mr. Casto has 10 years teaching experience at Amesbury High School in the disciplines of earth science and biology.

Hans Chalupsky, PhD

Dr. Hans Chalupsky is a project leader at the Information Sciences Institute of the University of Southern California, where he leads the Loom Knowledge Representation, Reasoning and Discovery Group. He has over 20 years of experience in the design, development, and application of knowledge representation and reasoning systems such as PowerLoom®, and he is the principal architect of the KOJAK Link Discovery System, which performs hybrid logic-based and statistical inference on large, noisy, and incomplete datasets. In addition to knowledge representation and reasoning systems, Dr. Chalupsky's research interests include knowledge and link discovery, anomaly detection, ontology translation and maintenance, semantic interoperability, and reasoning with inconsistent and incomplete information. He holds a master's degree in computer science from the Vienna University of Technology, Austria, and a PhD in computer science from the State University of New York at Buffalo.

Terri Clay

Ms. Terri L. Clay serves as an assistant professor for Savannah State University in Savannah, Georgia. She teaches undergraduate-level courses on risk and vulnerability assessments; politics and policy of Homeland Security Emergency Management; emergency planning; mitigation and incident management; and Homeland Security Emergency Management special interest topics such as critical infrastructure as well as an introduction to Homeland Security Emergency Management. She also teaches courses for the Political Science Department on American government and research methods. Previously, Ms. Clay was an instructor at the Center for Domestic Preparedness on issues concerning response to incidents involving weapons of mass destruction. She taught classes in incident command, instructor training, law enforcement protective measures and response actions, standardized awareness, and technical emergency response. She is a retired Sergeant First Class, serving her career in the Army Military Police Corps. She also has experience as a civilian deputy sheriff for two counties in Arizona.

Keith Clement, PhD

Dr. Keith Clement is an assistant professor in the Department of Criminology at California State University, Fresno. He conducts research in border security and immigration reform, the psychology of risk and behavior in border security, law enforcement policies/response to domestic violence, and criminal sentencing policies and their effects on prison population growth. He also teaches courses on homeland and border security, the psychology of terror/response to terror, comparative criminal justice, criminology, and juvenile delinquency. Dr. Clement's current administrative duties include coordinator of the Graduate Homeland Security Certificate Program, department internship coordinator, and planning director for the CSU Council for Emergency Management and Homeland Security multi-campus faculty affinity group. Dr. Clement earned BA and MA degrees from San Diego State University and a PhD in political science from the University of Tennessee, Knoxville.

Neville Cramer

Mr. Neville Cramer is a security consultant with over 26 years of federal government experience with the U.S. Border Patrol and the Immigration and Naturalization Service (INS). He has held numerous executive positions within the INS, such as deputy assistant commissioner/SAVE program director, special agent-in-charge/Office of International Affairs, and chief of the Immigration Officer Academy/Federal Law Enforcement Training Center. During his first tenure at INS Headquarters, he created the immigration verification system, later called the Systematic Alien Verification for Entitlements (SAVE) Program, which Congress specified in the 1986 Immigration Reform and Control Act for use in five federally funded entitlement programs. Shortly after his retirement in 2002, Mr. Cramer began his own consulting firm, Immigration Enforcement Solutions, LLC, advising businesses and other entities on the proper use of the U.S. Homeland Security's E-Verify system, among other services.

Carl Crawford, PhD

Dr. Carl Crawford is DHS Technical Support and president of Csuptwo, LLC, a technology development and consulting company in the fields of medical imaging and homeland security. Csuptwo provides technical support to the Science and Technology Program Manager for Explosives Research at the Department of Homeland Security. Dr. Crawford was previously the technical vice president of Corporate Imaging Systems at Analogic Corporation, where he led the application of signal and image processing techniques for medical and security scanners. He developed the reconstruction and explosive detection algorithms for a computerized tomographic scanner deployed in airports worldwide. He was also formerly employed at General Electric Medical Systems and Elscint, where he developed technology for specialized medical scanners. Dr. Crawford has BS, MS, and PhD degrees in electrical engineering from Purdue University and is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE) and an associate editor of IEEE Transactions on Medical Imaging.

Bojan Cukic, PhD

Dr. Bojan Cukic is a Robert C. Byrd Professor of Computer Science and Electrical Engineering at West Virginia University (WVU). His research interests include software engineering with emphasis on verification and validation, information assurance and biometrics, and resilient computing. Dr. Cukic is the co-director of the Center for Identification Technology Research, an NSF industry/ university cooperative research center, and the director of the WVU High Assurance Systems Lab. He also serves on the board of directors of West Virginia University Research Corporation. He received a BS degree in computer science from the University of Ljubljana, Slovenia, and both MS and PhD degrees in computer science from the University of Houston.

BIOGRAPHIES

Himangshu S. Das, PhD

Dr. Himangshu Das is an assistant professor in the Department of Civil and Environmental Engineering at Jackson State University. He also has held the positions of project engineer/oceanographer at URS Corporation and senior water resources engineer at ASPAC Consultants in Thailand. His areas of expertise and research include the modeling and analysis of coastal processes, especially those due to extreme events such as hurricanes. Dr. Das received his PhD in civil engineering from the University of South Carolina, an MS in water resources engineering from the Asian Institute of Technology in Thailand, and a BS in civil engineering from the Bangladesh University of Engineering and Technology. He is a registered professional engineer in the state of Florida.

Elizabeth Lee Daugherty, MD

Dr. Elizabeth Lee Daugherty currently serves as the medical control chief for the Johns Hopkins Hospital Office of Emergency Management. She also serves as the co-chair of the Emergency Mass Critical Care Committee and as a member of the Hospital Epidemiology and Infection Control Committee at Johns Hopkins Hospital. Dr. Daugherty is a member of the American Thoracic Society, American College of Chest Physicians, and the Society of Critical Care Medicine. Her research interests include critical care infection control and critical care disaster response. She attended medical school at Georgetown University and completed her internal medicine training at the hospital of the University of Pennsylvania. Dr. Daugherty then completed her pulmonary and critical care medicine training at Johns Hopkins and joined the faculty of the Johns Hopkins Division of Pulmonary and Critical Care Medicine in July of 2008.

Rebecca Denning, PhD

Dr. Rebecca Denning is the associate director of the Australian Research Council Centre of Excellence in Policing and Security (CEPS) and is based at Griffith University, Brisbane. She received her PhD from Griffith University and has conducted research in auto-theft prevention, juvenile offending and recidivism, policing in indigenous communities, and policy development, and has lectured in crime prevention, developmental and criminological theory, and criminal justice processes. Dr. Denning was previously the manager of the Criminal Justice Research unit in the Queensland Department of the Premier and Cabinet. Through CEPS, Dr. Denning is currently working on a joint project with START, funded by the DHS Science and Technology International Programs office, examining terrorist activity and the impacts of counterterrorism initiatives in the Philippines, Indonesia, and Thailand.

Robin L. Dillon-Merrill, PhD

Dr. Robin L. Dillon-Merrill is an associate professor in the McDonough School of Business at Georgetown University, where she studies how and why people make the decisions that they do under conditions of uncertainty and risk. This research specifically examines critical decisions that people have made following near-miss events in situations with severe outcomes (e.g., hurricane evacuation, terrorism, NASA mission management). Her past research in risk has included supporting the Department of Energy's selection of a new tritium supply facility and aiding NASA's Jet Propulsion Laboratory in decision-making for the Mars Exploration Program. She has served as a risk analysis and project management expert on several National Academies committees including the review of the New Orleans regional hurricane protection projects and the application of risk analysis techniques to securing the Department of Energy's special nuclear materials. Dr. Dillon-Merrill has BS and MS degrees in systems engineering from the University of Virginia and a PhD from Stanford University.

Lisa M. Dolev, PhD

Dr. Lisa Dolev is founder and CEO of Qylur Security Systems, Inc., which is developing the first automated multi-threat checkpoint system for mass public markets. Prior to Qylur, Dr. Dolev worked as a consultant and program manager for a defense agency. She managed multi-disciplinary technology programs and acted as liaison officer in ongoing contacts between defense and military agencies pursuant to the formal international defense R&D agreements. In the course of these activities, Dr. Dolev established and managed the first human-focused suicide bomber detection program. She was an active participant in counter-suicide bomber initiatives led by DARPA. In parallel to her work

in defense consulting and management, Dr. Dolev founded, managed, and consulted for early stage technology companies in the biomedical, high tech, and consumer markets. She holds a PhD in biomedical engineering.

Margo Edwards, PhD

Dr. Margo Edwards received her doctoral degree from Lamont-Doherty Geological Observatory of Columbia University in 1992. She specializes in remote sensing of the seafloor using optical and acoustic systems. Dr. Edwards' principal research theme is the formation and evolution of the oceanic crust. She has the distinction of having studied the Arctic Ocean from beneath the ice canopy as the chief scientist of the 1999 SCIENCE ICE EXercise. She has also participated in field programs aboard the U.S. Coast Guard's icebreaker HEALY. From 2001 to 2007 she was a member (and 2004-2007 chair) of the Arctic Icebreaker Coordinating Committee of the University-National Oceanographic Laboratory System (UNOLS). Dr. Edwards presently serves as chair of the Oversight Committee for the Alaska Region Research Vessel and as a member of the SCICEX Advisory Committee.

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 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 chief of the Operations Division, National Military Command System, and the Joint Staff. Mr. Edwards graduated from the University of Richmond and holds a master's of military arts and sciences from the U.S. Army Command and Staff College and an MS in international studies from the U.S. Naval War College.

Niklas Elmqvist, PhD

Dr. Niklas Elmqvist is an assistant professor in the School of Electrical and Computer Engineering at Purdue University in West Lafayette. His research areas are information visualization, human-computer interaction, and visual analytics. He received his PhD in December 2006 from Chalmers University of Technology in Gothenburg, Sweden. Before joining Purdue in August 2008, he was a postdoctoral researcher in the AVIZ group at INRIA in Paris, France, as well as a visiting scholar at the Information Interfaces research group at Georgia Tech. Dr. Elmqvist is an active participant of the scientific community in his field, and recently received the Best Paper Award at the IEEE Conference on Information Visualization 2008. He is also a recipient of a Google research award and is a member of the DHS Center of Excellence in Visual Analytics (VACCINE).

Joshua M. Epstein, PhD

Dr. Joshua M. Epstein is director of the Center on Social and Economic Dynamics and senior fellow in economic studies at The Brookings Institution; he is also an external faculty member of the Santa Fe Institute. His primary research interest is modeling complex social, economic, and biological systems using agent-based computational models and nonlinear dynamical systems. He has taught computational and mathematical modeling at Princeton and the Santa Fe Institute Summer School. Dr. Epstein is a recent recipient of the prestigious 2008 NIH Director's Pioneer Award. He is director of the Global Epidemic Model activity within NIH's Models of Infectious Disease Agent Study (MIDAS), and also directs modeling and simulation for the DHS University Center of Excellence on Preparedness and Catastrophic Event Response (PACER) based at the Johns Hopkins Medical School. He has published widely in the modeling area, including articles on the dynamics of civil violence, the demography of the Anasazi, the evolution of norms, and the epidemiology of smallpox and pandemic flu. He holds a PhD from MIT.

BIOGRAPHIES

John Farrell, PhD

Dr. John Farrell is the executive director of the U.S. Arctic Research Commission (USARC). Prior to his appointment at the USARC he was a professor-in-residence and associate dean of research and administration at the University of Rhode Island (URI) Graduate School of Oceanography. At URI, he was active as a research scientist, a research manager, and as the college administrator. He previously served as program director at the Joint Oceanographic Institutions, where he managed the international Ocean Drilling Program and the National Science Foundation's U.S. Science Support Program. Dr. Farrell played a pivotal role in planning and implementing the Integrated Ocean Drilling Program (IODP), the successor to the Ocean Drilling Program, and participated in the highly successful IODP Arctic Coring Expedition (ACEX). Dr. Farrell has spent more than ten months at sea as a research scientist on oceanographic expeditions to all major ocean basins. He has published more than 35 peer-reviewed scientific research papers on marine geology, paleoceanography, and geochemistry. He received his doctorate in geological sciences from Brown University.

Brian Fisher, PhD

Dr. Brian Fisher is associate professor of interactive arts and technology and cognitive science at Simon Fraser University and the associate director of the Media and Graphics Interdisciplinary Centre (MAGIC) at the University of British Columbia. His current research combines field research on real-world practices of analysts and decision-makers and laboratory investigation of the use of information systems to support human reasoning and operation management. This is done in collaboration with the U.S. Department of Homeland Security for applications in criminal investigation, disaster relief, and anti-terrorism. Dr. Fisher is a co-chair of the 2010 IEEE Conference in Visual Analytics Science and Technology, the International Symposium in Smart Graphics, and the Digital Media at Scale and Visual Analytics Minitrack of the Hawaii International Conference for the Systems Sciences. He also serves on the leadership board of DHS's Center of Excellence in Command, Control, and Interoperability. Dr. Fisher earned a BA in biology from Hiram College and a PhD in experimental psychology from the University of California, Santa Cruz.

CAPT J.J. Fisher

Captain J.J. Fisher is assigned as Chief, Office of Policy Integration under the new Director, Assessment, Integration, and Risk Management, Assistant Commandant for Marine Safety, Security, and Stewardship, Coast Guard Headquarters, Washington, D.C. Captain Fisher is responsible for enterprise-wide and external policy development, as well as coordination and review of interagency policy and plans. His office also serves as the Coast Guard point of contact to DHS's Office of Policy. Additionally, his office is responsible for cross-directorate integration of oceans policy and planning efforts and the coordination of headquarters policy and planning staffs.

Kelly Gaither, PhD

Dr. Kelly Gaither is the director of Data and Information Analysis at the Texas Advanced Computing Center (TACC). She is also the associate director of research and development at TACC. Her research interests include scientific visualization, feature detection, illumination and visualization techniques, and visualization applications. She is currently working on projects that address feature detection techniques, real-time rendering of complex time-dependent data sets, and remote and collaborative visualization. Before joining TACC, Dr. Gaither worked as a research professor in computational engineering at Mississippi State University. She is a member of IEEE and ACM and has published numerous scientific papers. Dr. Gaither earned BS and MS degrees in computer science from Texas A&M University and a PhD in computational engineering from Mississippi State University.

Jaime Garcia

Mr. Jaime Garcia is the corporate security operations manager for Delphi Corporation. His areas of responsibility include Mexico and Texas, and he also supports all other countries in Latin America, managing over 70 locations. His duties include government program compliance, executive protection, computer forensic investigations, security assessments, and management of approximately 800 security employees. Mr. Garcia is also involved in various projects and programs that address emergency response and preparedness, identity theft, cargo safety and security, and supply chain management. His educational background includes certifications in computer forensic investigations and computer information systems and a degree in criminal justice.

Andrew Garrett, MD

Dr. Andrew Garrett is the director of planning and response at Columbia University's National Center for Disaster Preparedness (NCDP), and an associate research scientist at the Mailman School of Public Health. He also is a coordinator for the disaster response network of the Children's Health Fund. Dr. Garrett is board certified in both pediatrics and disaster medicine, and has served as a supervisory medical officer with a disaster medical assistance team since 2001. Dr. Garrett completed residency training at the Children's Hospital of Philadelphia and subsequently worked as a flight physician for Children's Hospital Los Angeles. He then completed a two-year fellowship in prehospital care and disaster medicine at the University of Massachusetts, where he was a faculty member in pediatrics and emergency medicine and an attending physician in pediatric emergency medicine. He also holds an MPH degree from the University of Massachusetts. Dr. Garrett has been a part of numerous federal deployments for disasters and public health emergencies since 2001 and volunteers as a medical director for a fire department and as a tactical physician with a SWAT team.

John Gerth

Mr. John Gerth is manager of the Stanford Computer Graphics Lab and also network security officer for the Electrical Engineering and Computer Science Departments at Stanford University. In addition to managing the lab, he pursues research interests in information visualization, system architecture, and graphic algorithms. He is a member of the program committees for the IEEE Symposium for Visual Analytics Science and Technology (VAST) and the International Workshop on Visualization for Cyber Security (VizSec). Prior to coming to Stanford, he spent 17 years in software product development at IBM and later was a research staff member at the T.J. Watson Laboratory.

Elyse Golob, PhD

Dr. Elyse Golob is the executive director of the National Center for Border Security and Immigration at the University of Arizona. Funded by the Department of Homeland Security Science and Technology Directorate, the center will provide cross-cutting technology and basic research needs to enhance the nation's security. 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 employment at the University of Arizona, Dr. Golob 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 received her doctorate from Rutgers University in urban planning and policy development.

BIOGRAPHIES

Patrick Gurian, PhD

Dr. Patrick Gurian is an assistant professor in the Department of Civil, Architectural, and Environmental Engineering at Drexel University. His research focuses on improving environmental policies through the development of better decision-making tools. These tools include statistical analyses, simulation models, mechanistic models of contaminant fate and transport, benefit-cost analyses, decision analytic models, and an understanding of human risk perception. He is currently involved in a project modeling national exposure to contaminants in drinking water and estimating the costs and benefits of stricter drinking water standards. He is also interested in developing research projects to address the environmental health issues associated with the U.S.–Mexico border region, such as providing safe drinking water and adequate sanitation to low-income populations, prioritizing among different risks, and understanding the relationship between economic status and exposure to environmental health risks. Dr. Gurian received a bachelor's degree in chemistry from Harvard University, an MS in environmental engineering from Stanford University, and a PhD in engineering and public policy and civil & environmental engineering from Carnegie Mellon University.

Dan Hanfling, MD

Dr. Dan Hanfling is the director of emergency management and disaster medicine for the Inova Health System in Falls Church, Virginia. He is also the State Medical Director for PHI Air Medical Group—Virginia, the largest private rotor-wing air medevac service in the Commonwealth of Virginia. He serves as a medical team manager for Virginia Task Force One, a FEMA and USAID sanctioned international urban search and rescue team, and he has played a role in the response to international and domestic disaster events. He was intricately involved in the response to the anthrax bioterror mailings in the fall of 2001. Dr. Hanfling was the founder and co-chairman of the Northern Virginia Emergency Response Coalition and founder of the Northern Virginia Hospital Alliance. He has testified before Congress on the issues of disaster preparedness and lectures nationally and internationally on pre-hospital, hospital, and disaster-related subjects. Dr. Hanfling received his bachelor's degree in political science from Duke University and a medical degree from Brown University. He is an assistant clinical professor of emergency medicine at George Washington University and an adjunct distinguished senior Fellow at the George Mason University School of Public Policy.

Morgan Hennessey, DVM

Dr. Morgan Hennessey is the research manager for the National Center for Food Protection and Defense at the University of Minnesota. Prior to starting his current position, he completed a post-doctoral fellowship at the University of Minnesota Center for Animal Health and Food Safety, specializing in veterinary public health and global food systems. He received a doctor of veterinary medicine degree from Purdue University and a master's degree in public health from the University of Minnesota, and also spent one year in private mixed-animal practice employed as an associate veterinarian, with large animal aspect focusing primarily on dairy.

Eve Hinman, PhD

Dr. Eve Hinman is the president and founder of Hinman Consulting Engineers, specializing in design solutions to mitigate explosion effects, with offices in San Francisco and Washington D.C. She is a leader in anti-terrorist design and has been providing specialized consulting services in this area since 1983. She has designed nuclear missile silos, NATO military facilities, industrial buildings subject to accidental explosions, and civilian buildings vulnerable to terrorist attack. She is the principal author of two DHS Risk Management Series publications, *FEMA 427: Primer for the Design of Commercial Buildings to Mitigate Terrorist Attacks* and *FEMA 455: Handbook for Rapid Visual Screening of Buildings to Evaluate Terrorism Risks*. Dr. Hinman holds bachelor and master degrees in civil engineering and a doctorate in engineering mechanics from Columbia University.

Richard John, PhD

Dr. Richard John is an associate professor of psychology and a research associate 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, 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.

Mary L. Kelley, PhD

Dr. Mary L. Kelley is a professor of psychology at Louisiana State University and is also a clinical psychologist. Since Hurricane Katrina, Dr. Kelley's research has focused on identifying factors related to children's adjustment post-disaster. She has published a number of studies on family and parenting variables associated with children's post-disaster functioning. She also has published extensively in the areas of child and parenting assessment and child behavioral interventions. She holds a BA in human development from the University of Kansas and MA and PhD degrees in clinical psychology from West Virginia University.

CAPT Kevin C. Kiefer

Captain Kevin Kiefer is chief of the Office of Port and Facility Activities at U.S. Coast Guard Headquarters in Washington, DC. In this role, he is responsible for enforcement of the Maritime Transportation Security Act; implementation of the Transportation Worker Identification Credential; recovery of port capability; and strategy for the protection of dangerous cargoes, critical infrastructure, and high-value assets. He was previously the commanding officer of the Marine Safety Unit in Huntington, West Virginia, where his area of responsibility included the Port of Huntington Tri-State, the largest inland and seventh largest port in the nation (on an annual tonnage basis). During an earlier assignment with the Marine Safety Office in Corpus Christi, Texas, he served as executive officer and was the lead planner for the nation's largest military outload operation in support of Operations Enduring Freedom and Iraqi Freedom. Captain Kiefer has been awarded two Meritorious Service medals, a Coast Guard Commendation medal, and numerous other medals, unit citations, and operational service awards. He graduated from the U.S. Coast Guard Academy with a BS in marine engineering and also holds an MS in naval architecture and marine engineering and a master of engineering degree in manufacturing from the University of Michigan.

Sara Klucking, PhD

Dr. Sara Klucking serves as a homeland security biodefense policy analyst and program manager in the S&T chem bio threat characterization branch of the U.S. Department of Homeland Security. There her portfolio includes the integrated CBRN terrorism risk assessment, bioterrorism risk assessment, integrated biosurveillance, synthetic genomics, food defense, and preparedness and response planning. Her work involves a unique combination of technical assessment, program management, and interagency policy development that broadly leverages her previous biological sciences education and training along with her recent training in science policy and U.S. government relations as an American Association for the Advancement of Science National Defense and Global Security S&T Policy Fellow. Prior to joining DHS she received her bachelor's degree from Macalester College with majors in biology and philosophy, performed research in viral immunology at the University of Washington, received her PhD in virology from Harvard University, and completed a postdoctoral fellowship in viral pathogenesis at the Emory University Vaccine Center in Atlanta.

BIOGRAPHIES

George W. Korch, PhD

Dr. George W. Korch is the senior science advisor to the assistant secretary for Preparedness and Response, Health and Human Services, and is a visiting professor in the Department of Molecular Microbiology and Immunology at the Johns Hopkins Bloomberg School of Public Health. Dr. Korch retired from the U.S. Army Medical Department in 2008, where he had served in a number of leadership roles, including the Commander of the U.S. Army Medical Research Institute of Infectious Diseases and the director of the Department of Defense Medical Chemical and Biological Defense Research Program. He also served as one of the first directors of the National Biodefense Analysis and Countermeasure Center, Department of Homeland Security. His area of expertise is in viral and rickettsial zoonotic diseases and in medical countermeasure development (vaccines, therapies and diagnostics) for biodefense needs. He serves or has served on such committees as the Institute of Medicine's Forum on Microbial Threats, the State of Maryland's Life Sciences Advisory Board, and with the Standards Development Committee for the American Type Cell Culture.

Thomas W. Kowalczyk

Mr. Thomas Kowalczyk presently provides management support services to the Department of Homeland Security, Office of University Programs. Prior to his current assignment, Mr. Kowalczyk served for 33 years as a civilian in the Department of the Navy, working as a program officer in the Office of Naval Research. In that capacity, Mr. Kowalczyk was assigned to an initiative to transform the Office of Naval Research's investment strategy from one of heavy reliance on Naval sponsored research to a mix that included a heavy leveraging of the commercial market investment in R&D. Prior to the program officer assignment, Mr. Kowalczyk was assigned to the assistant secretary of the Navy Research Development & Acquisition, Acquisition Reform Office, where he was responsible for the development of the Lean Ship Initiative and the design and development of Business War Games. Other professional experience includes serving as the executive director of the TRIDENT Command and Control Systems Maintenance Activity in Newport, Rhode Island.

Chris Kozub

Mr. Chris Kozub serves as associate director of the Center for Transportation Safety, Security, and Risk (CTSSR). Prior to joining the CTSSR, Mr. Kozub served as assistant director of the National Transit Institute (NTI) for almost a decade, in addition to serving as associate director of NTI's Workplace Safety and Security program area. In that capacity, he was instrumental in training over 125,000 employees in the areas of system security awareness and terrorist activity recognition and reaction. Mr. Kozub has extensive experience in strategic planning and project management in the public transit field, and has served as principal investigator on several research, training, and outreach projects addressing a number of safety and security-related topics, including system safety, incident management, system security, and terrorist awareness and response training projects for agencies such as the FTA, FMCSA, NCHRP and TSA. Mr. Kozub also collaborates actively with industry experts by serving on a variety of advisory panels and presenting at national and international forums, and has testified before Congress regarding the vulnerability and readiness of the nation's public transportation workforce.

Elizabeth Lautner, DVM

Dr. Beth Lautner is the director of USDA's National Veterinary Services Laboratories (NVSL) in Ames, Iowa. 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. Previously, Dr. Lautner served as center director of the Plum Island Animal Disease Center (PIADC) within the Science and Technology Directorate of the Department of Homeland Security (DHS). She was responsible for administration and operations of the center, a Biosafety Level 3 and 3 Agriculture facility with a budget of \$50 million, and oversight of the DHS

science program at the center. Dr. Lautner has received a number of awards in recognition of her contributions to the advancement of animal health. She holds BS and DVM degrees from Michigan State University and also has an MS degree from the University of Minnesota.

Ric Ledbetter

Mr. Ric Ledbetter is the director of educational technologies at The Athena Group, Inc., as well as a professor at Santa Fe College, where he teaches science to high school dual enrollment students. Mr. Ledbetter received his Ed.D. from the University of Florida in 1993 in the area of science education. His research focuses on hands-on, inquiry-based technology for middle and high school science students, and on professional development for middle and high school science teachers.

Chung-Sheng Li, PhD

Dr. Chung-Sheng Li is currently the director of the Security, Information Analytics, and Business Integrity department at IBM Thomas J. Watson Research Center. His research interests include security and compliance, digital library and multimedia databases, knowledge discovery, and data mining. He has initiated and co-initiated a number of NASA- and DARPA-funded research programs within IBM on fast tunable receivers for all-optical networks, content-based retrieval in the compressed domain for large image/video databases, federated digital libraries, and bio-surveillance, as well as a number of IBM product-related projects. He has authored or coauthored more than 130 journal and conference papers and received the best paper award from IEEE Transactions on Multimedia in 2003. He is both a member of IBM Academy of Technology and a Fellow of the IEEE. Dr. Li received a BS in electrical engineering from National Taiwan University and MS and PhD degrees in electrical engineering and computer science from the University of California, Berkeley.

Darren Mareiniss, MD, JD

Dr. Darren Mareiniss is the Legal Medicine Fellow in the Department of Emergency Medicine at Johns Hopkins University. In this capacity, he pursues issues related to disaster medicine, patient safety, and pandemic influenza. His areas of interest include pandemic influenza, disaster medicine, disaster law, patient safety, bioethics and end-of-life care. Dr. Mareiniss has published widely in medical and legal journals on various topics and has lectured at numerous national meetings and forums. Previously, Dr. Mareiniss served as a member of the University of Texas Institutional Review Board and also served as adjunct faculty at the University of Texas Law School, where he taught a law course entitled “Disasters and the Law.” He received his MD from New York University School of Medicine and completed his internship in surgery at NYU Medical Center/Bellevue Hospital. Dr. Mareiniss also received both a JD and master’s of bioethics degree from the University of Pennsylvania School of Law/School of Medicine.

Shalva Marjanishvili, PhD

Dr. Shalva Marjanishvili is the technical director of Hinman Consulting Engineers. He has expertise in seismic performance-based analysis and design of structures, research and development of various structural analysis techniques, and structural performance evaluation criteria. Dr. Marjanishvili has lectured on procedures for progressive collapse analysis and has published multiple papers including “Procedures for Progressive Collapse Analysis” in the Journal of Performance of Constructed Facilities published by the American Society of Civil Engineers (ASCE). Dr. Marjanishvili holds a master’s degree in structural engineering from Stanford and a PhD from the Georgian Technical University. He is currently the chair of the Dynamic Behavior Technical Committee with the ASCE Structural Engineering Institute.

BIOGRAPHIES

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 Southeast Region Research Initiative. These programs focus on preparedness, response, and recovery as well as critical infrastructure protection and resilience. Prior to his role in Homeland Security, he operated in several leadership positions in the National Weather Service as a chief meteorologist in charge of two National Weather Service 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.

Sabrina A. Mattson, PhD

Dr. Sabrina Mattson is the project director at the Center for the Study and Prevention of Violence at the University of Colorado, Boulder, a research center within the University of Colorado's Institute of Behavioral Science. Her research focuses on developing strategies to ensure the safety of children in their communities. Working with Terrence Thornberry (University of Maryland), Dr. Mattson has served as the lead investigator on START's school-based preparedness study, involving the systematic collection and analysis of information on community and school preparedness for all hazards, including terrorism-related events, from communities around the country. Dr. Mattson earned a BA in sociology from the California State University and a PhD in sociology from the University of Colorado.

CDR Joan T. McNamara

Commander Joan T. McNamara joined the Los Angeles Police Department in 1982 after graduating from the University of Minnesota with a BA in criminology and sociology. She has spent the past 25 years rising through the ranks, working a cross-section of operational, investigative, administrative, and command assignments. She was named Commanding Officer of Newton Patrol Division in 2004, where she subsequently led the division to an unprecedented reduction in crime. She was also the architect behind a project that resulted in breakthrough civil litigation and a revolutionary new method in crime fighting and public service. In 2005, she was promoted to Commanding Officer of Harbor Area, where she spearheaded unique efforts in a crime/gang and narcotics problem neighborhood. Her current assignment is assistant commanding officer of the Counter-Terrorism and Criminal Intelligence Bureau. She has been developing the THREATSTAT analytical model, as well as a system of suspicious activity reporting, which has been recognized as a potential national model for terrorism reporting at the local law enforcement level. Commander McNamara is a graduate of the West Point Leadership Institute, the Senior Management Institute for Policing, and the Federal Bureau of Investigation National Academy, Session 211.

Doris Meissner

Ms. Doris Meissner, former Commissioner of the U.S. Immigration and Naturalization Service (INS), is a Senior Fellow at the Migration Policy Institute (MPI) where she directs MPI's work on U.S. immigration policy. Ms. Meissner directed MPI's Independent Task Force on Immigration and America's Future, which made recommendations for future U.S. immigration policies, and co-authored both of MPI's earlier E-Verify reports. In addition to serving as INS Commissioner from 1993 to 2000, she served in various policy posts in the Department of Justice from 1973 to 1986. Ms. Meissner worked at the Carnegie Endowment for International Peace from 1986 to 1993, where she established the Immigration Policy Project—which later became MPI. Ms. Meissner earned her BA and MA degrees from University of Wisconsin-Madison.

CAPT Ed Merkle, USCG, Ret.

Captain Ed Merkle, as the director of Port Security and Emergency Operations, is the most senior security professional within the Virginia Port Authority and administers the Virginia Port Authority Police Department, comprising 80 sworn police officers. He is accountable for the comprehensive Port Security Plan that includes all port properties and ensures port tenants comply with all federal, state and local security laws and regulations. Captain Merkle serves as an executive member of the Area Maritime Security Committee and administers the federal security grants. Additionally, he leads the Port Emergency Management and Response Program. He is a retired Coast Guard Captain, having completed over 25 years of active military service. Captain Merkle is a 1979 graduate of the U.S. Coast Guard Academy, where he earned a BS in mathematics. Additionally, he holds a master's of education (M.Ed.) degree from the George Washington University.

Eric Meyers

Mr. Eric Myers is the director of the National Biosurveillance Integration Center (NBIC), Office of Health Affairs, Department of Homeland Security (DHS). He was selected for this position after serving as the deputy director and program manager for the National Biosurveillance Integration System (NBIS) (2006–2008) and as the director of business operations for the Information Analysis and Infrastructure Protection Directorate (IAIP) and the Preparedness Directorate (2003–2006).

Before entering the federal government, Mr. Myers was a contractor for the firm of Booz Allen Hamilton and supported key defense and intelligence projects with the Defense Advanced Research Projects Agency, the Defense Intelligence Agency, and U.S. Northern Command. Prior to that, Mr. Myers retired from the U.S. Navy at the rank of Captain after 27 years of service as an intelligence and operations specialist. Mr. Myers received his BA in political science from Boston College and is a graduate of numerous military operations and intelligence training courses.

Samuel Musa, PhD

Dr. Samuel Musa is a senior research fellow and Homeland Security Science and Technology chair at the Center for Technology and National Security Policy, National Defense University. Previously, he was associate vice president for strategic initiatives and professor of electrical and computer engineering at Northwestern. He was also center executive director at University of Michigan; corporate vice president for research at E-Systems; deputy director in the Office of Secretary of Defense; project leader at Institute for Defense Analyses; and assistant professor of electrical engineering at the University of Pennsylvania. Dr. Musa has served on numerous science and advisory boards and was a member of the board of directors of Semiconductor Research Corporation, chairman of AIA Technical and Operations Council, technical editor on Environmental Monitoring of IEEE Transactions on Geoscience and Remote Sensing, and is a Fellow of the IEEE.

Dr. Musa received his BA and BS in electrical engineering from Rutgers University, and MS and PhD degrees in applied physics from Harvard University.

Ryan Newkirk

Mr. Ryan Newkirk is a third-year PhD student in epidemiology at the University of Minnesota School of Public Health. He earned his MPH with an epidemiology concentration at the Saint Louis University School of Public Health. Prior to coming to the University of Minnesota, Mr. Newkirk served as director of evaluation and a research coordinator at the Heartland Center for Public Health Preparedness, where he managed evaluation activities for bioterrorism preparedness trainings and pandemic influenza simulations. Mr. Newkirk currently serves as a graduate assistant at the National Center for Food Protection and Defense at the University of Minnesota, and conducts research on foodborne disease epidemiology, intentional contamination events, and risk assessments. He is also a University of Minnesota: Simulations and Exercises for Educational Effectiveness Fellow. In this position, he pursues bioterrorism preparedness-related research and fieldwork concentrating on the food and public health systems, including system vulnerabilities and related education and training opportunities.

BIOGRAPHIES

Jeffrey V. Nickerson, PhD

Dr. Jeffrey V. Nickerson is an associate professor in the Wesley J. Howe School of Technology Management and director of the Center for Decision Technologies at Stevens Institute of Technology. The center performs research on the interface between people, technology, and information, and focuses on building cognitive models of social processes. Currently, the center is examining how individuals and small groups make decisions in emergency situations. In related work, the center is building models of social networks for sensing and predicting events based on changes in link structure and language use. The center's projects are funded by the Department of Homeland Security, the National Science Foundation, and the Department of Defense. Dr. Nickerson has published over 50 papers on human-computer interaction, social network analysis, sensor network design, and the visualization of information systems. Prior to joining Stevens, Dr. Nickerson was a partner at PricewaterhouseCoopers, specializing in the design of software-intensive systems. Dr. Nickerson earned his PhD in computer science at New York University.

Mike Orosz, PhD

Dr. Mike Orosz is a principal investigator at the DHS National Center for Risk and Economic Analysis of Terrorism Events (CREATE), the DHS National Center for Food Protection Defense (NCFPD), and the DHS National Center for Foreign Animal and Zoonotic Diseases (FAZD). He recently served (2006-2009) as the information analytics science leader and member of the executive committee for the FAZD Center. In addition, Dr. Orosz has recently or is presently managing projects funded by DARPA, DHS, IARPA, NASA, NRO, NSA, ONR, and the USMC. Michael Orosz has over 25 years experience in commercial software development, applied research and development, project management, and academic research. His research interests include mission-critical command and control systems, mission management and execution, intelligence analysis, operational risk management, integrated modeling environments, distributed system of systems, and intelligent human-computer interfaces. Dr. Orosz received a BS in engineering from the Colorado School of Mines, an MS in computer science from the University of Colorado, and a PhD in computer science from the University of California at Los Angeles.

Daniel Perez, PhD

Dr. Daniel Perez is an associate professor at Virginia-Maryland Regional College of Veterinary Medicine. His current interests include the interspecies transmission, pathogenesis, and evolution of avian influenza viruses and the role of cross-protective immunity in the spread of highly pathogenic avian influenza viruses to other birds and mammals. He has also studied virus-virus and virus-host protein interactions of influenza virus and bovine viral diarrhea virus. Dr. Perez obtained his BSc and MS degrees from the College of Chemical Sciences at the National University of Cordoba, Argentina and completed his PhD in molecular virology in the Department of Veterinary and Biomedical Sciences at the University of Nebraska-Lincoln, Nebraska.

Rose Pfefferbaum, PhD

Dr. Rose Pfefferbaum is a professor of economics at Phoenix College, the oldest of 10 colleges in the Maricopa County Community College District in Arizona. She has been with the Maricopa District for over 30 years, serving in a variety of positions and teaching in several disciplines including the social sciences and health-related subjects. During that time, she has developed multiple education and service programs within and outside the Maricopa District, 14 occupational certificates, an associate in applied science degree, and more than 30 courses including instructional and student materials. Dr. Pfefferbaum has experience working with interdisciplinary faculty teams and has helped build numerous partnerships involving schools, service providers, business and industry, and public organizations. She is a member of the University of Oklahoma Terrorism and Disaster Center's community resilience team and is the lead author of the Terrorism and Disaster Center Community Assessment of Resilience Tool (CART) © survey instrument to assess community resilience to disasters, supported by START.

Sally Phillips, PhD

Dr. Sally Phillips joined the staff of the Center for Primary Care, Prevention, and Clinical Partnerships (CP3) at the Agency for Healthcare Research and Quality (AHRQ) in September 2001 as a senior nurse scholar. She managed a portfolio that ranged from her primary area of bioterrorism to multidisciplinary education for safety and related health care workforce initiatives. Prior to joining the AHRQ staff, Dr. Phillips was a Robert Wood Johnson health policy fellow and health policy analyst for Senator Tom Harkin for two years. She brought a wealth of expertise in the area of multidisciplinary education, patient safety legislative initiatives, and curriculum with health professions education to her role at AHRQ. Dr. Phillips joined the AHRQ staff in September 2002 as director of the Bioterrorism Preparedness Research Program, now the Public Health Emergency Preparedness Program. She is an accomplished author, consultant, and speaker on public health and medical preparedness and response research initiatives. Dr. Phillips holds a PhD from Case Western Reserve University in Cleveland, Ohio.

John Picanso

Mr. John Picanso is the chief information officer of the USDA's Animal and Plant Health Inspection Service's (APHIS) Veterinary Services. He was previously the chief information officer for the Colorado Department of Agriculture for nine years. His duties included leading technology development efforts in the areas of homeland and agro-security, preparedness and response, livestock disease surveillance, data collaboration and integration, and risk assessment and mitigation. In 2003 the Colorado Information Managers Association named Mr. Picanso "CIO of the Year." Mr. Picanso has expertise and knowledge in livestock production and information technology and has contributed to the development of systems to aid in animal disease programs and animal traceability. His earlier work with Colorado State University analyzed the realities of effective livestock traceback during an animal disease event. Recently Mr. Picanso has worked with Maulsby and Rick Wahlert and the 15 western states with brand laws in developing a set of recommendations for USDA to consider in implementing the national animal identification system.

James Platske

Mr. Platske is currently the director of the southeast region for the U.S. Customs and Border Protection, Office of Air and Marine. He began his law enforcement career in 1991, with the U.S. Customs Service, after serving five years in the U.S. Army. He has held positions as a dual rated pilot; instructor pilot; aviation group supervisor; director of operations planning, HQ; and director of the Air and Marine Operations Center in Riverside, California. Mr. Platske has a bachelor's degree in criminal justice and a graduate degree in organizational leadership.

Edward A. Pohl, PhD

Dr. Edward A. Pohl is an associate professor in the Department of Industrial Engineering at the University of Arkansas. He currently serves as the director of the Operations Management Program and the director of the Reliasoft Risk, Reliability, and Maintainability Research Alliance. He has participated and led several risk and supply-chain-related research efforts at the University of Arkansas. His primary research interests are in supply chain risk analysis, decision making, engineering optimization, quality, and reliability. Before coming to Arkansas, Dr. Pohl spent 20 years in the United States Air Force, where he served in a variety of engineering, analysis, and academic positions. Previous assignments include the deputy director of the Operations Research Center at the United States Military Academy, and operations analyst in the Office of the Secretary of Defense. He received his PhD in systems and industrial engineering from the University of Arizona.

BIOGRAPHIES

Richard A. Posthuma, PhD, JD

Dr. Richard Posthuma is a professor of management in the Department of Marketing and Management, College of Business Administration, at University of Texas at El Paso. He has more than 15 years of professional work experience in human resource management, risk management, and law. His research interests include risk management, conflict management, international human resource management, and border security. Dr. Posthuma has published numerous articles in leading journals and is also an editor with the International Journal of Conflict Management. He holds a PhD in organizational behavior and human resource management from Purdue University; graduated cum laude with a JD from the Thomas M. Cooley Law School; and holds a master's degree in labor and industrial relations from Michigan State University. He is admitted to practice law in Michigan and the District of Columbia.

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 and a United States Air Force Certificate of Appreciation. Dr. Pottenger completed his PhD in computer science at the University of Illinois at Urbana-Champaign.

Tom Powdrill, DVM

Dr. Tom Powdrill is the assistant director for external affairs at the National Center for Foreign Animal and Zoonotic Disease Defense (FAZD) at Texas A&M University. Before joining the FAZD, Dr. Powdrill served in both academia and industry in the fields of advanced molecular diagnostics, applied genomics and proteomics, molecular virology, and recombinant vaccine development for human hepatitis viruses. He has contributed as an author to a number of publications and patents in these areas and has participated in the development of modern DNA microarray technology as a valuable tool for understanding animal and human disease pathology at the molecular level. Most recently, Dr. Powdrill has served as the president and co-founder of a biotechnology company, Vitruvius Biosciences, in The Woodlands, Texas. Facets of the technology pioneered at his company are currently being developed as an important tool to classify and diagnose important human and animal disease threat agents. Dr. Powdrill received his BS in veterinary sciences, his MS in molecular genetics, and his DVM in veterinary medicine from Texas A&M University.

William L. Ramsey

Mr. William Ramsey, corporate director of security for McCormick & Company, a global leader in the manufacture of spices, flavors and seasonings, has worldwide responsibility for physical security and food defense policy and planning. He is chairman of the Food Defense Committee of the Food Products Association and is a member of, or participates in, the SEC Executive Council, ASIS Agriculture and Food Security Council, ASIS CSO Roundtable, National Center for Food Protection and Defense, and the Processor-Manufacturer Sub-Council of the Food and Agriculture Sector/Government Coordination Council. In 2008, Mr. Ramsey was named by Security Magazine as one of the top 25 most influential people in the security industry.

Carey M. Rappaport, PhD

Dr. Carey Rappaport is deputy director for Awareness and Location of Explosives-Related Threats (ALERT). He is also associate director of the Bernard M. Gordon Center for Subsurface Sensing and Imaging Systems and a professor of electrical and computer engineering at Northeastern University. His research interests include antenna design, wave propagation in complex media, computational modeling, biomedical microwave device design and analysis, and subsurface sensing system design and integration. Dr. Rappaport was the PI of a \$5M ARO-sponsored multidisciplinary university research initiative in humanitarian demining, the lead researcher supporting Alion Science and Technology, Inc.'s \$130M Omnibus Task Order with U.S. Army Night Vision and the Electronic Sensors Directorate, as well as the PI for a \$4.9M DHS Advanced Spectrographic Radiation Portal Monitor for special radioactive materials. He received dual bachelor's and master's degrees in electrical engineering and computer science from MIT and a PhD in electrical engineering from MIT.

William Ribarsky, PhD

Dr. William Ribarsky is the Bank of America Endowed Chair in Information Technology at the University of North Carolina (UNC) and the founding director of the Charlotte Visualization Center. He is currently chair of the Computer Science Department at UNC. He is also the principal investigator for the DHS Southeast Regional Visualization and Analytics Center. Dr. Ribarsky's research interests include visual analytics; 3D multimodal interaction; bioinformatics visualization; virtual environments; visual reasoning; and interactive visualization of large-scale information spaces. He is the former chair and a current director of the IEEE Visualization and Graphics Technical Committee 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 has published over 120 scholarly papers, book chapters, and books. Dr. Ribarsky received a PhD in physics from the University of Cincinnati.

Thomas Richardson

Mr. Richardson is the deputy director of the Center of Excellence for Natural Disasters, Coastal Infrastructure, and Emergency Management at Jackson State University. He is the former director of the Coastal and Hydraulics Laboratory at the Engineer Research and Development Center in Vicksburg, Mississippi, and has spent his professional career managing and conducting research in the field of coastal and hydraulic engineering. He holds a BS in civil engineering from The Citadel, an MS in civil/ocean engineering from the University of Miami, and a diploma in hydraulic/coastal engineering from the International Institute for Hydraulic and Environmental Engineering in Delft, the Netherlands.

Thomas Robl, PhD

Dr. Thomas L. Robl is the associate director for Environmental and Coal Technologies (ECT) at the University of Kentucky Center for Applied Energy Research. ECT is a multi-disciplinary research group consisting of chemists, material and civil engineers, and earth scientists who conduct cross-cutting research into the management and utilization of coal combustion products. The research encompasses process development for ash beneficiation and the fabrication of new low-energy, low-CO₂-emitting construction materials, including cements, concretes, and polymer composites from coal by-products. Dr. Robl is the author of more than 150 technical reports and publications, as well as four patents. He has more than 30 years of energy research experience related to coal utilization and has been the principal investigator on projects for the U.S. Department of Energy, the National Science Foundation, and NATO. He is a member of the University of Kentucky graduate faculty and is a director of the American Coal Association and co-chairman of the World of Coal Ash International Symposium. He earned his PhD in geology from the University of Kentucky.

BIOGRAPHIES

Clay Rogers

Mr. Clay L. Rogers is the chief of the Intelligence Branch, Counterterrorism Division (CTD), Federal Law Enforcement Training Center (FLETC). He has been an instructor for the FLETC since 2001 and has instructed in the Behavioral Science Division and the Enforcement Operations Division. Prior to working at FLETC, he was a law instructor for the U.S. Border Patrol Academy located in Glynco, Georgia; a senior border patrol agent in Calexico, California; and a border patrol agent in Falfurrias, Texas. He earned his BS degree from the University of Georgia, his Master of Education degree from Troy University, and is currently a PhD candidate at the Michigan State University in a joint program between the School of Criminal Justice and the Department of Fisheries & Wildlife.

Bethann Rooney

Ms. Bethann Rooney is the manager of port security for the Port Authority of New York and New Jersey. She is responsible for implementing and managing a comprehensive port security program to avoid and/or minimize losses associated with natural or manmade disasters or criminal activity. Ms. Rooney works with local stakeholders and federal, state, and local law enforcement agencies to develop initiatives to address the areas of awareness, prevention, protection, response and recovery including Operation Safe Commerce, port security grants, demonstrations of new technology, and the preparation of security plans and vulnerability assessments. Actively involved in the legislative and regulatory processes, Ms. Rooney has often been called upon to testify before Congress regarding port and maritime security. Ms. Rooney is a graduate of the State University of New York Maritime College with a bachelor's degree in marine transportation, a master's degree in international transportation management, and qualifications as a Third Mate.

Heather Rosoff, PhD

Dr. Heather Rosoff is a post doctoral researcher at the U.S. Homeland Security Center for Risk and Economic Analysis of Terrorism Events (CREATE). Her research focuses on evaluating the risks and uncertainties of a dirty bomb attack on the ports of Los Angeles and Long Beach, estimating the likelihood of terrorist attacks by modeling terrorist objectives and values, and evaluating the public perception of terrorist threats through survey methods and modeling of public perceptions and values. She completed her doctoral degree in public policy at the University of Southern California's (USC) School of Policy Planning & Development and master's degree in system, safety and security at USC's Viterbi School of Engineering this past spring.

Dan Roth, PhD

Dr. Dan Roth is the director of the Center for Multimodal Information Access and Synthesis at the University of Illinois at Urbana-Champaign (UIUC) and the research director of CCICADA, a DHS center of excellence on advanced data analytics. He is a professor in the Department of Computer Science at UIUC and at the Beckman Institute of Advanced Science and Technology. He also holds faculty positions at the statistics and linguistics departments and at the Graduate School of Library and Information Science. Dr. Roth's research spans theoretical and experimental work in machine learning and intelligent reasoning, with a specific focus on learning and inference in natural languages processing and intelligent access to textual information. He has published over 150 papers and has developed a learning system and natural language processing tools that have been used widely in this field. Dr. Roth has given keynote talks at major conferences and is currently an associate editor for the Journal of Artificial Intelligence Research and the Machine Learning Journal. He received his BA summa cum laude in mathematics from the Technion, Israel, and his PhD in computer science from Harvard University.

Ken Ruggiero, PhD

Dr. Ken Ruggiero is an associate professor at the Medical University of South Carolina, National Crime Victims Research and Treatment Center, as well as a research health scientist at the Ralph H. Johnson VA Medical Center. He has led and collaborated on several federally funded projects on development and evaluation of technology-based interventions for traumatic stress populations. Ongoing projects include development and evaluation of web-based self-help interventions for disaster-affected adults and adolescents. He has also served as key collaborator on epidemiologic research on prevalence and risk factors for post-traumatic stress disorder, depression, and substance abuse in national and disaster-affected populations. Dr. Ruggiero received his PhD in clinical psychology from West Virginia University.

Stephen Schaub, PhD

Dr. Stephen Schaub works as senior microbiologist for the Office of Water, U.S. Environmental Protection Agency. In this position he is tasked with providing expert scientific guidance for microbiology issues that arise from implementing drinking water regulations and those for ambient waters. Dr. Schaub worked with the U.S. Army Office of the Surgeon General for 20 years (beginning in 1972) as a water supply research program manager and supervisory research microbiologist. These positions allowed him to research means of protecting soldiers from microbial diseases after exposure to potentially contaminated water supplies. He also developed analytical methods for pathogens and helped develop the current U.S. military/NATO combat drinking water standards. He received his BS in bacteriology and public health from Washington State University and his MS and PhD in microbiology from the University of Texas at Austin.

Timothy L. Sellnow, PhD

Dr. Timothy L. Sellnow is a professor of communication and associate dean for graduate programs in the College of Communications and Information Studies at the University of Kentucky. His primary research and teaching focus is on risk and crisis communication. Much of 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 and Defense, a Center of Excellence sponsored by the Department of Homeland Security. He has also served on several occasions as a risk and crisis communication consultant for the Centers for Disease Control and Prevention. Dr. Sellnow holds a BA from St. Cloud State University, an MA from North Dakota State University, and a PhD from Wayne State University.

Cheryl Seminara, PhD

Dr. Cheryl Seminara is currently the director for the U.S. Department of Homeland Security's Homeland Security Academy and director for the Center for Academic and Agency Outreach. She coordinates seven master's degree programs for DHS employees, co-leads efficiency review efforts on behalf of the DHS Chief Human Capital Officer, and manages strategic partnerships between DHS and academic institutions. Prior to working at DHS, Dr. Seminara was the training lead for the Lead Laboratory for Repository Systems on the Yucca Mountain project, where she designed, developed, and implemented training and organizational initiatives. Dr. Seminara has her own consulting business, specializing in strategic planning and organizational development. Her company's focus is to expand skills and abilities for companies and enhance efficiency within organizations to help them build their business. Dr. Seminara received a BS in communications from Ithaca College, an MS in organizational leadership from National University, and a PhD from Capella University.

BIOGRAPHIES

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 received tenure in 2000. In his current position, 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 and a BS with high honors in geology from Grand Valley State University.

Roshni Sherbondy

Ms. Roshni Sherbondy is the director of business development at Reveal Imaging Technologies, which develops and manufactures automated explosives detection systems. Prior to working at Reveal, she served for almost 15 years as a civilian in the federal government responsible for the research, development, testing, and evaluation of explosives countermeasures technology at the DHS Science and Technology Directorate, Transportation Security Administration, Federal Aviation Administration, and U.S. Army Night Vision Laboratories. Ms. Sherbondy has an MS from George Washington University and a BS from the University of Illinois Champaign-Urbana, both in electrical engineering.

Kathleen Sherrieb, PhD

Dr. Kathleen Sherrieb is a research associate in the Department of Psychiatry at Dartmouth Medical School and the associate director of the National Center for Disaster Mental Health Research, a multi-institution center established to facilitate the rigorous study and effective promotion of resilience and wellness in the context of disaster. Dr. Sherrieb is a social epidemiologist with a concentration in maternal-child health and is currently funded by the National Consortium for the Study of Terrorism and Response to Terrorism to study community resilience, terrorism impacts, and population health outcomes.

Arun Shukla, PhD

Dr. Arun Shukla is Simon Ostrach Professor of Mechanical Engineering 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, Federal Highway Administration, and the Department of Homeland Security, he has developed an internationally recognized research laboratory and research program in experimental solid mechanics. He has served as the technical editor of the international journal *Experimental Mechanics* and currently serves on the editorial boards of several key engineering journals. Dr. Shukla has published 300 papers in refereed journals and proceedings and has authored and edited five books and delivered numerous plenary and keynote lectures around the world. He received his BS from the Indian Institute of Technology-Kanpur, and MS and PhD degrees in experimental fracture mechanics from the University of Maryland.

Gordon W. Skelton, PhD

Dr. Gordon W. Skelton is director of the Center for Defense Integrated Data (CDID), where he is responsible for conducting research in the fields of intelligent decision support, geographic information systems, robotics, wireless sensor networks, and related topics. Dr. Skelton is also an associate professor in the Department of Computer Engineering at Jackson State University. His research focuses on the use of intelligent decision support for use in disaster response, emergency management, risk assessment and planning, environmental management, planetary exploration with multiple rovers, software engineering, and communications interoperability. At present, Dr. Skelton

receives funding for his research from the U.S. Army's Space and Missile Defense Command, NASA, and the U.S. Department of Homeland Security through the SERRI program. Dr. Skelton has published and presented numerous papers on topics related to his research. He holds a PhD in computer science from the University of South Africa.

Darren Slevin

Mr. Darren Slevin works for the Canadian Food Inspection Agency (CFIA) as the food defense specialist in the Food Safety Division, where his duties include developing methodology to assess the vulnerabilities in the Canadian food supply. Prior to accepting that position, he worked for the Defence Science and Technology Organisation in Australia on the detection of chemical and biological weapons. His earlier work with the Commonwealth Scientific and Industrial Research Organisation in Australia focused on developing novel antiviral drug candidates against human respiratory syncytial virus (hRSV). Mr. Slevin was awarded a BS with first class honors in organic chemistry from Deakin University in Victoria, Australia.

Nancy Sottos, PhD

Dr. Nancy Sottos is the Donald B. Willet Professor of Engineering in the Department of Materials Science and Engineering at the University of Illinois Urbana-Champaign. She is also a co-chair of the Molecular and Electronic Nanostructures Research Theme at the Beckman Institute for Advanced Science and Technology and a University Scholar. Dr. Sottos started her faculty career at Illinois after earning a BS and PhD in mechanical engineering from the University of Delaware. Her research focuses on the development of autonomic materials systems that have the ability to achieve adaptation and response in an independent and automatic fashion. Recent highlights of Sottos' work include nanostructured self-healing polymers; self-sensing, mechanochemically active polymeric materials; autonomous materials systems with microvascular networks; fluorescent digital image correlation strain measurement with nanoscale resolution; and metrology for dynamic interfacial adhesion measurement in multilayer thin films. Dr. Sottos has received numerous research and teaching awards and serves on the editorial boards for two scientific journals.

Christine Springer, PhD

Dr. Christine Springer is the executive director of the Executive MS in Crisis & Emergency Management (ECEM) program at the University of Nevada at Las Vegas (UNLV) and a former president of the American Society of Public Administration. She served as director of intergovernmental and community relations for the Salt River Project (Arizona), one of the largest public utilities in the country, and sited nuclear and coal-fired generating stations. Dr. Springer teaches graduate public administration courses at UNLV. She has served as associate professor at Arizona State University in the College of Public Programs, where she co-founded the Nonprofit Management Center degree program. She is an expert in facilitation, marketing, communications, and management processes, and she has authored 10 books and numerous articles on those subjects. She also is a columnist in the P.A. Times on strategic management issues. She holds a PhD in public administration from Indiana University.

Victor Talavera

Mr. Victor Talavera is the program manager for the National Center for Border Security and Immigration at the University of Texas in El Paso (UTEP). He teaches homeland security management and methodology for social science research at the Sergeant Majors Academy at Fort Bliss in El Paso, Texas. He is also an adjunct professor at Park University in Missouri. He has conducted grant-funded research in the areas of public health on the U.S.-Mexican border and behavioral studies concentrated on Mexican immigrants residing within the borderlands of the U.S. southern border. Before joining UTEP, Mr. Talavera began his career in corporate management. He has over 15 years of experience in regional and operations management, international corporate expansion, loss prevention, and asset protection. He holds BA degrees in criminal justice and sociology and an MA in anthropology from the University of Texas in El Paso.

BIOGRAPHIES

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 is working 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.

David C. Tilotta, PhD

Dr. David C. Tilotta is an associate professor of chemistry and housing extension specialist in the Department of Wood and Paper Science at North Carolina State University (NC State). His educational and research interests include analytical methods for the detection of chemicals in solids and liquids, the conversion of cellulosic biomass to fuel, resilient housing, and the contamination of homes as a result of flooding. He joined the faculty of NC State in 2003 after spending 13 years in Grand Forks, North Dakota as a chemistry professor at the University of North Dakota. His experience with the 1997 Red River Valley of the North flood in that city significantly expanded his interests and efforts. He has published numerous papers, co-holds three patents, and received four awards for his research and teaching. He is the former president of the Coalition for Advanced Housing and Forest Products Research Consortium and has been a member of the Resilient Home Program team since 2008. He received his BS degree in chemistry from the University of Iowa and his PhD from Kansas State University.

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.

Mark Tompkins, PhD

Dr. Mark Tompkins is an associate professor of political science at the University of South Carolina where he studies public policy, with particular interests in health and environmental politics, and U.S. government, emphasizing the study of states in the country. He is currently working on several projects, including research related to the nature of the institutional relationship with those served by public agencies and the study of professional accountability and discipline. As a part of the START consortium, Dr. Tompkins is working with Ann Bowman (Texas A&M University) to conduct a study of the role that state governments do (and do not) play in fostering resilience at both the state and local levels. Dr. Tompkins holds a BA in political science from the Ohio State University and MA and PhD degrees in political science from the University of Minnesota.

Juan Carlos Villa

Mr. Juan Carlos Villa is currently manager of the Economics, Trade, and Logistics Program at the Texas Transportation Institute, part of the Texas A&M University System. He is the principal investigator for the Screening, Scanning, and Inspection Processes Project, which is one of five projects supporting the research and educational agenda of the DHS S&T Center of Excellence Program in the National Center for Border & Immigration Security (NCBSI) at the University of Texas at El Paso. Mr. Villa is also participating in the Advanced Security Procedures at Border Crossing Ports of Entry Project. He has extensive experience in border issues and is currently managing several projects identifying technologies to measure border crossing time and delay, and analyzing performance measures at commercial border crossings. Mr. Villa earned a BS in electronic engineering from the Monterey Institute of Technology and an MS in transport studies from the Cranfield Institute of Technology in England.

James 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. He is a retired Army officer with 22 years of active service and has extensive experience in command and control systems, distributed simulation environments, and virtual reality applications. Dr. Wall is currently the principal investigator for several simulation programs related to incident management and emergency response. Other research activities are the development of an information dashboard framework used to support user-defined operational pictures, service-oriented architectures, visual analytics, 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. The Texas A&M University System Board of Regents recently designated Dr. Wall as a Regent's Fellow. 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.

Al Wallace, PhD

Dr. William (Al) Wallace is director of Rensselaer's Center for Infrastructure and Transportation Studies. He is also Yamada Corporation Professor in the Industrial and Systems Engineering Department at Rensselaer Polytechnic Institute, with joint appointments in the Civil and Environmental Engineering and Cognitive Science Departments. His research interests include the development of models for disaster management and codification of an expert's judgment and experience in a form amenable to representation by a complex model. Dr. Wallace has served on the National Research Council's Board on Infrastructure and the Built Environment, as well as the National Research Council Committee on Social Science Research on Disasters. He has received numerous awards, including the 2004 INFORMS President's Award for work that advances the welfare of society. He holds a PhD from Rensselaer Polytechnic Institute.

Mark H. Weir, PhD

Dr. Mark Weir is a post-doctoral researcher at Michigan State University. He works with the Center for Advancing Microbial Risk Assessment (CAMRA) under the mentorship of Dr. Joan B. Rose. He previously studied with Dr. Charles N. Haas at Drexel University, where he received his PhD. Dr. Wilkes also has a BS in environmental engineering from Wilkes University.

Daniel Wendel

Mr. Daniel Wendel has led the StarLogo TNG development team at the MIT Scheller Teacher Education Program (STEP) since 2007. As a member of STEP, Mr. Wendell's research interests center on educational technologies, especially games and simulations. The Imagination Toolbox, his current project, is a collection of game- and simulation-based activities that teachers can use to bring technology into the classroom.

BIOGRAPHIES

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.

Henry Willis, PhD

Dr. Henry H. Willis is a policy researcher at RAND Corporation and a principal investigator with the USC-DHS Center for Risk and Economic Analysis of Terrorist Events (CREATE). His research has applied risk analysis tools to resource allocation and risk management decisions in the areas of public health and emergency preparedness, homeland and national security policy, energy and environmental policy, and transportation planning. He is the author of dozens of publications, book chapters, and op-ed pieces and has testified before Congress as an expert on applying risk analysis to homeland security policy. Dr. Willis' recent research has involved reviewing the risk assessment frameworks related to the National Infrastructure Protection Plan; developing risk-based approaches to allocating homeland security preparedness resources; assessing the costs and benefits of terrorism security measures, and evaluating the impact of public health emergency preparedness grant programs. Dr. Willis holds bachelor's degrees in chemistry and environmental studies from the University of Pennsylvania, an MA in environmental science from the University of Cincinnati, and a PhD in engineering and public policy from Carnegie Mellon University.

Jennifer M. Wozencraft

Ms. Jennifer Wozencraft is director of the Joint Airborne Lidar Bathymetry Technical Center of Expertise (JALBTCX), located at the Stennis Space Center in Bay St. Louis, Mississippi. The JALBTCX mission is to perform operations, research, and development in airborne lidar bathymetry and complementary technologies to support the coastal mapping and charting requirements of the U.S. Army Corps of Engineers (USACE), the U.S. Naval Meteorology and Oceanography Command, and the National Oceanic and Atmospheric Administration (NOAA). JALBTCX staff includes engineers, scientists, hydrographers, and technicians from the USACE Mobile District, the Naval Oceanographic Office, the USACE Engineer Research and Development Center, and NOAA National Geodetic Survey. Ms. Wozencraft holds an MS in marine sciences from the University of South Alabama and has worked with airborne lidar and related technologies for the past 15 years.

Abdul-Aziz Yakubu, PhD

Dr. Abdul-Aziz Yakubu is professor and chair of the Mathematics Department of Howard University. He has research interests in the analysis of mathematical models that arise in the diverse fields of ecology, epidemiology and demography. Dr. Yakubu's interdisciplinary research activities include understanding the role of population dynamics on disease dispersal and persistence; the role of preventative treatments on the incidence of infectious diseases; and the role of subpopulation linkages on the stability and resilience of exploited fisheries. In addition, he has research interests in biosurveillance and early disease outbreak detection. Dr. Yakubu is the author of about 60 scientific papers and co-editor of two books. He has a PhD from North Carolina State University.

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