



STRENGTHEN PREPARE RESPOND

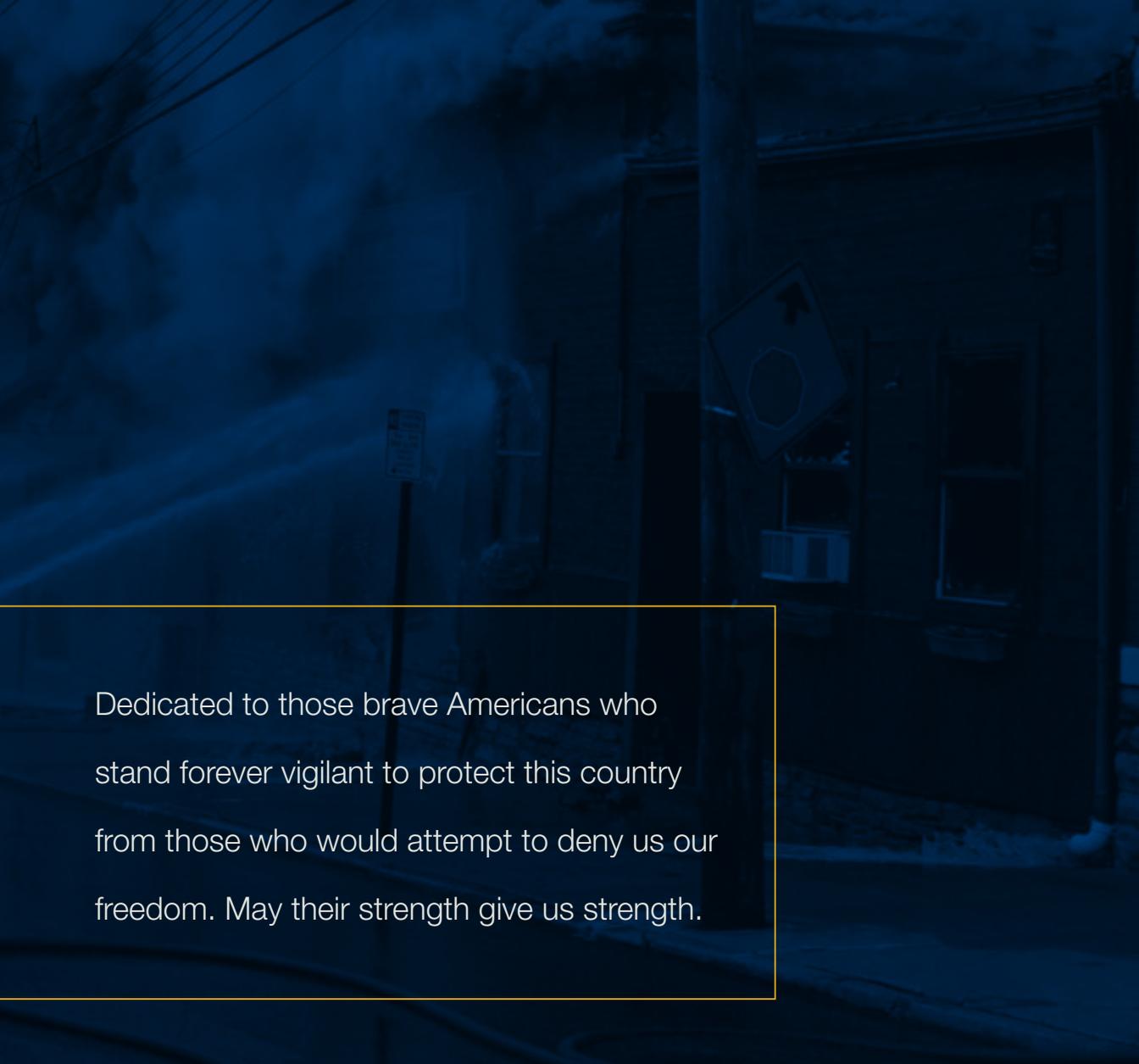
THE INTERAGENCY BOARD
FY 2013 ANNUAL REPORT



“OUT OF MANY, ONE”

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Dedicated to those brave Americans who stand forever vigilant to protect this country from those who would attempt to deny us our freedom. May their strength give us strength.

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Above: Cincinnati (OH) Fire Department
Cover: Cincinnati (OH) Fire Department; Upper Merion Township (PA) Police Department
Back Cover: South Carolina Law Enforcement Division; West County (MO) EMS and Fire Protection District





The IAB Celebrates 15 Years

**"FOR NO GREATER CAUSE EXISTS TODAY THAN THAT EMBRACED BY OUR NATION'S
RESPONDERS IN TAKING THE FRONT LINE AND STANDING EVER VIGILANT TO PROTECT
THIS COUNTRY FROM THOSE WHO WOULD ATTEMPT TO DENY US OUR FREEDOM."**

*Lt. Col. Adrian Bogart
1999 InterAgency Board Annual Report*

During the Fall 2013 Board Meeting, the IAB celebrated its 15th Anniversary. One of the founding members, Lt. Col. Adrian Bogart, provided a keynote founders briefing and is pictured above with other founding members who were in attendance.

Above photo (left to right): Dr. Sandy Bogucki, Branford (CT) Fire Department; Lt. Col. Adrian Bogart, U.S. Army Special Forces; Mr. Joseph Booth, Louisiana State University, The Stephenson Disaster Management Institute; retired Colonel Jay Steinmetz, Consequence Management Program Integration Office; Assistant Chief A.D. Vickery, Seattle (WA) Fire Department; Dr. John Sullivan, Los Angeles County (CA) Sheriff's Department; retired Battalion Chief Jeff Marcus, Los Angeles (CA) Fire Department; and Mr. Rich Duffy, International Association of Fire Fighters.



In Memoriam



CAPTAIN TECARIE MARIE CZARNECKI

Captain Tecarie Marie Czarnecki, age 43, of St. Augustine, Florida, passed away at Tallahassee Memorial Hospital from injuries sustained in an accident that occurred on the way to a training event in Tallahassee. Captain Czarnecki was born in Ann Arbor, Michigan and grew up in New Smyrna Beach, Florida. She was a 1988 graduate of N.S.B. High School and enlisted in the Florida Army National Guard in December 1993 as a Medical Specialist. She continued her education and later graduated with a Bachelors degree from the University of Central Florida in 1999, and then obtained a Masters from Indiana University of Pennsylvania. With a deep commitment to serving her country, Captain Czarnecki graduated at the top of her class from the Florida National Guard Officer Candidate School in 2003, and was commissioned as a Military Intelligence Officer. She was assigned to the 44th Weapons of Mass Destruction Civil Support Team in July 2005 where she served as the Nuclear Medical Science Officer. Captain Czarnecki was highly skilled at her job and loved serving her country. Captain Czarnecki was a member of the IAB and served in the Science & Technology (S&T) SubGroup from October 2011 through September 2013 and was a key subject matter expert on Hazardous Materials (HazMat) sampling and CBRN response operations. She will be deeply missed by the S&T SubGroup and all who had the privilege of knowing her. She is survived by her parents, Betty and Mark Armstrong of Savannah, GA., her partner, Kevin McNaught, and children, Hallie and Carson of St. Augustine, her Godson, Ethan Lemand, and his parents who were Tecarie's lifelong friends, Erick and Kristie LeMand of New Smyrna Beach, Florida.

IAB



Adelphi University

Arizona State Police, Department of Public Safety, Bomb Squad

Arlington County (VA) Fire Department

ASTM International

Boca Raton (FL) Police Department

Boston (MA) Fire Department

Branford (CT) Fire Department

California Department of Corrections & Rehabilitation, Office of Correctional Safety, Emergency Operations Unit

Canadian Police Research Centre

Carrollton (TX) Fire Rescue

Cecil County (MD) Department of Emergency Services

Charleston County (SC) Sheriff's Office

Charlotte (NC) Fire Department

Chicago (IL) Fire Department

Chicago (IL) Police Department

Cincinnati (OH) Fire Department

City of Plantation (FL) Fire Department

City of San Antonio (TX) Fire Department

City of Seattle (WA)

City of Troy (MI) Police Department

City of Tulsa (OK)

Combating Terrorism Technical Support Office, Technical Support Working Group

Cook County (IL) Department of Homeland Security & Emergency Management

County of Powell (MT)

Cuyahoga County (OH) Department of Justice Affairs

Dartmouth College

Defence R&D Canada, Centre for Security Science

Delaware Emergency Management Agency

Department of Defense, Chemical and Biological Defense Program

Department of Defense, Joint Program Executive Office for Chemical and Biological Defense, Joint Project Manager Guardian

Department of Defense, Office of the Assistant Secretary for Defense, Domestic Preparedness Support Initiative

Department of Health & Human Services, Office of the Assistant Secretary for Preparedness & Response, Office of Preparedness and Emergency Operations

Department of Health & Human Services, Office of the Assistant Secretary for Preparedness & Response, National Disaster Medical System, National Veterinary Response Team 2

Department of Health & Human Services, Assistant Secretary for Preparedness & Response, Emergency Care Coordination Center

Department of Homeland Security, Customs and Border Protection

Department of Homeland Security, Domestic Nuclear Detection Office

Department of Homeland Security, Federal Emergency Management Agency, CBRNE Branch

Department of Homeland Security, Federal Emergency Management Agency, Grant Programs Directorate

Department of Homeland Security, Federal Emergency Management Agency, National Preparedness Directorate

Department of Homeland Security, Federal Emergency Management Agency, National Preparedness Directorate, National Integration Center

Department of Homeland Security, Federal Emergency Management Agency, Office of Policy & Program Analysis

Department of Homeland Security, Federal Emergency Management Agency, Responder Knowledge Base

Department of Homeland Security, National Protection and Programs Directorate, Office of Infrastructure Protection, Emergency Services Sector

Department of Homeland Security, Office of Health Affairs, BioWatch Program

Department of Homeland Security, Office of Health Affairs, Medical First Responder Coordination Branch

Department of Homeland Security, Science & Technology Directorate, Homeland Security Enterprise and First Responders Group

Department of Homeland Security, Science & Technology Directorate, First Responder Technology Program

Department of Homeland Security, Science & Technology Directorate, Acquisition Support and Operations Analysis Group, Office of Standards

CHAMPIONS



Department of Homeland Security,
Transportation Security Administration

Department of Justice, Office of Justice
Programs, Bureau of Justice Assistance

Department of Justice, Office of Justice
Programs, National Institute of Justice

Department of Veterans Affairs

DeWitt (NY) Fire District

District of Columbia Fire and Emergency
Medical Services

Emergency Services Coalition for Medical
Preparedness

Fairfax County (VA) Fire and Rescue
Department

Fairfax County (VA) Police Department,
Bomb Squad

Fairfax County (VA) Police Department,
SWAT (Special Weapons and Tactics)

Federal Bureau of Investigation, Technical
Hazards Response Unit

Florida National Guard, 44th Civil Support
Team

Georgetown University

Grand Rapids (MI) Fire Department

Homeland Security Studies and Analysis
Institute

Huntingdon County (PA) Emergency
Management Agency

Inova Fairfax Hospital

International Association of Chiefs of Police

International Association of Emergency
Managers

International Association of Emergency
Medical Services Chiefs

International Association of Fire Fighters

International Safety Equipment Association

Intertek Testing Services

Kent (WA) Fire Department, Kent Fire Training
Academy

Lake County (FL) Fire Academy

Las Vegas (NV) Office of Emergency
Management

Lawrence Livermore National Laboratory

Long Island University

Los Angeles (CA) Fire Department

Los Angeles (CA) Police Department

Los Angeles (CA) Police Department,
Emergency Services Division

Los Angeles County (CA) Fire Department

Los Angeles County (CA) Sheriff's
Department

Louisiana Poison Center

Louisiana State University, Stephenson
Disaster Management Institute

Massachusetts Department of Fire Services
Massachusetts Department of Public Health,
Bioterrorism Response Laboratory

Merionette Park (IL) Fire Department

Miami-Dade (FL) County Police Department

Montclair (NJ) Police Department

Montgomery County (MD) Fire and Rescue
Service

Mount Weather (VA) Fire & Rescue

Mount Erie (WA) Fire Department

National Bomb Squad Commanders
Advisory Board

National Defense University

National Emergency Management
Association

National Fire Protection Association

National Guard Bureau, Civil Support Team

National Guard Bureau, Combating
Weapons of Mass Destruction (WMD)
Division

National Guard Bureau, United States Army
CBRN School

National Institute of Occupational Safety
and Health, Emergency Preparedness and
Response Office

National Institute of Occupational Safety
and Health, National Personal Protective
Technology Laboratory

National Institute of Standards and
Technology

National Institute of Standards and
Technology, Law Enforcement Standards
Office

National Institute of Standards and
Technology, Standards Services Group

National Institutes of Health, National Institute
of Environmental Health Sciences

National Tactical Officers Association

Naval Postgraduate School, Center for
Homeland Defense and Security

New Castle County (DE) Department of
Public Safety, Emergency Medical Services
Division

IAB CHAMPIONS

CONTINUED



New Windsor (NY) Police Department

New York City (NY) Fire Department

*New York City (NY) Fire Department,
Office of Medical Affairs*

*New York (NY) Police Department,
Counterterrorism Bureau*

*New York State Department of Public Health,
Wadsworth Center*

New York State Police

*Ohio Funeral Directors Association, Mortuary
Response Team*

*Ohio Task Force 1, FEMA Urban Search &
Rescue*

*Orange County (CA) Fire Authority and
Health Care Agency Emergency Medical
Services (EMS)*

Paramedic Association of Canada

Park County (CO) Sheriff's Office

Phoenix (AZ) Fire Department

Pineville (NC) Fire Department

*Placer County (CA) Health and Human
Services*

*Rhode Island Department of Health
Laboratory*

*Sacramento County (CA) Sheriff's
Department*

Safety Equipment Institute

Salem (NY) Volunteer Fire Department

Santa Clara County (CA) Sheriff's Office

Sarasota County (FL) Fire Department

Sarasota County (FL) Sheriff's Office

Seattle (WA) Fire Department

Seattle (WA) Police Department

Snohomish County (WA) Fire District #7

South Carolina Law Enforcement Division

South Central (PA) Regional Task Force

Stautzenberger College

Underwriters Laboratories

*United States Army Chemical Materials
Activity*

*United States Army Maneuver Support
Center*

*United States Army Natick Soldier Center
Research Development and Engineering
Center (RDEC)*

United States Army Public Health Command

United States Army Research Laboratory

*United States Army Training and Doctrine
Command*

United States Coast Guard, Seventh District

*United States Department of Agriculture,
Animal Plant Health Inspection Service,
Animal Care Emergency Programs*

*United States Environmental Protection
Agency*

*United States Fire Administration, National
Fire Academy*

*United States Forest Service, National
Interagency Fire Center*

United States Marshals Service

*United States Navy, Commander Naval
Surface Forces, N01H/N45 TMIT*

*United States Navy, Naval Surface Warfare
Center Dahlgren Division, Mission Assurance
Division*

*United States Northern Command, North
America Aerospace Defense Command*

University of Connecticut

*Upper Merion Township (PA) Police
Department*

Walker County (GA) Emergency Services

Washington Metro Transit Police Department

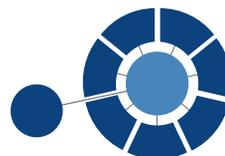
*Washington Regional Threat and Analysis
Center*

*West County (MO) EMS & Fire Protection
District*

*Yale University, Department of Emergency
Medicine*

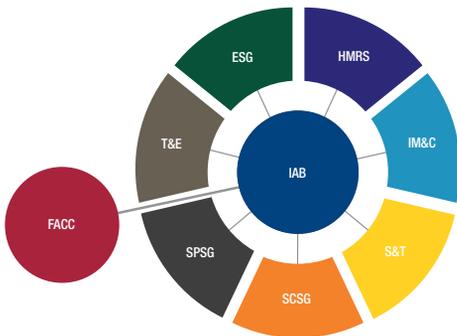
York County (ME) Emergency Management

THE INTER AGENCY BOARD





“OUT OF MANY ONE”



■	The InterAgency Board (IAB)
■	Federal Agency Coordinating Committee (FACC)
■	Equipment SubGroup (ESG)
■	Health, Medical, & Responder Safety (HMRS) SubGroup
■	Information Management & Communications (IM&C) SubGroup
■	Science & Technology (S&T) SubGroup
■	Standards Coordination SubGroup (SCSG)
■	Strategic Planning SubGroup (SPSG)
■	Training & Exercises (T&E) SubGroup

IAB Organizational Chart

This section articulates the background, mission, vision, values, and focus of the IAB. It serves as the basis for the IAB’s ongoing strategic planning effort. This information is not static, it evolves as the IAB’s work progresses.

Mission > The mission of the IAB is to strengthen our nation’s ability to prepare for and respond safely and effectively to emergencies, disasters, and chemical, biological, radiological, nuclear, explosive (CBRNE) incidents.

The IAB accomplishes this by:

- Emphasizing interoperability, compatibility, and standardization
- Fostering a multidisciplinary perspective
- Facilitating effective stakeholder partnerships
- Being a credible voice of the responder community

The InterAgency Board (IAB) is a voluntary, collaborative panel of emergency preparedness and response practitioners from a wide array of professional disciplines that represents all levels of government and operational, technical, and support organizations. The IAB provides a structured forum for the exchange of ideas to improve national preparedness and promote interoperability and compatibility among local, state, and federal response communities. Based on direct field experience, IAB members advocate for and assist with the development and implementation of performance criteria, standards, test protocols, and technical, operating, and training requirements for all-hazards incident response equipment with a special emphasis on CBRNE issues. The IAB also informs broader emergency preparedness and response policy, doctrine, and practice.

MISSION:

STRENGTHENING THE NATION'S ABILITY TO **PREPARE** FOR AND **RESPOND** SAFELY AND EFFECTIVELY TO EMERGENCIES, DISASTERS, AND CBRNE INCIDENTS

- Being proactive
- Sharing field operational experiences and practices

Vision > The IAB seeks to be the source for emergency responder insight about any policy, doctrine, practice, standard, research and development program, or training and exercise program that affects interoperability, compatibility, and standardization. The IAB will continue to be a trusted, authoritative, representative, and valid repository of field perspective, operational knowledge, and technical expertise.

Values > The IAB purposely comprises a very diverse body of emergency preparedness and response experts, but is unified by a set of core values that frame its goals, shape its decisions, and guide its actions. These values are:

Ground truth. The IAB is a conduit for direct feedback from responders currently practicing in the field on the front lines of emergency response at all levels of government. The IAB offers an honest, unfiltered, unvarnished view of what responders really do, what they really need, and how federal programs and policies affect them now and will affect them in the future.

Independence. The IAB is an honest broker that aggregates the diverse views of responders. The IAB, as a whole, is unencumbered by particular professional or agency agendas. The IAB's goals and objectives are set by consensus of its representative membership of the federal, state, and local emergency response communities. It is, therefore, broad in scope and able to voice the perspectives, views, and concerns of responders nationwide without undue influence from the particular interests



Photo Courtesy of Office of Correctional Safety

of any one discipline, organization, or professional association.

Credibility. The IAB convenes established experts knowledgeable about emergency preparedness and response issues—particularly related to equipment—including requirements, standards, performance, operability, interoperability, and compatibility. This expertise assists, guides, and informs agencies, associations, and manufacturers seeking to design, develop, test, evaluate, and deploy existing and new equipment and capabilities. It helps organizations that sponsor research and development programs formulate grant guidance and evaluate program effectiveness. It helps response agencies make decisions about equipment by providing insight about performance and operational, training, and maintenance requirements.

Diversity. The IAB is broadly representative of professional response disciplines, sectors, and levels of government, explicitly shunning parochialism in favor of a true multidisciplinary perspective. The IAB is also wide-ranging in the size, type, and geographic location of organizations represented. This enables

the diverse array of public safety professionals to come together as a unified and integrated emergency preparedness and response system.

Collaboration. The IAB provides a forum that allows diverse agencies and perspectives to come together. The IAB is a nexus of disciplines and agencies that allows people to talk to each other and work together to solve problems. This enhances cooperation, reduces redundancy, resolves conflicts, and, thus, improves the safety, efficiency, and effectiveness of programs. This culture of professional openness allows the group to develop viable solutions to equipment standardization and training challenges because all members interact freely, honestly, and without fear of retribution.

Proactive orientation. The IAB identifies local, national, and global trends that affect the response community in order to understand the implications of policy and operational choices. This allows the IAB to help the field adapt early to emerging trends, address looming threats, and take advantage of promising opportunities.

Focus > In support of our mission and values, the IAB pursues the following areas of emphasis:

1. EQUIPMENT

- a. Continually update and sustain the Standardized Equipment List (SEL).
- b. Support the Responder Knowledge Base (RKB).
- c. Identify gaps in capability.
- d. Participate in requirements development processes.
- e. Prioritize equipment needs.

2. HEALTH, MEDICAL, AND RESPONDER SAFETY

- a. Identify gaps and needs for providing safe and effective care.
- b. Evaluate the efficacy and appropriateness of existing and future health and safety related products, processes, practices, and information.
- c. Serve on IAB subgroups that address health and safety.
- d. Develop recommendations for identifying, reducing or eliminating responder safety hazards, preventing injuries, and reducing mortality.
- e. Develop a medical concept of operations for planning, managing, and recovering from incidents that cause physical and/or physiological harm.
- f. Analyze threat scenarios and recommend ways to protect the health and safety of responders and victims.

3. INFORMATION MANAGEMENT AND COMMUNICATIONS

- a. Identify needs and gaps in the Responder Information Environment.
- b. Identify gaps in available information technology needed to support responders.
- c. Participate in efforts to identify gaps, and improve systems and strategies for information management, including the gathering/collection, administration, sharing analysis/

visualization, and protection of information.

- d. Identify gaps and challenges related to information collection, classification, storage, security, and dissemination that affect incident prevention and emergency preparedness response.
- e. Educate responders to properly collect, receive, and share essential elements of information in accordance with National Strategy for Information Sharing.
- f. Identify gaps and provide decision support material for interoperable communications technologies, policies, and strategies.

4. SCIENCE AND TECHNOLOGY

- a. Identify innovative government- and industry-based technologies applicable for use by emergency responders.
- b. Promote the transition of technologies from the R&D community and industry into commercially available capabilities for emergency responders.
- c. Collaborate on requirements development processes.
- d. Promote research, development, testing, and evaluation (RDT&E) agendas to meet emergency responder needs.

5. STANDARDS COORDINATION

- a. Identify and document applicable standards, from internal (IAB) and external sources.
- b. Recommend potential solutions in terms of standards, equipment development, training, practices, or policies.
- c. Prioritize standards requirements and related interoperability and compatibility issues.
- d. Identify existing standards, performance requirements, and test methods that could streamline the development of new standards or be modified to meet the needs of responders.
- e. Identify potential conflicting requirements and facilitate reconciliation of these issues.
- f. Participate in standards

development and revision processes.

- g. Inform emergency responders about appropriate application of standards.
- h. Draft and disseminate studies, white papers, and other reports on standards, interoperability issues, and compatibility issues.
- i. Recommend and promote the adoption and use of standards.
- j. Identify and inform responders about relevant standards activities, comment periods, and programs that address interoperability and compatibility issues.

6. STRATEGIC PLANNING

- a. Inform policymakers about operational requirements and environments.
- b. Provide insight about the field context, operations, and tactics of emergency response.
- c. Participate in forums working to develop or improve policy, doctrine, and practice.
- d. Help responders understand emerging policy, doctrine, and practice.
- e. Identify, share, and validate smart practices and lessons learned.
- f. Assist with vetting, testing, evaluating, and launching emergency response initiatives.

7. TRAINING AND EXERCISES

- a. Conduct a gap assessment of Emergency Support Functions and identify performance improvements.
- b. Assist in developing training and exercise programs.
- c. Provide end-user guidance, operational lessons learned, and suggestions for improving training and exercise programs.
- d. Facilitate implementing training and exercise programs and standards that support individual competencies and organizational capabilities.
- e. Advocate for standardized national guidance for responder and equipment training and exercises.

STRUCTURE

The IAB is organized into a Leadership Team, one committee, and seven SubGroups. The Federal Agency Coordinating Committee is chaired by a federal representative and composed of all supporting Federal Government partner representatives. Each SubGroup is co-chaired by a state and local first responder and a federal representative, and staffed with members and SMEs in that SubGroup's area of expertise. In addition, each SubGroup is responsible for maintaining its subsection of the SEL.

The information below reflects the IAB leadership team in place for the majority of Fiscal Year 2013. Elections are conducted during the summer meeting, every May/June. For the current list of IAB Leadership Team and Co-Chairs, please visit the IAB public website at www.iab.gov.

THE INTERAGENCY BOARD LEADERSHIP TEAM

The IAB Chair and Deputy Chairs are selected from the ranks of the state and local membership. These representatives administer, manage, and facilitate the actions of the IAB.

STATE & LOCAL CHAIR

Jay Hagen, Seattle (WA) Fire Department

STATE & LOCAL DEPUTY CHAIRS

John Delaney Jr., Arlington (VA) Fire Department
David McBath, New York (NY) State Police

FEDERAL AGENCY COORDINATING COMMITTEE

The FACC interfaces between the IAB and sponsoring federal agencies. This committee brings together the interests and initiatives of the federal community with the first responder community.

FEDERAL CHAIR

William Haskell III, National Institute for Occupational Safety and Health, National Personal Protective Technology Laboratory

EQUIPMENT SUBGROUP

The Equipment SubGroup (ESG) addresses standardization and interoperability issues relating directly to protection, operational, and support equipment for emergency responders. This SubGroup's responsibilities include the maintenance and publication of the IAB SEL, the development of equipment-driven priorities for research and development and standards development, and the coordination with other SubGroups to ensure proper use of equipment in various mission environments.

STATE & LOCAL CO-CHAIR

Douglas E. Wolfe, Sarasota County (FL) Fire Department

FEDERAL CO-CHAIR

William Haskell III, National Institute for Occupational Safety and Health, National Personal Protective Technology Laboratory

HEALTH, MEDICAL, & RESPONDER SAFETY SUBGROUP

The Health, Medical, & Responder Safety (HMRS) SubGroup provides safety guidance to the IAB on health, medical, and responder equipment, supplies, pharmaceuticals, operations, and training needed to respond to CBRNE events. This SubGroup reviews and makes recommendations to the IAB regarding new or modified equipment performance and operational standards.

STATE & LOCAL CO-CHAIR

Dr. Sandy Bogucki, Bradford (CT) Fire Department

FEDERAL CO-CHAIR

Dr. Duane Caneva, Department of Homeland Security, Customs and Border Protection

INFORMATION MANAGEMENT & COMMUNICATIONS SUBGROUP

The Information Management & Communications (IM&C) SubGroup develops and advocates protocols and technologies for effective, timely, accurate, and secure information management and communications capabilities, addressing the full range of incidents at all phases of operations. This SubGroup identifies



Photo Courtesy of Cincinnati (OH) Fire Department

gaps in the responder information and communication environments and mitigates them by recommending solutions and standards.

STATE & LOCAL CO-CHAIR

Mark Hogan, City of Tulsa (OK)

FEDERAL CO-CHAIR

Mike Tuominen, National Interagency Fire Center, National Interagency Incident Communications Division

SCIENCE & TECHNOLOGY SUBGROUP

The S&T SubGroup identifies interagency first responder research and development requirements and innovative technologies that address CBRNE detection, individual protection, collective protection, medical support, decontamination, communications systems, information technology, and miscellaneous operational support. This SubGroup is responsible for developing and updating the IAB S&T Requirements Matrix for the SEL, reporting and assessing federal requirement initiatives, and producing the annual IAB priority and demographic survey data.

STATE & LOCAL CO-CHAIR

Douglas Carley, Grand Rapids (MI) Fire Department

FEDERAL CO-CHAIR

Gabriel Ramos, Technical Support Working Group, Combating Terrorism Technical Support Office

STANDARDS COORDINATION SUBGROUP

The Standards Coordination SubGroup (SCSG) coordinates standards projects within IAB, external organizations, and the first responder community, and works to establish minimum performance standards to which critical equipment can be tested, evaluated, and certified. This SubGroup helps to provide first responders with objective guidance for making informed decisions regarding the purchase and proper use of critical equipment in order to instill greater confidence in emerging technologies.

STATE & LOCAL CO-CHAIR

Martin Hutchings, Sacramento County (CA) Sheriff's Department

FEDERAL CO-CHAIR

Philip Mattson, Department of Homeland Security, Science & Technology Directorate, Acquisition Support and Operations Analysis Group, Office of Standards

STRATEGIC PLANNING SUBGROUP

The Strategic Planning SubGroup (SPSG) identifies, monitors, evaluates, and coordinates IAB feedback on strategic national plans, programs, and policy initiatives that affect the emergency responder community. This SubGroup informs policymakers about emergency responders' operational outcomes, interprets emerging policies to coordinate IAB's

position, and maintains a prioritized list of organizations of interest to IAB to continually revise the strategic engagement plan.

STATE & LOCAL CO-CHAIR

Jeff Dulin, Charlotte (NC) Fire Department

FEDERAL CO-CHAIR

Robert Johns, Department of Homeland Security, Domestic Nuclear Detection Office

TRAINING & EXERCISES SUBGROUP

The Training & Exercises (T&E) SubGroup improves responder mission performance by conducting a cross-disciplinary review of—and providing end-user input on—training doctrine, standards, and guidance developed for the first responder community. The T&E SubGroup is responsible for identifying performance improvement needs related to operational, training, and exercise activities, and facilitating the implementation of training and exercise programs that support individual competencies and organizational capabilities.

STATE & LOCAL CO-CHAIR

Gregory G. Noll, CSP, CEM, South Central (PA) Regional Task Force

FEDERAL CO-CHAIR

Wayne E. Yoder, CHMM, Department of Homeland Security, Federal Emergency Management Agency, U.S. Fire Administration, National Fire Academy

LETTER FROM THE CHAIR

I am pleased to present the 2013 IAB Annual Report. In the material that follows, you will read about the men and women that have dedicated their time, talent, and energy towards executing the mission of the IAB: “To strengthen the nation’s ability to prepare for and respond safely and effectively to emergencies, disasters, and CBRNE incidents.” If you have not seen this report previously, you may be wondering: What is the IAB? We are a multi-disciplinary, volunteer working group of emergency preparedness and response practitioners, currently in our fifteenth year of existence. Working together, the members of IAB form a trusted, authoritative, representative, and valid repository of operational knowledge, technical expertise, and “feet on the street” field perspective. We strive to provide a unified voice for the responder community.

As I complete my first year serving as Chair of the IAB, I would like to share a few words of thanks with you. I received a great handoff from outgoing Chair Dave McBath, Staff Inspector from the New York State Police. Under Dave’s leadership, the IAB developed and implemented a strategic plan and work cycle process that continues to show dividends today by improving the IAB’s responsiveness, productivity, and ability to document progress and achievements. I thank Bill Haskell from The National Institute for Occupational Safety and Health (NIOSH) for serving as Chair of the Federal Agency Coordinating Committee and for the oversight and guidance he provided during the past year. Without the sponsorship of our partnering federal agencies, none of the IAB achievements would be possible. I also thank John Delaney from the Arlington (VA) Fire Department and Dave McBath from the New York State Police for their support in the Deputy Chair positions. I applaud the dedication of the 14 SubGroup Federal and State & Local Co-Chairs that make up the IAB Executive Committee. They fill vital leadership roles within the IAB and make significant contributions to our progress on a voluntary basis while successfully fulfilling their professional responsibilities with their home agencies. Their profiles are detailed in the following pages.

As I contemplate the challenges and successes of the previous year, a couple of important thoughts surface. Firstly, I am so proud of my association with the IAB and of the work we are doing. During this past year, we have seen devastating natural disasters, acts of domestic terrorism, and horrible mass violence perpetrated in public settings, not to mention many other noteworthy incidents that continue to provide prevention, response, and recovery challenges for America’s first responders. We are emphasizing interoperability, compatibility, and standardization by fostering a multi-discipline perspective, facilitating effective intergovernmental partnerships, and sharing operational experiences and best practices. I hope that in doing so, we are enhancing the ability of responders to meet future challenges.

Secondly, I believe that the value of the IAB extends beyond the sum of the projects we complete. I believe this because I see the network of professional relationships and communication in action. With 28 years of experience as a first responder, including 10 years focused

on homeland security and emergency preparedness, and the experience of having served on many groups and committees, I can say with certainty that the IAB represents an unparalleled level of coordination and cooperation. The fact that this coordination improves operations across boundaries and levels of government is a source of pride. The IAB has created a unique setting where state and local first responders, working alongside their federal partners, are engaged in ongoing dialogue about equipment, standards, interoperability, training, exercises, and other contemporary issues facing America's first responders.

However, budgetary challenges remain and the entire IAB family, from sponsoring agencies to members and participants, have engaged in some level of belt-tightening. Unfortunately, the terms "sequestration," "furlough days," and "reductions in force" have become commonplace across the nation, at all levels of government. Going forward, we will strive to maintain and strengthen the qualities that make us unique, to be responsive to those we serve, to adapt to the ongoing challenges we face, and to continue to execute our mission. While we may be facing a long, slow climb to economic recovery, we also have been fortunate to have received the support to accomplish a great deal in the past year. I invite you to read more about the IAB and our collective accomplishments in the following pages.

With sincere gratitude,



Jay Hagen
IAB Chair



JAY HAGEN
IAB CHAIR

Deputy Chief, Seattle (WA) Fire Department

Deputy Chief Jay Hagen is currently assigned to the Operations Division of the Seattle Fire Department. Serving in the Deputy 2 position, Deputy Chief Hagen actively supervises 40 high-profile projects, including Post-Incident Review, Tactics and Strategy, and Emergency Planning.

Day to day, Deputy Chief Hagen coordinates the seven on-duty Battalion Chiefs who oversee the 1,100 firefighters spread throughout the city. He also oversees the administration of the highly trained and specialized Technical Teams, including the Marine Emergency Response Team, the Hazardous Materials Response Team, and the Technical Rescue Team. When the President, world leaders, or other dignitaries visit Seattle, Deputy Chief Hagen manages the Department's deployment of fire resources. Moreover, he supervises the largest special events of the 300 that are hosted in Seattle each year, which are attended by tens of thousands of people.

In 2002, Deputy Chief Hagen graduated from the University of Montana with a dual major of Organizational Communications and Business Management. In 2006, he earned a master's degree in Homeland Security and Defense at the Naval Postgraduate School in Monterey, California. The following year, he was selected for a Senior Fellowship at the DHS Office of Grants and Training in Washington, DC.

During his 25-year fire career, Deputy Chief Hagen has served as a training division instructor, Fire Inspector, and as the Emergency Preparedness Officer. Currently, he serves as maritime Security Committee in addition to serving as Chair of the IAB.

DEPUTY CHAIRS



JOHN DELANEY, JR.
IAB DEPUTY CHAIR

Captain II, Arlington County (VA) Fire Department

Captain II John Delaney, Jr., has been a member of the Arlington County Fire Department (ACFD), Arlington, Virginia, for 14 years. Currently, his primary responsibility is team leader of the National Medical Response Team – National Capital Region (NMRT-NCR). The NMRT-NCR is a federally funded weapon of mass destruction response team comprised of over 150 firefighters, paramedics, hazardous material specialists, law enforcement officers, doctors, and nurses from within the Washington metropolitan region. The team functions as an emergency response asset for the region, specializing in mass decontamination, extraction, triage, and treatment. The team is also pre-deployed for high threat, high target events. Extensive coordination and planning is required on the local, state, and federal levels and across multiple response agencies, jurisdictions, and governments.

Captain Delaney has participated in several large scale regional and national emergencies, including the 1998 Florida wildfires, Hurricane Charley in 2004, the 2001 anthrax attack at the Senate Office Buildings, and the September 11, 2001, attack on the Pentagon. His education and training in weapons of mass destruction, hazardous materials, and technical rescue response has allowed Delaney to contribute on numerous local, regional, and national initiatives and committees focusing on a variety of first responder and homeland security matters. He is a graduate of James Madison University and, in 2008, he received his master's degree in Homeland Security from the Naval Postgraduate School. Captain Delaney resides in Ashburn, Virginia with his wife and three children.



DAVID MCBATH
IAB DEPUTY CHAIR

Staff Inspector, New York State Police

Staff Inspector David McBath is a 29-year veteran in law enforcement, currently assigned to the Field Command (operations) section at New York State Police Headquarters in Albany, New York. He assists in the statewide management of State Police uniform force and special operations activities. He is nationally certified as an emergency manager (CEM), and has degrees in criminal justice and fire protection technology. He serves as Deputy Chair and previously served as the IAB chair from May 2010 to June 2012 and as a member of the Equipment SubGroup. He has also served on the National Institute of Justice Special Technical Committee for Law Enforcement CBRNE PPE Standards Development. He is a member of the International Association of Chiefs of Police (IACP), Homeland Security Committee, and has represented IACP as a subject matter expert on multiple federal agency first responder working groups.

FY 2013 HIGHLIGHTS

(OCTOBER 2012 – SEPTEMBER 2013)

OCTOBER | NOVEMBER | DECEMBER

OCTOBER 2012

Published 2012 Research & Development Priority List.

Published 2012 Standards Development Priority List.

NOVEMBER 2012

Presented the Evaluation of Hazards in the Post-Fire Environment at the 2012 Combating Terrorism Technical Support Office, Personal Protective Equipment (PPE) Workshop.

Authored, submitted, and distributed IAB Critical Drug Shortage Letter addressed to the Honorable Kathleen Sebelius, Secretary of the Department of Health and Human Services.

DECEMBER 2012

Published the IAB FY 2012 Annual Report and the SEL. The SEL is a voluntary guideline of equipment recommended by the IAB for preparing and responding to CBRNE and all-hazards events, linked to the DHS Authorized Equipment List (AEL).

Conducted HazMat training gap analysis for standardized bio-sampling training programs and developed a draft white paper with recommendations on a path forward. This analysis was based on the results of three T&E surveys developed to identify gaps in current HazMat training with respect to responding to a potential bio-threat scenario within HazMat, laboratory, and law enforcement training.

JANUARY | FEBRUARY | MARCH

JANUARY 2013

Reviewed and commented on DHS, FEMA training and exercise document.

FEBRUARY 2013

Hosted the IAB Stakeholder Workshop on Evaluation of Hazards and Operations in the Post-Fire Environment. The workshop was conducted at the request of NIOSH and with the support of the Fire Protection Research Foundation (FPRF). Presenters and participants from the following organizations were in attendance – Chicago (IL) Fire Department, Department of Defense (DOD) Technical Support Working Group, Firefighter Cancer Support Network, International Association of Arson Investigators, International Association of Fire Chiefs, Massachusetts Fire Academy, National Fallen Firefighters Foundation, National Institute of Standards and Technology, National Volunteer Fire Council, New Haven (CT) Fire Department, Queensland Fire and Rescue Service, Portland (OR) Fire and Rescue, PHI Air Medical, University of Arizona, University of Cincinnati, University of Illinois Fire Service Institute, and Worcester Polytechnic Institute.

Held webinar, sponsored by the DHS, Science & Technology Directorate, that addressed Ambulance Interior Decontamination.

MARCH 2013

Continued to support the Canadian Police Research Centre (CPRC) with the Canadian Recommended Equipment List (REL). The IAB provides system and subject matter assistance in creating a parallel SEL tailored to the needs of the Canadian emergency response community. The CPRC officially launched the online version of the REL in March of 2013.

Assisted in the testing of the Emergency Responder Health Monitoring and Surveillance (ERHMS) online course for the Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

APRIL | MAY | JUNE

JUNE 2013

Produced *Top Homeland Security Issues: IAB's National Priorities for the Next Four Years* white paper.



Hosted the IAB HMRS Stress Management Workshop to review current best practices for stress management programs and process for the emergency services sector (ESS) personnel. The workshop welcomed the following experts in stress management – Dr. Richard Gist, National Fallen Firefighter Foundation; Dr. Merritt Schreiber, Center for Disaster Medical Services, University of California Irvine School of Medicine; Dr. James Curtis West, Jr., Department of Psychiatry, Uniformed Services University of Health Services.

Conducted “Cybersecurity Vulnerabilities for Critical Infrastructures and Key Resources during Disasters” survey, in conjunction with the Louisiana State University Stephenson Disaster Management Institute. The purpose of the survey was to analyze and chart the challenges in information sharing as it pertains to situational awareness and identify the challenges experienced while protecting critical infrastructure and key resources during cyber events.

Provided input to the National Guard Bureau (NGB) – Combating Weapons of Mass Destruction and the Training and Education Joint Staff Directorate. Provided subject matter expertise for the development of NGB training and education standards for military members assigned to staff the National Guard CBRN Response Enterprise (CRE).

JULY | AUGUST | SEPTEMBER

JULY 2013

Participated in the National Fire Protection Agency (NFPA) Technical Committee on Hazardous Materials Protective Clothing and Equipment survey, which sought suggestions in the review of the requirements of NFPA 1991, Standard on Vapor-Protective Suits for Hazardous Material Emergencies.

AUGUST 2013

Completed the *Emergency Services Sector Portal Review*.

Provided presentation at the National Guard Bureau CBRN Responder Working Group Speed of Response Lessons Learned Panel focusing on the Moore, OK, tornado.

Completed phase one of the IAB Modeling, Simulations, and Simulators E-Tool on the IAB public website. This E-Tool is a guide to help emergency response organizations determine the most appropriate technology given their objectives and constraints. Phase two is set to begin mid FY14.

Participated in Project Responder 4, a DHS S&T initiative to determine the future technological needs of emergency responders, to include the Prioritization Protocol.

SEPTEMBER 2013

Developed the mechanisms for soliciting Standards requirements and revised process for adopting Standards. Five standards were adopted:

- » ASTM E2902-12, Standard Practice for the Measurement of Body Armor Wearers
- » NFPA 1582, Standard on Comprehensive Occupational Medical Program for Fire Departments
- » ASTM E2852-13, Standard Guide on Acquisition, Maintenance, Storage, and Use of Hazardous Material Detection Instrumentation
- » ASTM E2885-13, Standard Specification for Handheld Point Chemical Vapor Detectors for Homeland Security Applications
- » ASTM E2933-13, Standard Specification for Stationary Point Chemical Vapor Detectors for Homeland Security Applications

FY 2013 HIGHLIGHTS

CONTINUED

Photo Courtesy of Seattle (WA) Fire Department

THROUGHOUT FY 2013

OCTOBER 2012 - SEPTEMBER 2013

IAB Leadership Team conducted outreach to current and potential federal partners to include, DHS Domestic Nuclear Detection Office (DNDO), DHS Office of Infrastructure Protection (IP), DHS S&T First Responders Group (FRG), FEMA Grant Programs Directorate (GPD), FEMA National Preparedness Directorate (NPD), DOD Office of the Assistant Secretary of Defense, DOD Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD), Department of Justice (DOJ) National Institute of Justice (NIJ), Department of Transportation Pipeline and Hazardous Materials Safety Administration, Transportation Security Administration (TSA), and the U.S. Environmental Protection Agency (EPA).

Membership or SME participation at various conferences and working groups:

- » Association of American Railroads Seminar on Chemical Release Dispersion Modeling and the First Responder
- » Canadian CBRNE REL Launch Meeting
- » Committee for Tactical Emergency Casualty Care
- » Counterterrorism Quadrilateral-Technical Response Group Capabilities Exercise (CAPEX) Visitors Day
- » Department of Homeland Security, Science & Technology Directorate, Project Responder 4 Virtual Meetings
- » Emergency Services Coordinating Council Meeting
- » Emergency Services Sector Critical Infrastructure Partnership Advisory Council
- » Federal Communications Commission (FCC) Emergency Response Interoperability Council Public Safety Advisory Committee (ERIC PSAC)
- » Federal Emergency Management Agency Improvised Nuclear Device (IND) Implementation Work Group
- » First Responder Network Authority (FirstNet)
- » Geographic Information Systems for Special Events Webinar
- » Jack Rabbit Meeting
- » Joint Civil & Department of Defense CBRN Symposium
- » Joint Inter-Agency Field Experiment (JIFX)
- » Laboratory Response Network National Meeting
- » National Bomb Squad Commanders Advisory Board
- » National Homeland Security Conference
- » National Occupational Research Agenda (NORA) Public Safety Sector Council Meeting
- » White House – National Security Staff (NSS) Improvised Explosive Device (IED) PPE and Medical Working Group
- » State, Local, Tribal and Territorial Government Coordinating Council
- » Technical Support Working Group (TSWG) PPE Conference



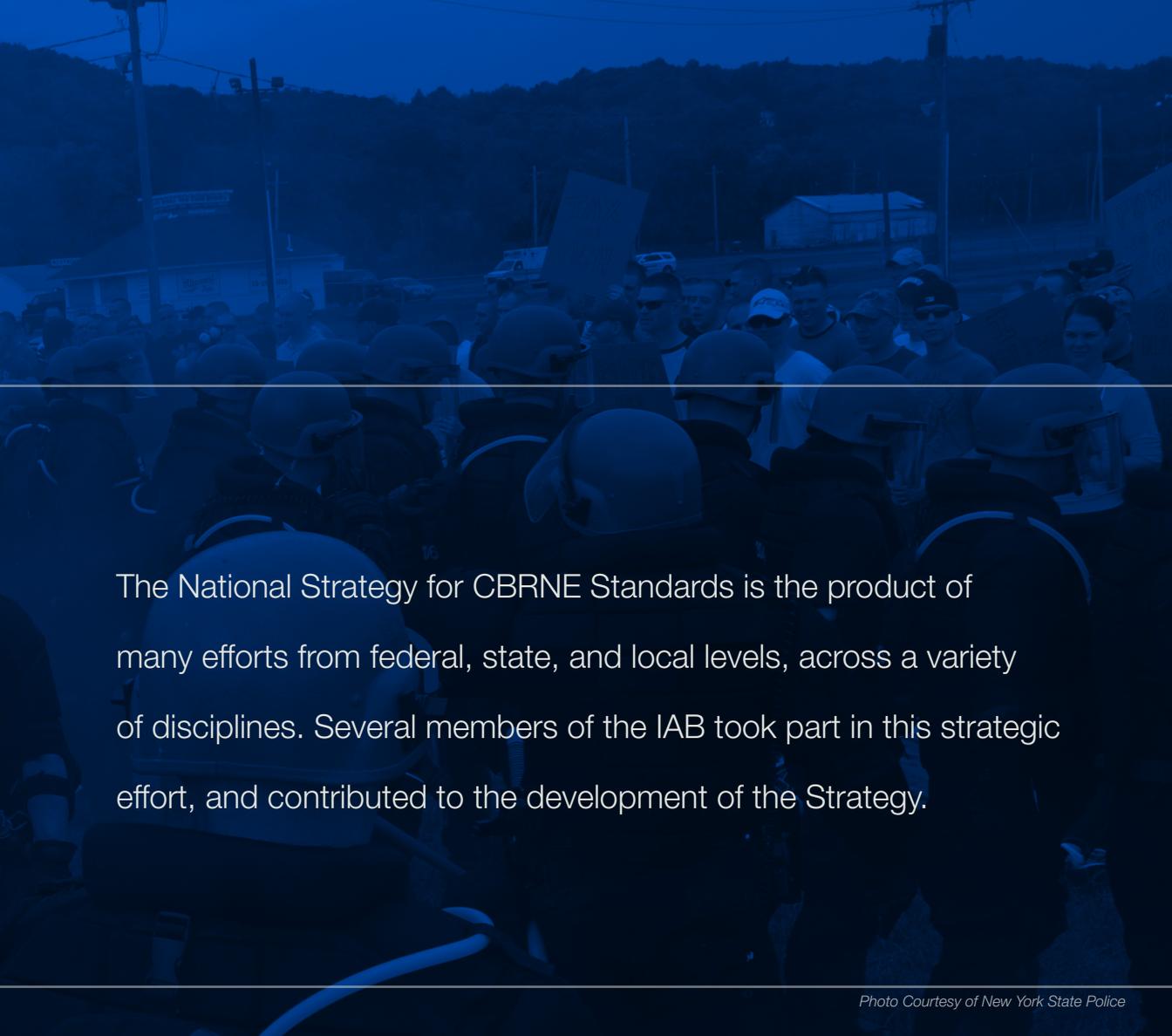
NATIONAL STRATEGY FOR CBRNE STANDARDS

In pursuit of the President's goal of national preparedness, it is essential that the nation has reliable CBRNE countermeasures equipment that can be used with confidence for the protection of life, health, property, and commerce. The Office of Science and Technology Policy, in collaboration with the Departments of Homeland Security and Commerce, has released the National Strategy for CBRNE Standards, which describes the federal vision and goals for the coordination, prioritization, establishment, and implementation of CBRNE equipment standards by 2020.

This Strategy—created by the Cabinet-level National Science and Technology Council, which is the principal means within the Executive Branch for

coordinating interagency science and technology policies—represents the federal consensus regarding the development of standards for CBRNE equipment used by federal, state, local, and tribal responders for CBRNE detection, protection, and decontamination. The Strategy is the result of a process that included the identification of current research efforts and practices with respect to performance specifications and test methods, as well as standards-development needs of all relevant federal entities.

The Strategy concludes that achieving the following goals is key to ensuring technical performance and interoperability of CBRNE technology, appropriate equipment deployment, and effective user training:



The National Strategy for CBRNE Standards is the product of many efforts from federal, state, and local levels, across a variety of disciplines. Several members of the IAB took part in this strategic effort, and contributed to the development of the Strategy.

Photo Courtesy of New York State Police

- Establish an interagency group for CBRNE standards to promote the coordination of such standards among federal, state, local, and tribal communities
- Coordinate and facilitate the development and adoption of CBRNE equipment performance standards
- Coordinate and facilitate the development and adoption of CBRNE equipment interoperability standards
- Promote enduring CBRNE standard operating procedures (SOPs)
- Establish voluntary CBRNE training and certification standards and promote policies that foster their adoption
- Establish a comprehensive CBRNE equipment testing and evaluation infrastructure and capability to support conformity assessment standards

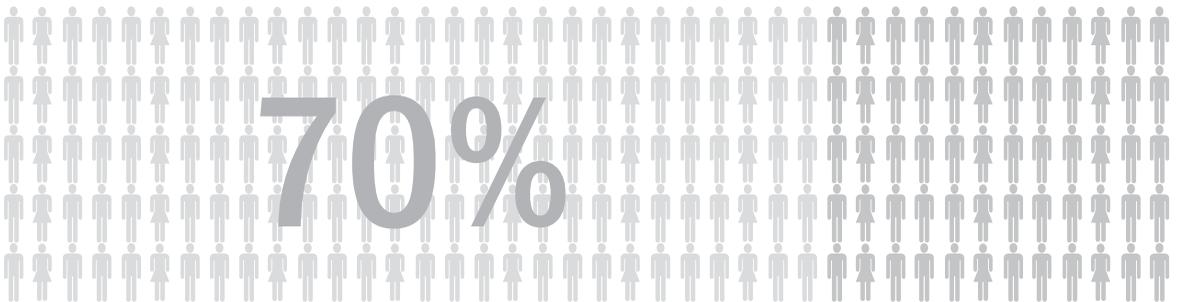
The first of these goals was achieved on April 15, 2011, with the establishment of the Subcommittee on CBRNE Standards under the National Science and Technology Council's Committee on Homeland and National Security. The Subcommittee has already begun to create a plan for achieving the Strategy's remaining goals.

<http://www.whitehouse.gov/blog/2011/08/30/path-emergency-reponse-standards>

Every year, the IAB conducts an annual demographic survey to capture in-depth information about FY13 participants. The results of the 2013 IAB Demographics Survey are shown this section.

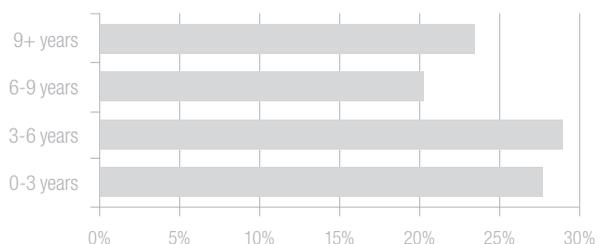
DEMO GRAPHICS

The IAB community comprises approximately 200 dedicated professionals. Roughly seventy percent of the IAB participants have first responder backgrounds.



LENGTH OF SERVICE WITH THE IAB

Membership is comprised of participants who have been affiliated with the IAB for differing amounts of length, with the majority of participants serving with the IAB for 3-6 years.



State, local, and federal responders from various disciplines, as defined by the Homeland Security Presidential Directives, are represented. These disciplines include fire service, law enforcement, medical/health, emergency management, emergency communications, and military.

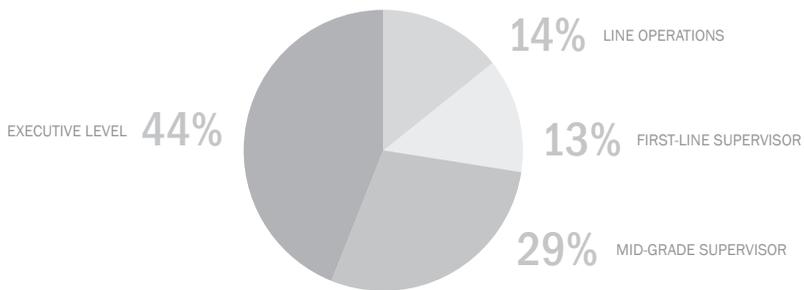
ACTIVE FIRST RESPONDER DISCIPLINE BREAKDOWN



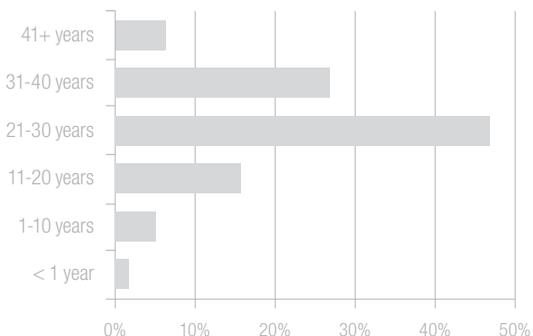
*Others include: Incident Management and Veterinary

The largest percentage of membership currently works at the executive level, which includes Chief, Deputy Chief, or Emergency Manager positions.

ACTIVE FIRST RESPONDER OPERATIONAL LEVEL



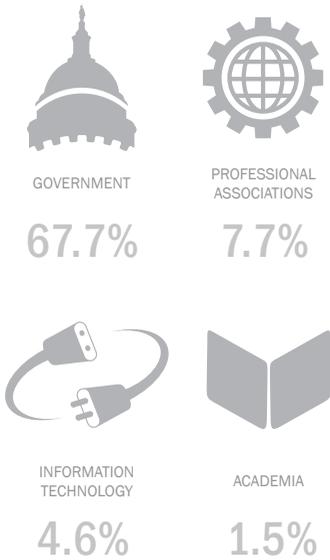
ACTIVE FIRST RESPONDER LENGTH OF SERVICE



The majority of the first responders have been in service for more than 21 years and work in jurisdictions with populations of 500,000 or greater.

The remaining thirty percent of IAB participants provide invaluable knowledge and expertise in a wide array of disciplines. These participants represent government, academic, professional association, and information technology professional roles, among many others.

NON-FIRST RESPONDER PRIMARY PROFESSIONAL ROLE DISCIPLINE BREAKDOWN



*Remaining 18.5% includes others such as Homeland Security, Law Enforcement, Research, Science & Technology, Standards, and Training

The IAB community maintains a wide range of expertise within the emergency response field, representation includes both members and subject matter experts.

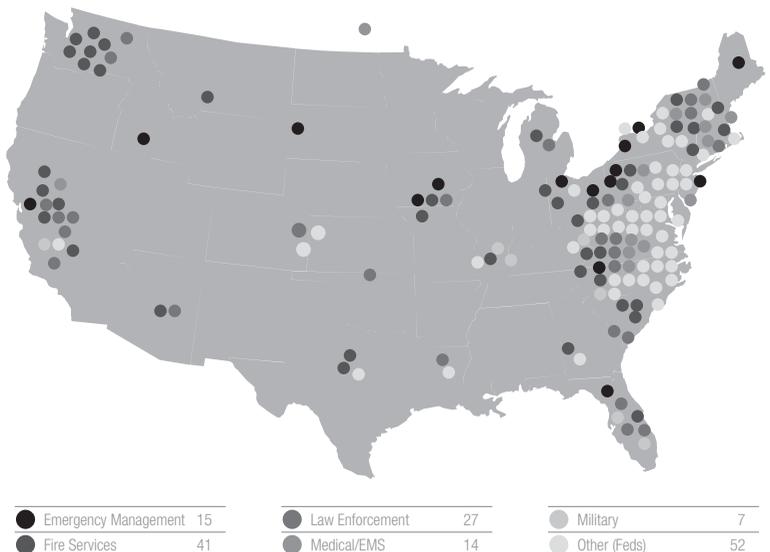
GENERAL AREAS OF EXPERTISE (ENTIRE IAB COMMUNITY)



*Others include: Communications, Search & Rescue, Tactical Operations, Structural Collapse Rescue, Confined Space Rescue, Pre-hospital Emergency Medical Care, Criminal Investigations, Clandestine Laboratory Response, Nuclear Materials, Public Health, and Force Protection

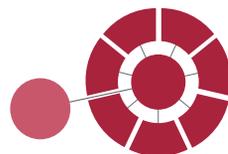
IAB participants are located from across the nation in order to better represent diverse populations, departments, and perspectives.

IAB PARTICIPATION (MEMBERS/SMEs)



FACC

FEDERAL
AGENCY
COORDINATING
COMMITTEE



FACC

FEDERAL AGENCY COORDINATING COMMITTEE



CHAIR

WILLIAM E. HASKELL III

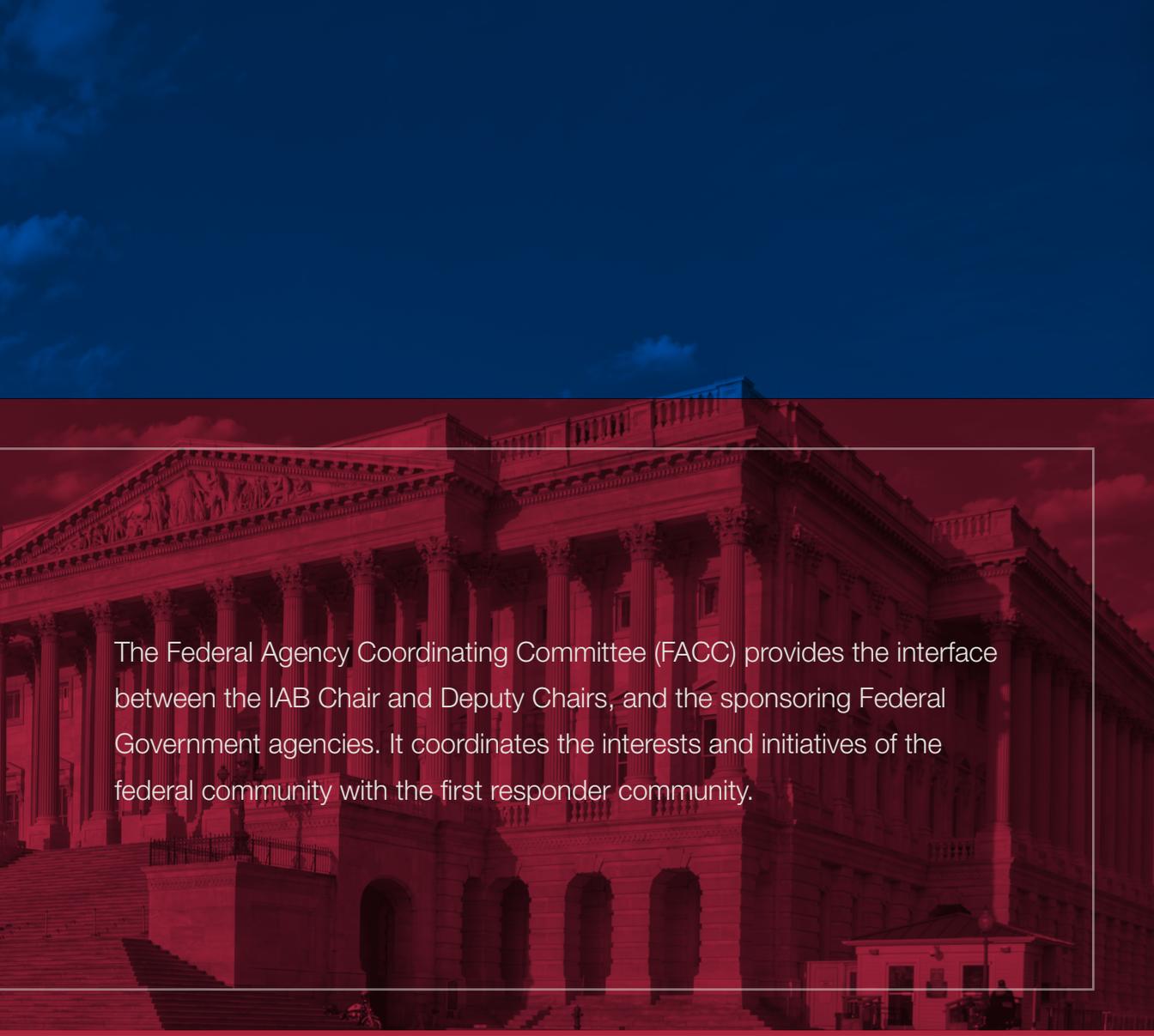
*National Institute for Occupational Safety and Health,
National Personal Protective Technology Laboratory*

ROLE AND FUNCTIONS

The Federal Agency Coordinating Committee (FACC) provides the funding to operate the IAB. Continued representation by multiple federal agencies allows the IAB to maintain its independence as an organization as well as to best use the resources and expertise of the federal community. Those agencies and departments that fund the IAB have voting rights as part of the FACC.

Upon unanimous agreement between the federal partners, NIOSH NPPTL served as the FACC Chair of the IAB during FY 2013. The FACC Chair is elected on an annual basis.

The FACC leverages ongoing federal RDT&E efforts to meet the responder requirements as identified by the IAB. The IAB Chair, Deputy Chairs, and the FACC



The Federal Agency Coordinating Committee (FACC) provides the interface between the IAB Chair and Deputy Chairs, and the sponsoring Federal Government agencies. It coordinates the interests and initiatives of the federal community with the first responder community.

work together to prioritize initiatives within the IAB and the federal community. The FACC also coordinates ongoing IAB initiatives within the federal community to ensure task completion and to prevent duplication of efforts. This interagency relationship benefits both the IAB and the federal community by improving protection and response.

The FACC reviews and approves the annual operating budget of the IAB and maintains a support staff to facilitate operations. The FACC meets with the IAB Chair and Deputy Chairs on a regular basis to review SubGroup recommendations and action items.

REVIEW OF FY 2012 WORKPLAN

A critical component of the IAB strategic planning process is to set the agenda for the upcoming fiscal year. The final product of this process, referred to

as the work plan, represents a formal approach to develop, plan, document, and prioritize a set of projects that meet the needs and mission of the IAB. The FACC is integral to this process. Each FACC sponsor submits a list of priorities that are vetted amongst all FACC sponsors and aligned with the SubGroup priorities, as appropriate.

For FY 2013, 25 FACC priorities were submitted by 9 member organizations of the FACC, and each was aligned with at least one SubGroup priority. Like the previous year, many of the priorities received substantial support and have moved forward as planned. Twelve of the priorities are considered successfully completed with the remainder categorized as medium to long term and will be carried over to next year. These successfully completed priorities include, but are not limited



MEMBERSHIP

DONALD C. BULEY

Department of Defense, Joint Program Executive Office for Chemical and Biological Defense, Joint Project Manager Guardian

SEBASTIAN HEATH

Department of Homeland Security, Federal Emergency Management Agency, Grants Program Directorate

KATHLEEN HIGGINS

Department of Homeland Security, Science and Technology Directorate, Support to the Homeland Security Enterprise and First Responders Group

KAREN HOUSE

Department of Defense, Joint Program Executive Office for Chemical and Biological Defense, Joint Project Manager Guardian

DONALD LAPHAM

Department of Defense, Homeland Defense and Americas' Security Affairs

PHILIP MATTSON

Department of Homeland Security, Science and Technology Directorate, Acquisition Support and Operations Analysis Group, Office of Standards

J. CLAY MCGUYER

National Guard Bureau, Domestic Operations and Force Development Directorate, Combating Weapons of Mass Destruction Division

CHERI ROE

Department of Homeland Security, Federal Emergency Management Agency, National Preparedness Directorate, National Integration Center

DANIEL SCHULTZ

Department of Homeland Security, National Programs and Protection Directorate, Office of Infrastructure Protection

MARGARET SOBEY-SANTOS

Department of Defense, Joint Program Executive Office for Chemical and Biological Defense

DEBRA STOE

Department of Justice, Office of Justice Programs, National Institute of Justice

RICHARD VANDAME

Department of Homeland Security, Federal Emergency Management Agency, National Preparedness Directorate

MICHAEL WALTER

Department of Homeland Security, Office of Health Affairs, BioWatch

to, updating the list of adopted and referenced standards and the list of prioritized standards gaps; providing subject matter expertise in the development and review of PPE related information and guidance documents, participation in National Personal Protective Technology Laboratory (NPPTL) stakeholder meetings and submission of public comments to PPE consensus standards development organizations; reviewing CBRNE Enhanced Response Force Packages (CERFPs)/Homeland Response Force (HRF) equipment list to provide professional input on standardizing equipment list with first responders in order to meet NIOSH and other required civilian standards; maintaining and advancing the alignment of the AEL and SEL and reviewing all first responder standards related to those products; and conducting an ESS portal review to include developing a comprehensive list of available ESS information portals and the types of information being shared.

The federal priorities that were not completed have been carried over to the FY 2014 work plan. Reasons for the carry-over may include some or all of the following: long-term timelines, limitations due to time and/or resources, and changes in political priorities over the year.

The FACC is pleased with the support received from the SubGroups and the work accomplished to date. They are encouraged by the work plan schedule and progress and look forward to continuing this cycle during FY 2014.

FEDERAL GOVERNMENT AGENCIES

Department of Defense, Chemical and Biological Defense Program (CBDP)

The JPEO-CBD is responsible for the acquisition and advanced development of Chemical and Biological (CB) defense systems and materiel. CB defense capabilities must support the diverse requirements of military operations supporting national security as well as homeland security missions. Through the Joint Project Managers, the JPEO-CBD has significantly strengthened protection of the DOD installations against CBRN threats. These programs are diverse, and many include providing equipment and training to the DOD personnel who respond to CBRN events alongside civilian emergency responders.

As one of the founding organizations of the IAB, the DOD and the JPEO-CBD continues to support all facets and areas of the IAB. Personnel serve on the FACC, participate in the

development of the overall IAB strategy, and attend IAB SubGroup and Committee sessions.

Department of Defense, Homeland Defense and Americas' Security Affairs (HD&ASA)

The Homeland Defense and Americas' Security Affairs (HD&ASA) office is responsible for policy guidance on homeland defense activities for the DOD. The Assistant Secretary of Defense, HD&ASA, under the authority, direction, and control of the Under Secretary of Defense for Policy (USD(P)), serves as the principal civilian advisor to the Secretary of Defense and the USD(P) on homeland defense activities, Defense Support of Civil Authorities (DSCA), and Western Hemisphere security matters. HD&ASA provides overall supervision of homeland defense activities of the DOD, to include the Defense Critical Infrastructure Program; domestic antiterrorism; the Defense Continuity Program; other homeland defense-related activities; and alignment of homeland defense policies and programs with DOD policies for counterterrorism and counternarcotics.

Department of Defense, Joint Program Executive Office for Chemical and Biological Defense, Joint Project Manager Guardian (JPMG)

The Joint Project Manager Guardian's (JPMG) mission is to develop, test, produce, field and sustain timely and affordable Joint Integrated Force Protection, CBRNE analytics, and response capabilities to protect our forces, the American people, U.S. assets and interests at home and abroad from threats to national security in the face of a changing, complex and uncertain global environment. The JPMG provides Army installations with decision support tools to enable timely and accurate decision making, as well as warning and notification systems. JPMG supports DOD Weapons of Mass Destruction Response Units by providing advanced analytics, information management, communications, and commercial off-the-shelf life cycle management across their portfolio, as well as protection, detection, identification, and survey and monitoring capabilities. JPMG also supports programs which field integrated and interoperable physical security/force protection/CBRN protection and response capability to forward operating bases and deployable units. As the mission space for JPMG's stakeholder community frequently

intersects with the civilian responder community, support to and from the IAB is an important aspect of good business practices.

Department of Defense, National Guard Bureau (NGB)

The NGB is responsible for managing DOD initial CBRN response capabilities and integrating those capabilities with first responders at the state and local level. NGB CBRN response capabilities include the Weapons of Mass Destruction—Civil Support Teams, CERFPs, and HRFs, which augment local and state capabilities as regional assets to provide critical lifesaving functions in the event of a natural or man-made CBRN event. NGB ensures the utility of these capabilities by meeting civilian standards and integrating them with civilian SOPs. The NGB also provides the National Guard "essential ten" capabilities to support all-hazards response in every state and territory including: command and control, logistics, aviation, security, engineering, transportation, medical, CBRN, maintenance, and communications. The NGB partners with the IAB to develop best practices for integrating National Guard capabilities to support first responders and to shape how DOD capabilities can complement existing first responder capabilities in preparing for and responding to emergencies.

Department of Homeland Security, Federal Emergency Management Agency (FEMA), Protection and National Preparedness (PNP)

Protection and National Preparedness (PNP) is responsible for the coordination of preparedness- and protection-related activities throughout FEMA, including grants, planning, training, exercises, individual and community preparedness, assessments, lessons learned, continuity of government and National Capital Region coordination.

PNP is comprised of the following offices and components:

- Office of the Deputy Administrator
- Office of Counterterrorism and Security Preparedness
- Office of Preparedness Integration and Coordination
- Strategic Resource Management Office

- 
- Grant Programs Directorate
 - Office of National Capital Region Coordination
 - National Continuity Programs Directorate
 - National Preparedness Directorate

GPD and the NPD are the PNP components that participate in the IAB's FACC. FEMA's funding for the IAB in FY11 and FY12 came from the National Integration Center (NIC), which is within the NPD.

NPD provides the doctrine, programs, and resources that prepare the nation to prevent, protect, mitigate, respond to and recover from disasters while minimizing the loss of lives, infrastructure, and property. NPD is responsible for enhancing the nation's readiness through a comprehensive preparedness cycle of planning, organizing, equipping, training, exercising, evaluating, and improvement planning.

The purpose of FEMA's GPD is to strategically and effectively administer and manage FEMA grants to ensure critical and measurable results for customers and stakeholders. Its mission is to manage federal assistance to measurably improve capability and reduce the risks the nation faces in times of man-made and natural disasters. The GPD maintains the DHS AEL and coordinates with the IAB to harmonize the latest AEL with the IAB's SEL.

Department of Homeland Security, National Programs and Protection Directorate (NPPD), Office of Infrastructure Protection (IP)

The IP leads the coordinated national program to reduce risk to the nation's critical infrastructure posed by acts of terrorism, and to strengthen national preparedness, timely response, and rapid recovery in the event of an attack, natural disaster, or other emergency.

The Assistant Secretary for IP serves as the Sector-Specific Agency (SSA), leading the protection and resilience efforts for the ESS, one of the nation's 16 Critical Infrastructure Sectors. The ES-SSA is responsible for implementing the National Infrastructure Protection Plan, its sector partnership model and the risk management framework within the ESS.

Encompassing a wide range of emergency response functions, the primary mission of the ESS is to save lives, protect property and the environment, assist communities impacted by disasters, and aid recovery from emergencies. These functions, the majority of which are performed at the state, local, tribal, and territorial level, are enhanced through the IAB, which provides a vital link and engagement process to a diverse body of emergency preparedness and response experts who act as a credible voice for the responder community.

Department of Homeland Security, Office of Health Affairs (OHA), BioWatch

DHS OHA serves as the DHS's principal authority for all medical and health matters. OHA provides health, medical, and scientific expertise to support the DHS mission of preparing for, responding to, and recovering from all threats.

OHA serves as the principal advisor to the Secretary and the FEMA Administrator on medical and public health issues. OHA leads the Department's workforce health protection and medical oversight activities, leads and coordinates the Department's biological and chemical defense activities, and provides medical and scientific expertise to support DHS' preparedness and response efforts.

The BioWatch Program enables DHS to detect biological attacks by managing an early warning system to rapidly detect dangerous pathogens in the air. This program deploys detection devices in over thirty major metropolitan areas throughout the nation. The BioWatch Program provides public health experts with a warning of a biological agent release before exposed individuals become clinically symptomatic ("ill"). This "detect-to-treat" approach provides public health officials an opportunity to respond aggressively to eliminate or substantially mitigate the potentially catastrophic impact on the population of a biological agent release.

Department of Homeland Security, Science and Technology (S&T) Directorate, Acquisition Support and Operations Analysis Group, Office of Standards

The DHS S&T Directorate serves as the primary research & development (R&D) arm for the Department. The Directorate's mission is to improve homeland security by providing its customers—the operating components of DHS and state, local, tribal, and territorial emergency responders and officials—state-of-the-art technology that helps them accomplish their missions. DHS S&T manages an integrated program of science and technology, from basic research to product transition, guided by a risk-diverse, multitiered invested strategy

based primarily on the stated needs of customers balanced with emerging technology opportunities. The Office of Standards within the Acquisition Support and Operations Analysis Group of S&T is the organization through which DHS adopts standards. The Office of Standards facilitates deployment of standards-based capabilities by funding standards development activities in the areas of chemical and biological countermeasures, explosive detection, PPE, biometrics, incident management and response robots. It is important to note that the first standards adopted by DHS were those adopted by the IAB. The S&T Office of Standards provides the majority of the funds that support the standards development requirements identified by the IAB.

Department of Homeland Security, Science and Technology Directorate (S&T), Support to the Homeland Security Enterprise and First Responders Group (FRG)

The Support to the Homeland Security Enterprise and First Responders Group, commonly referred to as the FRG, was established in October 2010 to strengthen the first response community's ability to protect the homeland and respond to disasters. Through the engagement of first responders at every stage, FRG pursues a clear understanding of their needs and requirements, and develops innovative solutions to the most pressing challenges faced during both day-to-day incidents and large-scale emergencies. In close partnership with the emergency preparedness and response community, FRG identifies, validates, and facilitates fulfilling of needs through the use of existing and emerging technologies, knowledge products, and standards. FRG focus areas include responder safety and effectiveness, communications, data sharing, and radiological/nuclear response and recovery. Four divisions work together to carry out FRG's overall mission: Information Applications, the National Urban Security Technology Laboratory, the Office for Interoperability and Compatibility, and Responder Technologies. FRG's Communications, Outreach, and Responder Engagement team partners with the divisions to conduct communications and outreach activities with the first responder community.



Department of Justice, Office of Justice Programs, National Institute of Justice (NIJ)

A component of the Office of Justice Programs, NIJ is the research, development, testing, and evaluation arm of the Department of Justice. NIJ's principal authorities are derived from the Omnibus Crime Control and Safe Streets Act of 1968 and, as it relates the activities of its Office of Science & Technology from Title II of the Homeland Security Act of 2002.

Among NIJ's duties is developing performance testing standards for the technology used by law enforcement, courts, corrections agencies, and public crime laboratories. NIJ's predecessor agency the National Institute of Law Enforcement and Criminal Justice published the first standard for police body armor in 1972.

NIJ does not set standards as a regulatory activity of the agency, or otherwise in furtherance of its own federal activities. Rather, it engages in a facilitative role on behalf of federal, state, local, and tribal agencies with law enforcement and other criminal justice operational and administrative missions. That is in keeping with its mission and historic role in furthering the development and deployment of safe, effective technologies that meet agencies' stated operational needs.

Practitioner-based groups, which are deliberative with representative stakeholder bodies, develop NIJ's performance testing standards. At the core of the NIJ standards development process are special technical committees (STCs). An STC consists of 20 to 25 experienced practitioners, scientists, SMEs, test laboratory personnel, and conformity assessment experts with relevant expertise for the particular equipment performance standard being developed, adapted or revised.

Recently published NIJ Standards:

- NIJ Standard-0116.00, CBRN Protective Ensemble Standard for Law Enforcement
- NIJ CR-0116.00, Certification Program Requirements
- NIJ Standard-0117.00, Public Safety Bomb Suit Standard
- NIJ CR-0117-00, Certification Program Requirements

Standards soon to be published:

- Duty Holster
- Restraints
- Walk-Through and Hand-Held Metal Detectors
- In-Car Video Systems

Standards currently being developed or revised include:

- Stab Armor Standard
- Offender Tracking Systems
- Ballistic Body Armor Standard
- License Plate Readers
- Interview Room Video Standard

NIJ standards are subject to continued research and revision, as appropriate. More information can be found at www.nij.gov/standards.



National Institute for Occupational Safety and Health (NIOSH), National Personal Protective Technology Laboratory (NPPTL)

To carry out the NIOSH mission to maintain national and world leadership in preventing work-related illness and injuries, efforts range from research and information to guidance and service. The NIOSH program portfolio focuses on relevance, quality, and impact achieved through involvement of partners and stakeholders throughout the research continuum.

The NIOSH program portfolio is organized into eight industrial sectors. Within these sectors, the Personal Protective Technology (PPT) cross-sector exists to prevent work-related illness and injury by advancing the state of knowledge and application of PPTs. PPT includes technical methods, processes, techniques, tools, and materials that support the development and use of PPE worn to reduce occupational exposure to hazards.

Within NIOSH, NPPTL leadership serves as the Program Manager for the NIOSH PPT Cross-Sector Program. The Lab was established in 2001 when Congress underscored the need for improved PPE and encouraged research for PPTs.

NPPTL applies state-of-the-art science to meet increasingly complex occupational safety and health challenges. Strategic research programs help to ensure that the development of new PPTs keep pace with the changing needs and requirements of employers and workers.

FACC CHAIR

WILLIAM E. HASKELL III

**Program Manager, National Institute for
Occupational Safety and Health, National
Personal Protective Technology Laboratory**

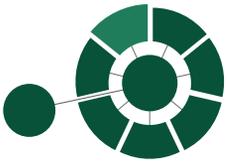
Bill Haskell is a member of the Policy & Standards Branch at the NIOSH NPPTL. Mr. Haskell is the Coordinator for the NIOSH Public Safety Sector Program and Co-Chair of the NORA Public Safety Sector Council. Mr. Haskell serves as the Chairman of the NFPA Correlating Committee (CC) for Fire and Emergency Services Protective Clothing and Equipment, and NFPA technical committees for hazard materials, electronic safety, structural/proximity, special operations, and EMS protective clothing and equipment. Mr. Haskell is a member of the ASTM International F23 Protective Clothing and Equipment Committee, E54 Homeland Security Committee, and the IACP Homeland Security Committee. Mr. Haskell holds a B.S. in Civil Engineering and an M.S. in Plastics Engineering from the University of Massachusetts at Lowell.



ESG

EQUIPMENT
SUBGROUP

ESG



ESG

EQUIPMENT SUBGROUP



STATE & LOCAL CO-CHAIR

DOUGLAS E. WOLFE

Sarasota County (FL) Fire Department



FEDERAL CO-CHAIR

WILLIAM E. HASKELL III

*National Institute for Occupational Safety and Health,
National Personal Protective Technology Laboratory*

ROLE AND FUNCTIONS

The ESG is the largest of the IAB SubGroups, and addresses standardization and interoperability issues relating directly to protective, operational, and support equipment for emergency responders. ESG responsibilities include the maintenance and periodic publication of the IAB SEL [including the designation of example products and identification/incorporation of new technologies]; the development of equipment-driven priorities for R&D and standards development; and coordination with other SubGroups such as T&E to ensure proper training, selection, and use of equipment in various mission environments.

The equipment sections managed by the ESG are listed in the SEL. The majority of these equipment items and associated information are aligned with the Authorized Equipment List (AEL), which is maintained



The mission of the Equipment SubGroup (ESG) is to develop, maintain, and update the SEL for equipment items; to address the standardization and interoperability of responder equipment items for preparedness, prevention, mitigation, response, and recovery operations based on anticipated hazards, risk assessments, and responder mission areas; and to review and make recommendations for new equipment research and standardization, closely coordinating its efforts with those of the other IAB SubGroups.

Photo Courtesy of Seattle (WA) Fire Department

Authorized Equipment List (AEL), which is maintained by the DHS FEMA Grant Programs Directorate.

ESG SEL EQUIPMENT OVERSIGHT AREAS

- | | | | |
|----|---|----|---|
| 1 | PERSONAL PROTECTIVE EQUIPMENT | 11 | CBRN REFERENCE MATERIALS |
| 2 | EXPLOSIVE DEVICE MITIGATION AND REMEDIATION EQUIPMENT | 12 | CBRN INCIDENT RESPONSE VEHICLES |
| 3 | CBRN OPERATIONAL AND SEARCH & RESCUE EQUIPMENT | 13 | TERRORISM INCIDENT PREVENTION EQUIPMENT |
| 4 | INFORMATION TECHNOLOGY | 14 | PHYSICAL SECURITY ENHANCEMENT |
| 5 | CYBERSECURITY ENHANCEMENT EQUIPMENT | 15 | INSPECTION AND SCREENING SYSTEMS |
| 6 | INTEROPERABLE COMMUNICATIONS EQUIPMENT | 16 | ANIMALS AND PLANTS |
| 7 | DETECTION | 17 | CBRN PREVENTION AND RESPONSE WATERCRAFT |
| 8 | DECONTAMINATION | 18 | CBRNE AVIATION EQUIPMENT |
| 9 | MEDICAL | 19 | CBRNE LOGISTICAL SUPPORT EQUIPMENT |
| 10 | POWER | 20 | INTERVENTION EQUIPMENT |
| | | 21 | OTHER AUTHORIZED EQUIPMENT |

MISSION SPECIFIC SUBLISTS (MSSL)

Due to the number and diversity of items listed in the SEL, the ESG develops mission-specific sublists (MSSLs) to support critical responder mission areas.

MEMBERSHIP

ERIC ASHBURN

Walker County (GA) Emergency Services

TAUSEEF BADAR

Commander Naval Surface Forces

JOHANNA BRISCOE

United States Department of Agriculture, Animal Plant Health Inspection Service, Animal Care Emergency Programs

RICHARD BYTNER

New York State Police

JERRY DIEHL

Arizona Department of Public Safety, State Police, Bomb Squad

TIMOTHY DORSEY

West County (MO) Emergency Medical Services and Fire Protection District

THOMAS GROEL

Federal Bureau of Investigation, Hazardous Materials Response Unit

ERIC IMHOF

Contra Costa County (CA) Office of the Sheriff, Office of Emergency Services

LISA LANHAM

Sarasota County (FL) Sheriff's Office

JAIME LESINSKI

Los Angeles (CA) Fire Department

ANDRZEJ MIZIOLEK

U.S. Army Research Laboratory

IRENE RICHARDSON

U.S. Army Chemical Materials Activity

AXEL RODRIGUEZ

U.S. Army Natick Soldier, Research, Development & Engineering Center

PETER STEVENSON

U.S. Environmental Protection Agency

RON WATSON

Los Angeles County (CA) Fire Department

FOREST WILLIS

U.S. Coast Guard, Seventh District

SUBJECT MATTER EXPERTS

EDWARD BAILOR

United States Capitol Police (Retired)

RICH DUFFY

International Association of Fire Fighters (Retired)

FRANK GONZALES

National Guard Bureau

DONALD HEWITT

Proconsul, Inc.

JEFF MARCUS

Los Angeles (CA) Fire Department (Retired)

PATRICK MORRISON

International Association of Fire Fighters

JOSEPH NAMM

City of Plantation (FL) Fire Department

JEFF STULL

International Personnel Protection, Inc.

STEVEN TOWNSEND

Carrollton (TX) Fire Rescue

DAVID TREBISACCI

National Fire Protection Association

MSSLs are compiled by ESG members and SMEs who draw appropriate items from all 21 sections of the SEL as needed. Each MSSL thus provides a “tailored SEL” for responders in a specific mission area. MSSLs may be selected and viewed via a pull-down menu on the IAB website’s interactive SEL (<https://iab.gov/SELint.aspx>).

In addition to those MSSLs developed for mission critical areas, special MSSLs were developed and released for the Canadian Police Research Centre (CPRC) in order to harmonize equipment with our Canadian counterparts.

MEMBERSHIP

The ESG includes a wide range of members and SMEs from emergency response organizations, federal agencies, military, and standards development organizations. This synergistic membership facilitates system-wide improvements in the SEL, as well as advocacy and participation in equipment performance and certification standards development. The current composition is as follows:

- State and Local Organizations (50%)—Representing the fire service, law enforcement, EMS, medical first receivers, hazardous device operations, hazardous materials, search and rescue, and water operations.
- Federal Agencies (50%)—Representing NIOSH, U.S. Coast Guard, U.S. EPA, Federal Bureau of Investigation (FBI), U.S. Department of Agriculture Animal Plant Health Inspection Service, U.S. Army Research Laboratory, U.S. Army Chemical Materials Activity, U.S. Army Natick Soldier RDEC, Naval Surface Forces, and NGB.

The ESG has wide representation from standards development, labor, and professional organizations such as the NFPA, ASTM International, International Association of Fire Fighters (IAFF), National Tactical Officers Association (NTOA), and the National Bomb Squad Commander's Advisory Board (NBSCAB). Each of these organizations has membership or SME status on the ESG.

This membership enhances partnerships among local, state, federal, military, and professional organizations, and the standards development community. Through these partnerships, protective clothing, equipment, expertise, technologies, and standards are being developed. Ongoing federal and military research and development programs continue to be leveraged and, in some cases, fast-tracked for the benefit of the emergency response and public safety community. Bringing all the stakeholders to the table in a cooperative manner has been, and will continue to be, essential to the success of the ESG.

FY 2013 HIGHLIGHTS AND 2014 INITIATIVES

Equipment SubGroup Highlights (October 2012–September 2013)

- The ESG continued to serve as the lead SubGroup for the maintenance and update of the SEL, as well as support the DHS/FEMA Preparedness Grants Office and the AEL. The 2013 Edition of the SEL contains numerous updates, additions, and deletions as described in the SEL section of this Annual Report. The most significant 2013 addition is a new category in Section 16 (Animals and Plants) developed in collaboration with FEMA and United States Department of Agriculture (USDA). The new category is called “Foreign Animal Disease” (Code 16AD) and contains 34 new items in the following eight sub categories:

1. DISEASE INVESTIGATION
2. LABORATORY EQUIPMENT
3. ANIMAL TRACKING
4. DEPOPULATION
5. DISINFECTION
6. DISPOSAL
7. ANIMAL TREATMENTS
8. TRAINING MATERIALS

- The ESG also continued to support the CPRC in developing the Canadian Recommended Equipment List (REL). Under an agreement with CPRC, the IAB is providing system and subject matter assistance in creating a parallel SEL tailored to the needs of the Canadian emergency response community. On March 20, 2013, the CPRC officially launched the online version of the REL at <http://psprc-crpsp.ca/EN>. The ceremony included the presentation of a plaque to the IAB in appreciation of our continued technical and content support. Canadian representatives will continue to participate on the ESG to facilitate communication. This effort exploits the many commonalities of the Canadian and U.S. communities, while providing a venue for future coordination.
- The ESG continued to advocate for the development of field-deployable 3D tracking and accountability systems and physiological status monitoring for responders. As part of that effort, the ESG was provided with presentations on several emerging and promising research and prototype efforts.
- The ESG authored a position paper entitled Evaluation of Hazards in the Post-Fire Environment. Today's emergency responders, including fire service, law enforcement, EMS, and other disciplines spend a considerable amount of time in the post-fire environment. Work in this environment includes, but is not limited to victim recovery, salvage and overhaul, origin and cause investigation, and criminal investigations. Current research suggests that the airborne hazards associated with the post-fire environment are likely much greater than previously understood. The ESG had been asked to respond to questions regarding the use of multi-gas detection instrumentation to drive decisions on selection of PPE for protection of firefighters and other personnel from airborne hazards in the post-fire environment. This paper recommends against basing PPE decisions solely on multi-gas detector readings, and strongly recommends additional research on the post-fire environment.
- The IAB/NIOSH Stakeholder Workshop on Evaluation of Hazards and Operations in the Post-Fire Environment was held on February



7, 2013 in New Orleans, LA (<https://iab.gov/esg.aspx>). The co-sponsor was the NIOSH NPPTL, with planning assistance from the Fire Protection Research Foundation (FPRF). This workshop was conducted as a follow-up action to the position paper. The event was attended by more than seventy participants. It was co-hosted by the IAB ESG and the HMRS SubGroup. The workshop featured a panel session with representatives from fire departments and fire service associations. The panelists discussed issues related to SOPs, hazard monitoring equipment, doffing self-contained breathing apparatus (SCBA) decision points, and training requirements. The following is a list of presentations made during this workshop:

FIRE FIGHTER CANCER SUPPORT NETWORK (FCSN)

MR. KEITH TYSON, VP EASTERN REGION, DIRECTOR OF EDUCATION

NIOSH & UNITED STATES FIRE ADMINISTRATION (USFA) FIRE FIGHTER CANCER STUDY

DR. THOMAS HALES, MD, NIOSH

NO SMOKE, NO FIRE, NO HAZARD – FIREFIGHTERS PERSPECTIVE ON THE HAZARDS OF FIRE OVERHAUL AND HOW TO PROTECT AGAINST THEM

MS. DAWN BOLSTAD-JOHNSON, MPH, CIH, CSP

FIREFIGHTER HEALTH EFFECTS: OVERHAUL AND BEYOND

DR. JEFFERY BURGESS, MD, MS, MPH, UNIVERSITY OF ARIZONA

FIREFIGHTER UNIQUE EXPOSURE PROFILES

LCDR KENNETH FENT, PHD, NIOSH HEALTH HAZARDS EVALUATION PROGRAM

IMPROVING FIRE FIGHTER HEALTH AND SAFETY: REAL-TIME PERSONAL IDLH SENSOR

DR. DAVID CYGANOSKI, PHD, WORCESTER POLYTECHNIC INSTITUTE

AIR PURIFYING RESPIRATORY PROTECTION DURING OVERHAUL: EVALUATION OF CBRN CANISTERS AND CARTRIDGES

DR. ERIC LUTZ, PHD, UNIVERSITY OF ARIZONA

FIREFIGHTER EXPOSURE STUDY: AIR PURIFYING RESPIRATORS DURING OVERHAUL

DR. MICHAEL LOGAN, QUEENSLAND (AU) FIRE AND RESCUE

RESEARCH TO CONSENSUS STANDARDS DEVELOPMENT

MR. JONATHAN SALAJDA, NIOSH NPPTL

- Members and SMEs from the ESG continue to participate on the NFPA project on Emergency Services Protective Clothing and Equipment (FAE-AAC) and on numerous NFPA Technical Committees revising existing equipment standards and developing new standards. The NFPA Staff Liaison for this project and its standards development committees is an SME on the ESG. This ensures that the ESG has direct input into the NFPA standards development and revision process. Additionally, it enables the ESG to update related SEL equipment items as new editions and NFPA product standards are released.
- An ESG member participated on the White House–National Security Staff (NSS) IED PPE and Medical Work Group.
- SubGroup members participated in and presented at the Combating Terrorism Technical Support Office (CTTSO) – Technical Support Working Group (TSWG) PPE Conference held in Hollywood, FL. During this conference, the ESG facilitated a “responder of the future” needs assessment workshop to assist in determining ESG objectives.
- ESG Members and SMEs participated on the National Institute of Justice (NIJ) Special Technical Committee conducting review and revision to the first edition of NIJ Standard 0116.00—CBRN Protective Ensemble Standard for Law Enforcement. Members participated in the development of proposed revisions to the standard.
- ESG members participated on the NIJ Special Technical Committee responsible for the development of the Public Safety Bomb Suit Standard (NIJ Standard-0117.00) and Public Safety Bomb Suit Certification Program Requirements (NIJ CR-0117.00) released in March 2012.
- The ESG is continues to monitor efforts by the NFPA Technical Committee on Hazardous Materials Protective Clothing and Equipment to improve existing performance requirements and test methods for measuring chemical permeation resistance of ensembles. This Technical Committee is conducting a top-down review and revision to the NFPA 1991 Standard on Vapor-Protective Ensembles for Hazardous Materials Emergencies. IAB and ESG representatives are members of this Technical Committee.

EQUIPMENT SUBGROUP INITIATIVES

- In the upcoming year, the ESG will work to identify new prevention and detection technologies for emerging chemical agents.
- The ESG and other members of the IAB have provided representatives to the new NFPA Technical Committee on Non-Structural Firefighting SCBA.
- ESG members led IAB participation in the National Homeland Security Conference, including staffing an IAB exhibit.
- Finally, ESG members participated in and presented at the National Occupational Research Agenda (NORA) Public Safety Sector Council Meeting.

STATE & LOCAL CO-CHAIR

DOUGLAS E. WOLFE

**Special Operations Officer, Sarasota County (FL)
Fire Department**

Douglas Wolfe has served in the hazardous materials emergency response field for 30 years with the Sarasota County Fire Department and coordinated its Special Operations and Domestic Security programs. During his tenure in the field, Mr. Wolfe instructed nationally for numerous organizations, including the National Fire Academy, where he has served as SME and co-authored numerous programs, including “Advanced Life Support Response to Hazardous Materials Incidents,” “EMS: Special Operations,” “Emergency Response to Terrorism: Tactical Considerations,” and “Chemistry for Emergency Response.” In addition to his role with the IAB, Mr. Wolfe served on the Florida SERC and Hazardous Materials Training Task Force, as well as the Florida State Working Group for Domestic Security Equipment Subcommittee.

FEDERAL CO-CHAIR

WILLIAM E. HASKELL III

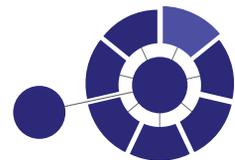
**Program Manager, National Institute for
Occupational Safety and Health, National
Personal Protective Technology Laboratory**

Bill Haskell is a member of the Policy & Standards Branch at the NIOSH NPPTL. Mr. Haskell is the Coordinator for the NIOSH Public Safety Sector Program and Co-Chair of the NORA Public Safety Sector Council. Mr. Haskell serves as the Chairman of the NFPA Correlating Committee (CC) for Fire and Emergency Services Protective Clothing and Equipment, and NFPA technical committees for hazard materials, electronic safety, structural/proximity, special operations, and EMS protective clothing and equipment. Mr. Haskell is a member of the ASTM International F23 Protective Clothing and Equipment Committee, E54 Homeland Security Committee, and the IACP Homeland Security Committee. Mr. Haskell holds a B.S. in Civil Engineering and an M.S. in Plastics Engineering from the University of Massachusetts at Lowell.

HMRS

HEALTH,
MEDICAL &
RESPONDER
SAFETY
SUBGROUP

HMRS



HMRS

HEALTH, MEDICAL & RESPONDER SAFETY SUBGROUP



STATE & LOCAL CO-CHAIR

DR. SANDY BOGUCKI
Branford (CT) Fire Department

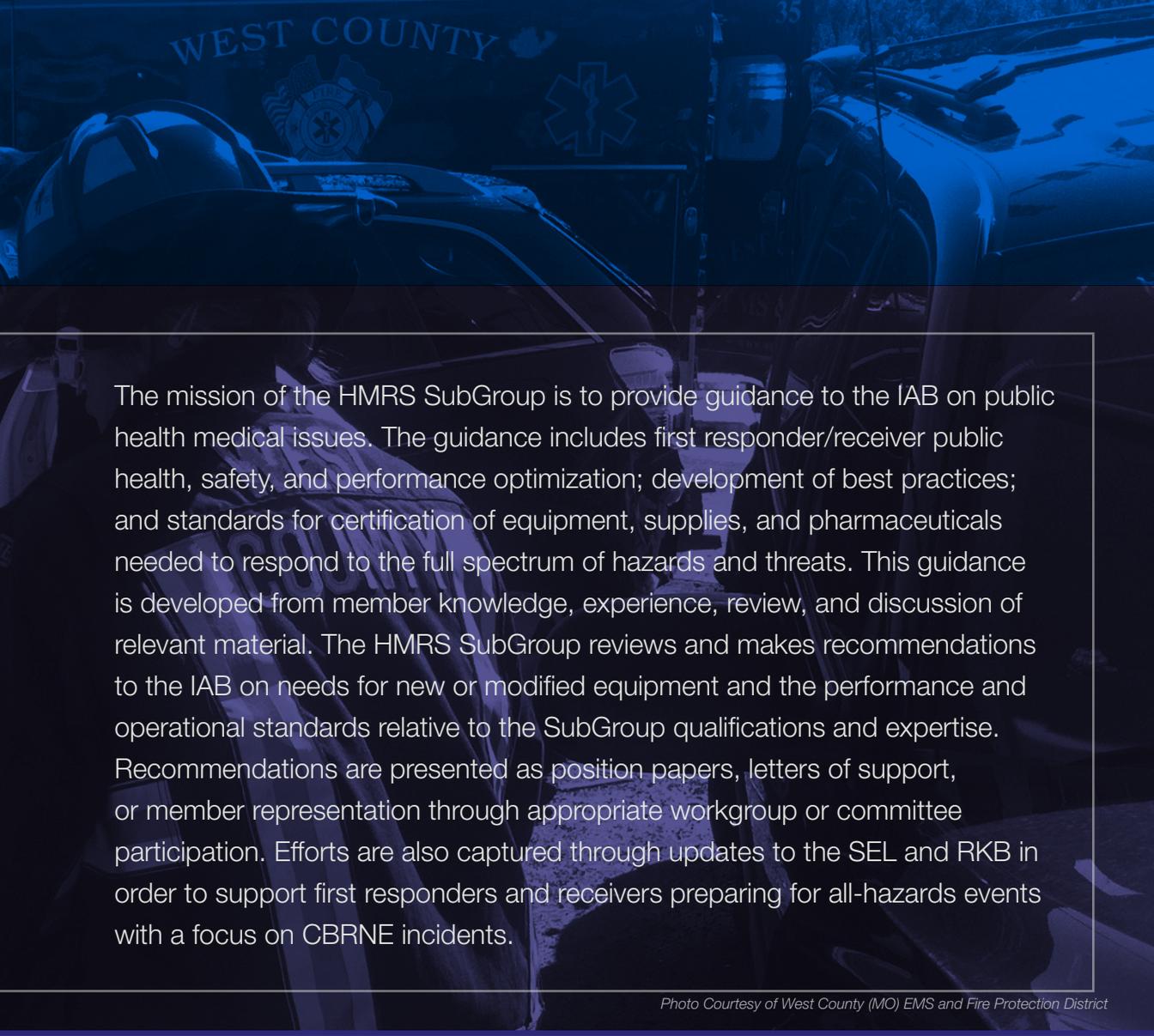
FEDERAL CO-CHAIR

DR. DUANE CANEVA
Department of Homeland Security, Customs and Border Protection



ROLES AND FUNCTIONS

- Identify gaps and needs for providing safe and effective medical care under emergency conditions.
- Evaluate the efficacy and appropriateness of existing and proposed health- and safety-related products, processes, practices, and information.
- Serve on working groups that address emergency public health, medical, performance, and responder safety.
- Develop recommendations about how to identify, mitigate, or eliminate emergency responder safety hazards, prevent injuries, and reduce disability and mortality.
- Identify and address factors in emergency response that cause physical, physiological, or psychological harm.



The mission of the HMRS SubGroup is to provide guidance to the IAB on public health medical issues. The guidance includes first responder/receiver public health, safety, and performance optimization; development of best practices; and standards for certification of equipment, supplies, and pharmaceuticals needed to respond to the full spectrum of hazards and threats. This guidance is developed from member knowledge, experience, review, and discussion of relevant material. The HMRS SubGroup reviews and makes recommendations to the IAB on needs for new or modified equipment and the performance and operational standards relative to the SubGroup qualifications and expertise. Recommendations are presented as position papers, letters of support, or member representation through appropriate workgroup or committee participation. Efforts are also captured through updates to the SEL and RKB in order to support first responders and receivers preparing for all-hazards events with a focus on CBRNE incidents.

Photo Courtesy of West County (MO) EMS and Fire Protection District

- Analyze threat scenarios and make recommendations about how to protect public health, medical, and responder personnel, and victims safely and effectively.

INITIATIVES

- HMRS promoted an increased focus on health monitoring of first responders during incident response, which included exploring novel technologies to identify physiological parameters that correlate with performance, safety, and health.
- HMRS is also considering the role of Emergency Medical Services providers in monitoring the health and safety of first responders during incident response and is advocating for the development of national standards and best practices.
- HMRS continued to explore the long-term effects of low-level exposure to hazardous materials on incident sites, potential cumulative effects over the span of a career, and what mitigation actions might be employed.
- HMRS continues to apply the Tactical Emergency Casualty Care approach to establish evidence-based approaches for the adoption of tactics, techniques, and procedures in the pre-hospital environment.

MEMBERSHIP

- The HMRS SubGroup consists of representatives from local, state, and federal responder agencies and institutions engaged in public health, medical response, occupational health, industrial hygiene, and responder safety. HMRS members engage all of the response disciplines as defined by the DHS

MEMBERSHIP

KNOX ADDRESS

Louisiana Poison Control

CHRISTINA BAXTER

Technical Support Working Group,
Combating Terrorism Technical
Support Office

KELLY BURKHOLDER-ALLEN

Stautzenberger College

RICHARD BURTON

Placer County (CA) Health and
Human Services

CAOIMHÍN CONNELL

Park County (CO) Sheriff's Office

RENEE FUNK

National Institute for Occupational
Safety and Health, Emergency
Preparedness and Response
Office

DARIO GONZALEZ

City of New York (NY) Fire
Department, Office of Medical
Affairs

STEPHAN GRAHAM

U.S. Army Institute of Public
Health

RANDALL GRIFFIN

DeWitt (NY) Fire District

EARL HALL

Powell County (MT)

DAN HANFLING

Fairfax County (VA) Fire and
Rescue Department

KEN MILLER

Orange County (CA) Fire
Authority and Health Care Agency
Emergency Medical Services

FRANKLIN PRATT

Los Angeles County (CA)
Fire Department

JEFFREY RACE

Pineville (NC) Fire Department

REED SMITH

Arlington County (VA) Fire
Department

LAWRENCE TAN

New Castle County (DE)
Emergency Medical Services

THOMAS WALSH

Mt. Erie (WA) Fire Department

HERBERT WOLFE

Department of Health and Human
Services, Office of the Assistant
Secretary for Preparedness and
Response

SUBJECT MATTER EXPERTS

ED DOLAN

Department of Homeland Security

SUSAN JONES-HARD

Center for Homeland Defense
and Security

LUIS KUN

National Defense University

GREGG LORD

Department of Health and Human
Services, Emergency Care
Coordination Center

PAUL MANISCALCO

International Association of
Emergency Medical Services
Chiefs

DAVID MARCOZZI

Department of Health and Human
Services, Office of the Assistant
Secretary for Preparedness and
Response

CARTER MECHER

Department of Veterans Affairs

CHRISTY MUSIC

Office of the Assistant Secretary
of Defense for Homeland Defense
and Americas' Security Affairs

KARI SCANTLEBURY

Inova Fairfax Hospital

MICHAEL SCOTT

Kent (WA) Fire Department,
Kent Fire Training Academy

TIM STEPHENS

Emergency Services Coalition
for Medical Preparedness

FEMA National Preparedness Directorate (NPD). HMRS also draws upon a wide range of SMEs, both from within and outside the IAB, to provide input into the HMRS work plan projects, goals, objectives, and deliverables.

ACCOMPLISHMENTS

- Conducted a workshop for the review of current best practices for stress management programs and processes for emergency services sector personnel. This will provide further guidance for promotion of acceptable practices in ensuring mental health issues are properly addressed within the emergency response community.
- Established a prioritized list of research and development issues impacting the health and safety of our nation's first responders.
- Continued efforts to establish effective long-term health monitoring processes and techniques for first responders.
- Completed a review of SEL and AEL items.

STATE & LOCAL CO-CHAIR

DR. SANDY BOGUCKI

Fire Surgeon, Branford (CT) Fire Department

Dr. Sandy Bogucki is an Emergency Medicine Physician with more than 20 years of experience working in the first responder community and academia. In addition to her position as Fire Surgeon for the Branford, Connecticut, Fire Department, she is also the EMS Medical Director for 12 cities and towns and 21 provider agencies in the New Haven area, responsible for medical oversight of about 250 paramedics and 800 EMTs. She is an Associate Professor in the Department of Emergency Medicine at the Yale University School of Medicine and teaches medical and public health preparedness and emergency response at the Yale School of Public Health.

FEDERAL CO-CHAIR

DR. DUANE CANEVA

Senior Medical Advisor, Department of Homeland Security, Customs and Border Protection

Dr. Duane Caneva is an Emergency Medicine Physician with more than 20 years of experience with emergency medicine and disaster response. His operational experience includes service as an undersea medical officer with the U.S. Navy SEALs; senior medical officer with the U.S. Marines Chemical Biological Incident Response Force (CBIRF); and Head, Shock Trauma Platoon at Fallujah Surgical in Iraq. His real-world experience includes response with CBIRF to the U.S. Capitol Amerithrax incident and numerous mass casualty medical responses including two chemical mass casualties in Iraq.

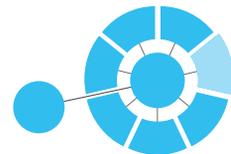
He has policy and program management experience, having served on staff of the Navy Surgeon General and on the White House National Security Staff, developing and implementing national and homeland security policy and strategy.

Dr. Caneva is board-certified in Emergency Medicine, received his medical degree from the University of Chicago, and holds a Master of Science in National Security Strategy from the National War College.

IM&C

**INFORMATION
MANAGEMENT &
COMMUNICATIONS
SUBGROUP**

IM&C



IM&C

INFORMATION MANAGEMENT & COMMUNICATIONS SUBGROUP



STATE & LOCAL CO-CHAIR

MARK HOGAN
City of Tulsa (OK)

FEDERAL CO-CHAIR

MIKE TUOMINEN
*National Interagency Fire Center, National Interagency
Incident Communications Division*



ROLES AND FUNCTIONS

The IM&C SubGroup accomplishes its mission through the identification of needs and gaps in the responder information and communications environments in order to recommend and advocate for mitigating solutions and standards. The scope includes the following practices and technologies:

- System and strategy improvements for intelligence and decision support, including the collection, administration, sharing, analysis, and protection of information.
- Gaps and challenges related to information collection, sharing, classification, categorization, storage, security, and dissemination that affect incident prevention and emergency preparedness and response.



The mission of the Information Management and Communications (IM&C) SubGroup is to develop and advocate processes, protocols, and technologies for effective, timely, accurate, secure, and resilient information management and communications capabilities for addressing the full range of incidents at all phases of operations.

Photo Courtesy of Charlotte (NC) Fire Department

- Decision support materials and interoperable communications technologies, policies, and strategies.
- Effective development and integration of interoperable communications and decision support technologies and practices to provide indications and warnings, and information/intelligence support for operations.

The primary means by which the IM&C SubGroup accomplishes its mission is through the quick, efficient, and beneficial exchange of information, whether voice or data (i.e., communications). In after-action reports for major incidents and drills throughout the nation, communications continues to be listed among the top issues needing more work. “Interoperability” continues to be one of the most-used buzzwords in the realm of emergency response, on all levels.

Perhaps the greatest strength of the IAB is the emphasis on the practitioner. The majority of the membership consists of current first responders from EMS, emergency management, fire, and law enforcement agencies. The standards and equipment guides are developed by first responders, for first responders. In this work, responder members are fortunate to have the support and input from the rest of the membership, comprised of representatives from state and federal government, academia, industry, and others. While working with the other IAB SubGroups, the IM&C SubGroup’s role has always been one of developing a common or standardized operating picture for all the essential components of an emergency incident response. The unique quality of this effort is providing the information from the responder’s perspective.

MEMBERSHIP

LEIF ANDERSON

Phoenix (AZ) Fire Department

JOSEPH BOOTH

Louisiana State University,
Stephenson Disaster Management
Institute

DON BOWERS

Fairfax County (VA) Fire and
Rescue Department

JAMES CRONKHITE

United States Northern Command

LEONARD EDLING

Merrionette Park (IL) Fire
Department

JOHN FREEBURGER

Montgomery County (MD)
Fire and Rescue Service

WALTER KAPLAN

United States Department of
Health and Human Services,
National Veterinary Response
Team-2

CHRISTOPHER LOMBARD

Seattle (WA) Fire Department

VANCE MEADE

City of San Antonio (TX)
Fire Department

GEORGE PERERA

Miami-Dade (FL) Police
Department

CHRIS PITTMAN

Sacramento County (CA)
Sheriff's Department

MARTY RYCZEK

Chicago (IL) Police Department

GREG SACKMAN

Seattle (WA) Police Department

MARK SAXELBY

Los Angeles (CA) Fire Department

WILLIAM SNELSON

United States Marshals Service

JOHN SULLIVAN

Los Angeles (CA) County
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SUBJECT MATTER EXPERTS

ROB ABRAMOWITZ

Department of Homeland Security,
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JERALD DAWKINS

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MATT DEVOST

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ROBERT HORNE

Washington Regional Threat
and Analysis Center

SARAH IERLEY

Montgomery County (MD) Fire &
Rescue Service

SUSAN MCGRATH

Dartmouth College

NEAL POLLARD

Georgetown University

JEFFREY RODRIGUES

Cook County (IL) Department
of Homeland Security and
Emergency Management

DAVID TRITCH

Ohio Task Force 1, Federal
Emergency Management Agency
Urban Search and Rescue

The IM&C SubGroup acknowledges that there are many other national groups focusing on improving incident communications. While involved and participating in many of these other groups' efforts, we believe it is our emphasis on the involvement of actual responders that makes the IAB and IM&C SubGroup unique. Others of these groups are tasked with developing long-term solutions. Some are developing wide-reaching solutions, and some are mission-specific or discipline-specific. Because of the IAB's ability to speak to the end-user's perspective ("ground-truthing"), members of the IM&C SubGroup provide expert advice and guidance to many of these other organizations.

The two-way information flow is beneficial to all involved. Through this process, our federal partners are able to rapidly obtain feedback essential to improving the safety and security of our nation. First responders are rewarded through the timely dissemination of information regarding such issues as grant programs, technology trends, resources, and ongoing research and development. It is the IM&C SubGroup's goal to provide yet another means to disseminate information to those who may not otherwise receive it.

The IM&C SubGroup continues to emphasize standardization of equipment and methods used for communications by first responders, focusing on several vital areas:

- Computer Aided Dispatch (CAD)-to-CAD interfaces
- Records Management Systems (RMS)-to-RMS interfaces
- CAD-to-RMS interfaces
- Skills and training of communications support personnel
- Cybersecurity
- Intelligence sharing and exchange
- Common Operating Picture



ACCOMPLISHMENTS

CYBERSECURITY CONTINUUM

Information Technology (IT) is ubiquitous throughout 2 things: Emergency Services sector many aspects of people's daily lives. With this increased reliance comes increased responsibility and accountability with regard to information assurance, cybersecurity, identity/access management, and data security management. As we live in a globally interconnected world that is both threatening and dynamically evolving, organizations, businesses, and agencies across both the public and private sector must develop and implement innovative processes and procedures to meet emerging threats while planning for future challenges. Unfortunately, the amount of information and guidance available to assist in making cybersecurity decisions can be daunting and the breadth and depth of the cybersecurity challenge can overwhelm even the most IT-savvy manager. The IM&C SubGroup understands this and, in concert with practitioners in the field, has begun developing companion documents, The Cybersecurity Continuum and The Cybersecurity Quick Reference Guide, as supporting tools to assist managers in both assessing their current cyber readiness and developing processes and programs to meet future threats.

The Cybersecurity Continuum mirrors the Department of Homeland Security's SAFECOM Interoperability Continuum with categories for Governance, Processes and Procedures, Technology, and Training/Exercises. The Cybersecurity Continuum is designed to provide a template for conducting assessment baselines within individual or multi-unit organizations and provides ready benchmarks for determining organizational cybersecurity posture. The sister document, The Cybersecurity Quick Reference Guide, incorporates matrices along several lines, including: People, Processes, Technology, Security, Operations & Maintenance, Analysis, and Recovery. The fact that cyber-attacks are routinely non-kinetic and occur "at the speed of light" requires IT personnel to develop and implement persistent defense and mitigation techniques. The Guide highlights this multi-dimensional nature and offers both proactive and reactive response measures that enable leaders at all

levels to make decisions with limited information in a potentially degraded operating environment.

COMMUNICATIONS UNIT LEADER (COML)/ COMMUNICATIONS UNIT TECHNICIAN (COMT)

The IM&C SubGroup recognizes that the interrelationships between agencies, jurisdictions, and people continue to be the core issue underlying communications interoperability. Further, only as efforts continue to be directed at addressing the people/relationship issues will true interoperability be achieved.

To that end, and in keeping with the mission of the IAB, the IM&C SubGroup continues working toward these by:

- Emphasizing interoperability, compatibility, and standardization
- Fostering a multidisciplinary perspective
- Facilitating effective intergovernmental partnerships
- Starting preliminary work on addressing these issues when the events surrounding September 11, 2001, emphasized their importance

Two programs having the most impact in this area are courses developed by the DHS's Office of Emergency Communications (DHS OEC). All-Hazards Communications Unit Leaders (COML) and All-Hazards Communications Technician (COMT) courses provide the responder community with knowledge, skills, and abilities to address the dynamic communications challenges presented in various incident environments.

DHS courses continue to result in thousands of individuals being trained nationwide. The courses call for students to meet some prerequisites, to take a 3-day, 24-hour course for COML (5-day, 40-hour course for COMT), to go through a field practicum, and finally, to go through a yet-to-be-defined process for final certification.

Responsibility for the course has transitioned from the DHS OEC to the Federal Emergency Management Administration (FEMA) instructional group, the Emergency Management Institute (EMI). The National



Consortium for Justice Information and Statistics (SEARCH) has, and will continue, to administer the course.

One challenge of the program is that although students are completing the task book portion of the course, state and federal governments continue to be hesitant about becoming the certifying entity. Further, because of budget cuts, many states are losing those agencies (State Interoperability Offices) that could have potentially issued the certification.

The IM&C SubGroup has continued our partnership with the Louisiana State University Stephenson Disaster Management Institute (SDMI) to address the certification issues. The National Registry for Emergency Communication Technicians (NRECT), the IAB, and SDMI continue to work with SEARCH and FEMA regarding the interrelationships necessary to keep this effort progressing. The SubGroup continues to coordinate efforts between SEARCH (teaching the course), FEMA EMI (owner of the course), and SDMI (the certifying entity).

C4ISR/COMMON OPERATING PICTURE/ CYBERSECURITY

The IM&C SubGroup has fostered a working relationship with Emergency Services Sector (ESS) to provide direct input for a number of development programs. State and Local Co-Chair Mark Hogan is leading an effort by chairing a cybersecurity advisory group which has created a cybersecurity roadmap for the sector. The final copy of the roadmap awaits DHS approval.

At the request of the ESS-SSA (Sector-Specific Agency), the SubGroup completed a review of all portals and networks available to responders and considered what value each portal offers, located duplicity, and offered suggestions for consolidation. The SubGroup has also looked at single sign-on versus linked portals, which often require a second login to actually access the portal. Highlights of the review are as follows: Responders are relying on government supported web portals less and less due to the fact that publicly accessible sites, such as

Dropbox, permit greater sharing and processing of information. The ability for responders to reference and upload data in multiple forms from multiple sites is critical. The lack of an easy-to-use information sharing platform compels most responders to use Facebook and other social media as a primary means of sharing textual information. Responders increasingly use Twitter as their real-time intelligence platform. The ease of use, lack of a username for consumption only, ability to search, and inclusion of offsite links, photos, and video over social media platforms have given responders a virtual real-time feed.

As DHS matures its access to those portals, the information contained therein must be streamlined. The easier it is to gain access to the information, the greater the user base and utility of the portal. A user enrollment process with authentication is a recognized necessity. However, authentication does not need to be exclusive by practice discipline (police, fire, EMS). In other words, information can and should be segregated by discipline for organization of information, but not to limit access and sharing of information. As an example, information relevant to law enforcement may not be sensitive and should be accessible by the fire service, but not pushed directly to the fire service, as it is not relevant to their interests or needs.

Access to information should be organized horizontally in three simple levels, instead of the numerous, competing vertical information silos organized by disciplines as it is now. One level would provide first line responders access to uniform information with the ability to report back. The next would be an investigations level to facilitate investigative information management. The last level would be an analytical strata supporting both first line responders and investigators. Additionally, each of these levels could support tactical, operational, and strategic assessment.

The IM&C SubGroup conducted a survey of ESS participants to determine perceptions on the risks and effects cyber interruptions pose to critical ESS systems.



Threats to online security have grown and evolved considerably in the past two years, significantly increasing the threats to our nation's ESS—a system of preparedness, response, and recovery elements that form the nation's first line of defense for preventing and mitigating risks from manmade and natural threats. The ESS continues to be susceptible to the strategic targeting of cyber-attacks. The ability of the ESS to prepare, react, and respond swiftly to a cyber-incident or a cyber-aggravated incident, is a direct function of its ability to communicate and transmit accurate information and share information with all parties, including the private sector that is largely responsible for most of the nation's critical infrastructure and key resources (CIKR). Attacks on ESS entities adversely impact their emergency response capability; however, coordinated or random attacks at a regional or multi-regional level, would affect the ESS's resiliency and sustainability, severely impact resources, and degrade the trust of the American people in our emergency services.

OBSERVATIONS AND RECOMMENDATIONS:

- *Lack of trust among stakeholders.*
ESS intelligence cultures are very different from one sector to another, making trust among agencies and CIKR private sector partners a very complex issue. We also have a changing and fluid transnational threat landscape that is constantly morphing and evolving.
- *Move from compliance-based reporting to risk management.*
It is urgent that our limited resources be invested wisely in meaningful tasks. The efforts of the ESS and CIKRs must move away from periodic compliance-based reporting (A-130 - Management of Federal Information Resources) to adherence to a sound risk management framework.
- *Need for incentives and funding.*
There is a clear need to advocate for cybersecurity funding for the ESS, to help stakeholders understand this new imperative. CIKRs need to be part of the equation, since

regulation has shown that incentive structures that foster healthy CIKR participation in cyber resiliency promote a static compliance culture.

- *Protections for the sharing of information.*
Liability protection against information disclosure and potential related impacts and protection of sensitive corporate information against Freedom of Information Act (FOIA) access are necessary for private sector information sharing. Efforts must also focus on good information flow from government to the private sector so that risks, response, and recovery can be managed effectively.
- *Lack of qualified personnel.*
We know that technology alone will not fix the problem—we need well-trained people able to adapt to the evolving threats. We recommend that cybersecurity awareness be made available to all stakeholders. We also recommend that specialized training be developed to educate ESS personnel as to how cybersecurity affects their functions and how to reduce the risk of cybersecurity threats to their mission areas.

Our development of a shared understanding of implications and best practices for the management and governance for the safe adoption of technologies are surpassed by the speed with which these technologies are adopted. The time has come for public and private cybersecurity action. This is the ESS imperative for cybersecurity resiliency and information sharing.

OTHER ACTIVITIES

The IM&C SubGroup has participated directly with the Federal Communications Commission (FCC) Emergency Response Interoperability Council Public Safety Advisory Committee (ERIC PSAC), the SAFECOM Emergency Response Council, and the DHS S&T First Responder Group (FRG) providing direct input, as well as reach back capability, to the IAB and the first responder community.

STATE & LOCAL CO-CHAIR

MARK HOGAN

Chief of Security, City of Tulsa (OK)

Mark Hogan is the Chief of Security for the City of Tulsa and has 23 years of experience in critical infrastructure security and law enforcement. He is a member of the State, Local, Tribal, and Territorial Government Coordinating Council (SLTTGCC) and sits on their Cyber Working Group. Mark chairs the Cyber Working Group for the ESS and is active in several current cyber-related issues at DHS.

Mr. Hogan has assisted in the compiling and proofing handbooks used by Homeland Security for Fusion Centers and co-authored a series of best practices covering terrorism information and intelligence sharing, analysis and synthesis, and dissemination of information.

Mr. Hogan has been a reserve peace officer for 21 years, first serving in Wagoner County, Oklahoma, and currently serving as a reserve police officer in Broken Arrow, Oklahoma.

FEDERAL CO-CHAIR

MIKE TUOMINEN

Branch Chief, National Interagency Fire Center,
National Interagency Incident Communications
Division

Mike Tuominen has more than 20 years of experience in incident communications, and serves at the national level as an operations specialist for all-risk incident communications involving both natural- and human-caused disasters. During such incidents, he fills the role of Communications Technician, Unit Leader, Coordinator, Duty Officer, or Technical Specialist. His duties include managing all facets of emergency communications systems utilizing low-power, very-high-frequency, and ultra-high-frequency land mobile radio; high-frequency and satellite radio and telephone; and frequencies equipment and personnel resources for areas involved in severe multi-incident emergencies. He is also involved in training through the National Wildfire Coordinating Group for Incident Communications Technician S-258, Communications Unit Leader S-358, and Communications Coordinator, and was involved in the development of all-risk Communications Unit Leader and Communications Technician courses. Past assignments include Hurricanes Katrina and Rita, 2005; technical assistance to the Republic of Ghana, 2005; Alaska, Northern California, Northern Rockies, Northwest, Southern, and Southwest Fires, 2005 through 2010; Haiti Earthquake, 2010; and North Dakota Flooding, 2010.



S&T

SCIENCE &
TECHNOLOGY
SUBGROUP

S&T



S&T

SCIENCE & TECHNOLOGY SUBGROUP



STATE & LOCAL CO-CHAIR

DOUGLAS CARLEY

Grand Rapids (MI) Fire Department



FEDERAL CO-CHAIR

GABRIEL RAMOS

*Technical Support Working Group, Combating Terrorism
Technical Support Office*

ROLES AND FUNCTIONS

The primary functions of the S&T SubGroup are to develop and update the IAB S&T first responder research and development requirements; coordinate IAB representation on federal requirements boards; record and prioritize requirements of individual SubGroups; report to SubGroups on federal requirement initiatives; and assess innovative government-developed and industry-developed technologies. The S&T SubGroup also identifies future technology needs for detection, individual protection, collective protection, medical support, decontamination, communications systems, information technology, and operational equipment.



The S&T SubGroup’s mission is to identify interagency (federal, state, local, and tribal) research and development requirements and innovative technologies (fieldable within six months to five years) for first responders that address CBRNE focus areas that include but are not limited to: detection, individual protection, collective protection, medical support, decontamination, communications systems/information technology, deterrence and prevention, and security/situational awareness.

Photo Courtesy of South Carolina Law Enforcement Division

ACCOMPLISHMENTS

During FY13, the S&T SubGroup accomplished the following:

- Followed-up on detailed review and prioritization of S&T needs and projects (with designated SubGroup Chairs serving as mission area leaders).
- Administered a web-based survey to prioritize research and development (R&D) requirements from SubGroups.
- Conducted a statistical analysis of the IAB R&D requirements survey results and delivered a Prioritized R&D Requirements List for official publication.
- Coordinated input into federal R&D agencies to leverage IAB-prioritized requirements.
- Conducted interactive teleconference with BioWatch development group and made available Ad-Hoc Working Group to support review of response protocols for the Gen 3 BioWatch program.
- Worked toward the development of a graphic training aid (GTA) in conjunction with DHS Transportation Security Administration (TSA).
- Attended the following events:
 - » Technical Support Working Group (TSWG) PPE Conference
 - » CAPEX (Capabilities Exercise)
 - » Joint Inter-Agency Field Experiment (JIFX), Camp Roberts
 - » National Homeland Security Conference
 - » 3D Tracking Conference

MEMBERSHIP

CRAIG ADAMS

Los Angeles (CA) Police
Department

KENNETH BRENNAN

Federal Bureau of Investigation,
Technical Hazards Response Unit

BRYAN COOKE

Fairfax County (VA) Police
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DEAN COX

Fairfax County (VA) Fire and
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NANCY SUSKI

Lawrence Livermore National
Laboratory

DARREN WHEELER

Department of Defense, Joint
Program Executive Office
Chemical and Biological Defense

2012-2013 INITIATIVES

The S&T SubGroup has established a formal process to collect and prioritize IAB R&D requirements. This work continued in 2013 and involved a new requirements collection survey from all IAB SubGroups, followed by statistical analysis and prioritization based on results of the survey. The S&T SubGroup is also working with the IAB Program Staff to revise and update the requirements survey process to improve efficiency, data collection, and analysis of results. A pilot of the new survey process is planned to occur in 2014.

The SubGroup will: invite industry representatives and federal R&D labs/centers to deliver focused S&T briefings to the SubGroup; prepare S&T technical summaries of new and emerging technologies that will be published by the S&T SubGroup on the R&D Database; and coordinate visits to industry R&D facilities and federal R&D labs/centers.

The S&T SubGroup will continue work to support a demographic database and analysis of the IAB membership. New demographic data was gathered in 2013.

IDENTIFIED REQUIREMENTS (2013)

The following prioritized R&D requirements were identified by the SubGroups in 2013 as capability gaps that should receive special consideration by R&D initiatives.

2013 IAB Research and Development Priority List*

1. ENHANCE COMMUNICATIONS IN ENVIRONMENTS THAT INTERFERE WITH RADIO TRANSMISSIONS
2. 3-D TRACKING OF PERSONNEL
3. HANDHELD STANDOFF CHEMICAL AND EXPLOSIVE IDENTIFIER
4. NOISE-FILTERING DIGITAL SPEAKER/MICROPHONE FOR SCBA FACEPIECE
5. HANDS-FREE RADIO INTERCOM
6. FIELD DETECTION/ANALYSIS DEVICES FOR FIRE GASES & PARTICULATES
7. VEHICLE-BORNE IMPROVISED EXPLOSIVE DEVICE (VBIED) RENDER SAFE TOOL
8. DEVELOP MODEL PROCEDURES AND/OR LESSONS LEARNED FROM FIRST RESPONDERS TO ATYPICAL EMERGENCIES
9. SMART RESPONSE VEHICLES
10. PUBLIC SAFETY SECURE VOICE COMMUNICATIONS
11. NATIONAL VIRTUAL COMMAND AND CONTROL INTERFACE TOOL
12. COMPREHENSIVE NATIONAL LIBRARY THAT TRACKS FIRST RESPONDER R&D PROJECTS
13. PROACTIVE TRAINING RESOURCE (PTR) INITIATIVE
14. NATIONAL PATIENT TRACKING SYSTEM
15. CONOPS ANALYSIS FOR ROBOTIC APPLICATIONS WITHIN THE FIRE SERVICE
16. MODELING, SIMULATION, & SIMULATOR SOFTWARE EVALUATION TOOL
17. INCIDENT STRESS MANAGEMENT SYSTEM
18. FIRST RESPONDER APPLICATION STORE
19. FIRE RESOURCE DEPLOYMENT MODELING TOOL
20. IMPROVED GOOD SAMARITAN LAW AT FEDERAL LEVEL AND RELATED PSAS

*SEE APPENDIX FOR A DETAILED DESCRIPTION OF EACH PRIORITY.

2013 IAB RESEARCH AND DEVELOPMENT PRIORITIES: BREAKDOWN BY SUBGROUP

Equipment SubGroup (ESG)

1. HANDHELD STANDOFF CHEMICAL AND EXPLOSIVE IDENTIFIER
2. FIELD DETECTION/ANALYSIS DEVICES FOR FIRE GASES & PARTICULATES
3. VEHICLE-BORNE IMPROVISED EXPLOSIVE DEVICE (VBIED) RENDER SAFE TOOL

Health, Medical, & Responder Safety (HMRS) SubGroup

1. INCIDENT STRESS MANAGEMENT SYSTEM

Information Management & Communications (IM&C) SubGroup

1. ENHANCE COMMUNICATIONS IN ENVIRONMENTS THAT INTERFERE WITH RADIO TRANSMISSIONS
2. 3-D TRACKING OF PERSONNEL
3. NOISE-FILTERING DIGITAL SPEAKER/MICROPHONE FOR SCBA FACEPIECE
4. HANDS-FREE RADIO INTERCOM
5. PUBLIC SAFETY SECURE VOICE COMMUNICATIONS

Science & Technology (S&T) SubGroup

1. DEVELOP MODEL PROCEDURES AND/OR LESSONS LEARNED FROM FIRST RESPONDERS TO ATYPICAL EMERGENCIES
2. SMART RESPONSE VEHICLES
3. COMPREHENSIVE NATIONAL LIBRARY THAT TRACKS FIRST RESPONDER R&D PROJECTS
4. CONOPS ANALYSIS FOR ROBOTIC APPLICATIONS WITHIN THE FIRE SERVICE

Strategic Planning SubGroup (SPSG)

1. NATIONAL VIRTUAL COMMAND AND CONTROL INTERFACE TOOL
2. NATIONAL PATIENT TRACKING SYSTEM
3. FIRST RESPONDER APPLICATION STORE
4. FIRE RESOURCE DEPLOYMENT MODELING TOOL

Training & Exercises (T&E) SubGroup

1. PROACTIVE TRAINING RESOURCE (PTR) INITIATIVE
2. MODELING, SIMULATION, AND SIMULATOR SOFTWARE EVALUATION TOOL
3. IMPROVED GOOD SAMARITAN LAW AT FEDERAL LEVEL AND RELATED PSAS

STATE & LOCAL CO-CHAIR

DOUGLAS CARLEY

Lieutenant, Grand Rapids (MI) Fire Department

Doug Carley is a Fire Lieutenant with the Grand Rapids (MI) Fire Department. He joined the Fire Department in August 1985 and is currently assigned to Ladder Company #2. Prior to working with the Fire Service he spent 4 years as a Hull Maintenance Tech in the U.S. Navy serving on the aircraft carrier USS Carl Vinson. In 1987, he was assigned as Radiological Officer for the City of Grand Rapids. In 1987, he was certified as a HazMat Technician and also attained HazMat Specialist in 1993. He served on the Grand Rapids HazMat Team from 1994–2009. He has served on a variety of local and state Homeland Security boards helping to provide direction and expertise on HazMat-related issues. He also served as a Team Leader for one of Michigan's Regional Response Teams where he served as the equipment chair for all the state's Regional Response Teams. Mr. Carley has been a member of the IAB since 2007.

FEDERAL CO-CHAIR

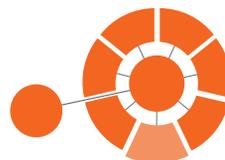
GABRIEL RAMOS

Deputy Director, Technology Division
Combating Terrorism Technical Support Office,
Technical Support Working Group

Gabriel Ramos is the Deputy Director of the Technology Division Directorate of the CTTSO, providing management and technical oversight for the execution of the TSWG rapid R&D program. He has 28 years of experience developing and evaluating Combating Terrorism (CT) capabilities for the Department of Defense (DOD) and the federal interagency community. Mr. Ramos has a B.S. in chemical engineering from the Polytechnic University, Brooklyn, N.Y. and is also a graduate of the U.S. Army School of Engineering Logistics Product/Production Engineering Program. Mr. Ramos has served as the IAB federal co-chair of the S&T SubGroup since February 2003.

SCSG

**STANDARDS
COORDINATION
SUBGROUP**



STANDARDS COORDINATION SUBGROUP



STATE & LOCAL CO-CHAIR

MARTIN HUTCHINGS

Sacramento County (CA) Sheriff's Department



FEDERAL CO-CHAIR

PHILIP J. MATTSON

Department of Homeland Security, Science & Technology Directorate, Acquisition Support and Operations Analysis Group, Office of Standards

ROLES AND FUNCTIONS

The SCSG supports and coordinates the IAB's efforts to identify and meet standards requirements within the emergency responder community. The IAB SubGroups identify standards to be adopted, revised, or developed. The SCSG assists with the following:

- Identifying and prioritizing standards requirements and related interoperability and compatibility issues.
- Identifying existing standards, performance requirements, and test methods that could streamline the development of new standards or be modified to meet the needs of emergency responders.
- Identifying potential conflicting requirements and facilitating reconciliation of these issues.



The mission of the SCSG is to identify and coordinate standards development needs and activities within the IAB, with external organizations, and with the emergency responder community. The objective is to promote local, tribal, state, and federal preparedness by developing and implementing standards for emergency responder needs associated with all-hazards incidents, especially those involving CBRNE events. By focusing the nation's resources and expertise in a common effort to establish standards to which critical capabilities can be tested, evaluated, and certified, the SCSG helps to provide emergency responders with objective guidance for making informed decisions regarding the development, acquisition, and fielding of capabilities.

Photo Courtesy of Wantagh (NY) Fire Department

- Participating in standards development and revision processes
- Drafting and disseminating studies, white papers, and other reports on standards, interoperability issues, and compatibility issues
- Recommending and promoting the adoption and use of standards and conformity assessment requirements
- Identifying and informing emergency responders about relevant standards activities, comment periods, and programs
- Tracking and reviewing the progress of standards activities of interest to the IAB and serving as a feedback loop to the IAB to ensure collaboration and prevent duplication of efforts

MEMBERSHIP

The SCSG includes representatives from federal, state, and local agencies, as well as SMEs from private standards development, certification, and testing organizations.

PARTNERSHIPS

The success of the IAB's standards efforts relies on its partnerships with regulatory agencies, federal agencies funding standards development, standards development organizations, and the responder community. For example, with regard to equipment, the SCSG serves as the IAB's liaison to these partners in matters relating to performance requirements, test methods, certification requirements, and selection, use, care, and application guides. The SCSG

MEMBERSHIP

CHARLES CORDOVA

Seattle (WA) Fire Department

MATTHEW DUGGAN

Boca Raton (FL) Police Services Department

ALIM FATAH

National Institute of Standards and Technology

JEFF FINN

Fairfax County (VA) Police Department, SWAT

LISA LYON

U.S. Army, Maneuver Support Center

TIM REHAK

*National Institute for Occupational Health and Safety,
National Personal Protective Technologies Laboratory*

CASSY ROBINSON

National Institute of Standards and Technology

MARK STOLOROW

*National Institute of Standards and Technology,
Law Enforcement Standards Office*

JONATHAN SZALAJDA

*National Institute for Occupational Health and Safety,
National Personal Protective Technologies Laboratory*

BRIAN WASHBURN

Santa Clara County (CA) Sheriff's Office

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Emergency Operations Unit*

STEVEN CORRADO

Underwriters Laboratories

PAT GLEASON

Safety Equipment Institute

RICK LAKE

*American Society of Testing and Materials
International*

MATT MCLAUGHLIN

U.S. Army Training and Doctrine Command

THOMAS NOLAN

Upper Merion Township (PA) Police Department

DANIEL SHIPP

International Safety Equipment Association

members and SMEs represent many federal and private agencies and have working relationships with many others, such as the following:

- American National Standards Institute (ANSI)
- International Association of Chiefs of Police (IACP)
- International Association of Fire Chiefs (IAFC)
- International Association of Fire Fighters (IAFF)
- National Bomb Squad Commanders Advisory Board (NBSCAB)
- National Tactical Officers Association (NTOA)

IAB STANDARDS DEVELOPMENT PRIORITIES AND ADOPTED OR REFERENCED STANDARDS

The SCSG supports and coordinates the IAB's efforts to identify and prioritize standards requirements derived from the responder community. In FY13, eight standard requirements were identified and prioritized by the IAB membership via a survey. The survey responses were statistically analyzed, and a prioritized list was developed and vetted by the membership to establish the IAB Standards Development Priorities List. This list is published on the IAB website at www.iab.gov.

FY13 IAB STANDARDS DEVELOPMENT PRIORITIES

Tier 1

- Standard for public safety bomb suits additional requirements
- Standardized equipment training program format
- Standard test method for respirator fit test equipment

Tier 2

- Performance standard for protective helmets
- Performance standard for protective shields
- Performance standard for explosive containment vessels: vented and total containment

Tier 3

- Performance standard for tactical operation video cameras
- Standard for robot operator self-evaluation and training program

Additionally, the SCSG maintains a list of standards that have been adopted or referenced by the IAB.

FY13 IAB ADOPTED STANDARDS

The adopted Standards List located at the end of the SEL includes standards officially adopted by the IAB. The IAB adopted five new standards in FY13:

- ASTM E2902-12, Standard Practice for the Measurement of Body Armor Wearers
- NFPA 1582, Standard on Comprehensive Occupational Medical Program for Fire Departments, 2013 Edition
- ASTM E2852-13, Standard Guide for Acquisition, Maintenance, Storage, and Use of Hazardous Material Detection Instrumentation
- ASTM E2885-13, Standard Specification for Handheld Point Chemical Vapor Detectors (HPCVD) for Homeland Security Applications
- ASTM E2933-13, Standard Specification for Stationary Point Chemical Vapor Detectors (SPCVD) for Homeland Security Applications

ACCOMPLISHMENTS

During the past year, the SCSG has successfully influenced the development of priorities for standards, as well as the initiation and/or revision of several protective equipment and all-hazards related standards. Specific accomplishments for the year include the following:

- Expanded representation to include new perspectives and expertise from the International Safety Equipment Association, tactical law enforcement, and the corrections communities.
- Served as the IAB's liaison to numerous NFPA technical committees.
- Continued to promote the DHS program requirement that provides funds specifically for the purchase of CBRNE equipment meeting DHS established or adopted performance standards.
- Participated in ASTM standards development activities in the following areas: standards for chemical detectors, response robots, decontamination equipment, and body armor.
- Improved and simplified the process for identifying needed standards and standards for adoption by creating an automated system on the IAB's internal SharePoint website.
- Developed a process for managing standard requirements following submission of the

Identification of Standards Requirements form, which includes maintaining a library of items and categorizing standards priorities for appropriate follow-up:

- » Category 1: The need is currently unaddressed. The SCSG follows-up by requesting federal agency and standards development organization support in addressing these items.
 - » Category 2: The need is being addressed and will be monitored by the SCSG until fully resolved.
 - » Category 3: The need has been fully resolved and no further action is needed.
- Developed letters to federal agencies and standards development organizations requesting assistance in support of Category 1 standards priorities, which are described below:

- » **Standard for public safety bomb suits**

- **additional requirements:** The scope of this requirement is to develop performance requirements and test methods to be added to the current version of NIJ Standard-0117, Public Safety Bomb Suit Standard, to address the following:

- ♦ Blast overpressure protection – The effects of blast overpressure on the human body need to be taken into account to address impact to the head, neck, thorax, abdomen, and ears.
- ♦ Integration of chemical/biological protection, including respirator facepiece and helmet interface – Bomb technicians currently have to wear a chemical/biological protective ensemble in addition to a bomb suit to have both types of protection at once.

Development of performance requirements and test methods will require research and testing.

- » **Standardized equipment training program format:**

- A standardized equipment training program format is needed to provide equipment manufacturers and vendors with guidance for developing training courses, instructions, and materials for end users of the respective equipment. This standard should be based on technical equipment

requiring a specialist to technician level of skill rather than common equipment (e.g., consumables, batteries, and simple hand tools). The IAB published a white paper containing relevant information that could serve as the basis for a standard.

- » **Standard test method for respirator fit test equipment:** There is a concern among responders who wear respiratory protection that current test methods for respirator fit test machines are not sufficient. For example, with current respirator fit test equipment, a respirator could pass the fit test when it should have failed due to such things as turning the head or an inconsistent interface between the respirator and the equipment.

The scope of the needed standard is to test the equipment used to fit respiratory protection to an individual. There are existing standards for programs and respirator fit methods but not for the fit test equipment.

- » **Performance standard for protective helmets:** A new standard is needed to define performance requirements and test methods for head protection, including protection against bullet threats and blunt trauma.

Several performance standards and test methods exist for head protection, but most are outdated and do not address current technologies or threats. Development of performance requirements and test methods will require research and testing.

Existing standards are identified below:

- ♦ NIJ Standard 0106.01 for Ballistic Helmets – December 1981—addresses penetration threat and ballistic impact attenuation, but not blunt trauma. Test methods for Types I, II-A, and II.
- ♦ NIJ Standard 0104.02 for Riot Helmets and Face Shields – October 1984
- ♦ PSDB Protective Headwear Standard for UK Police – 2004 (not ballistic)
- ♦ Canadian Standards Association Z613, *Ballistic Helmets*—Draft; under development
- ♦ U.S. Military – TOP 10-2-217 (Draft) – *Ballistic Testing of Helmets*

- ♦ H.P. White Laboratory, Inc.—HPW-TP-0401.01B, *Bullet Resistant Helmet* – 1995
- ♦ H.P. White Laboratory, Inc.—HPW-TP-0402.01, *Ballistic/Riot Helmet Face Shields* – 2000

Several types of head protection are used by law enforcement and corrections officers, and a comprehensive standard addressing all types of protection is needed:

- ♦ *Ballistic Helmet* – protects against rifle and handgun rounds
- ♦ *Riot Helmet* – protects against hand-delivered improvised projectiles (bottles; bricks; liquids—flammable, biological and corrosive) and hand-delivered blunt trauma weapons (bats, sticks, wooden or metal rods, etc)
- ♦ *Crash Helmet* – protects against impacts during vehicle crash or fall from horse

- » **Performance standard for protective shields:** Law enforcement, corrections, and firefighters are in need of a standard for protective shields to address ballistic threats and fragments/shrapnel from explosions. Tactical officers, bomb technicians, firefighters, patrol officers, and corrections officers purchase and carry hand-held ballistic shields to be used in the course of their duties. Many manufacturers claim that these shields are capable of protecting against specific firearm rounds and fragments, but there currently is no standard by which to demonstrate ballistic protection or explosives protection of shields. The standard should include testing against shots/hits to the edges, viewing port material, viewing port/shield seams, bolts that hold on the carrying handles, etc., and against multiple shots to the shield.
- » **Performance standard for explosive containment vessels:** Law enforcement, firefighters, and bomb technicians use explosive containment vessels, and a standard including performance requirements and test methods is needed to evaluate the functionality of vented and total containment (i.e., gas tight) vessels. It is not known whether publications exist regarding testing and performance of containment vessels.

Unofficial testing has been conducted by the United States Marine Corps Explosive Ordinance Disposal program using vessels manufactured by NABCO Inc. and Mistral Security Inc.; however, testing has been reliant upon the manufacturer for operational use and specifications. Development of performance requirements and test methods will require research and testing.

» **Performance standard for tactical**

operation video cameras: A performance standard is needed to assess capabilities of video cameras used by law enforcement and military officers in tactical operations for surveillance and situational understanding. These cameras are available in several configurations: covert placement, hand-deployed, pole-mounted.

- ♦ *Covert Placement:* Compact, lightweight cameras capable of being covertly placed in a high-risk situation.
- ♦ *Hand-deployed:* Compact, lightweight cameras capable of being rolled, tossed, or thrown into a high-risk situation.
- ♦ *Pole-mounted:* The camera assembly is attached to the end of a pole or extendable mast for viewing around corners, over/under barriers, or through small openings.

The camera assembly is ruggedized, may contain a fixed view or zoom camera, microphone, wireless transmission device, and internal power supply, and may have pan and tilt capability. The camera assembly transmits video and may have the ability to transmit audio to a remotely located control and viewing device.

The standard must address all system features such as image quality, audio quality, ruggedness of both the camera and monitoring device, length of operation on battery, and remote control capabilities.

- » **Standard for robot operator self-evaluation and training program:** Both public safety and military bomb squad robot operators require extensive training to establish and maintain proficiency in operation and use of robots, but currently, standardized methods of testing or evaluating

operator capabilities and providing follow-on training do not exist. ASTM International has developed a suite of robot test methods describing test environments and specific procedures for assessing robot capabilities, and it is likely that an operator assessment methodology could be added to the suite of ASTM standards.

This testing/training would use standardized apparatuses for scenario-based drills and exercises with known results as a method to “self-train” and evaluate robot operator proficiencies from the novice to the expert level. Specific standardized scenarios would have the necessary criteria (such as performance checklists, time constraints) to accurately provide comparisons with vendor expert operators during the test method standardization process and enable bomb squad commanders to identify deficient operators based on aggregate operator performance data across the squad or across the country. The test method apparatuses could then be used as repeatable practice tasks for training and additional evaluation. This set of test methods would focus on situational awareness, maneuvering tasks, terrain and obstacle negotiation, and manipulator strength, reach, and dexterity tasks with an emphasis on vehicle borne improvised explosive device applications. The ultimate objective is to encourage squads to build and use the apparatuses at their home training locations and possibly create portable test apparatuses that can be shipped to regions for special events. The intent of this standard is not to replace regular scenario training and evaluations for robot operators; the intent is to develop methods for objectively measuring the skill level of a particular operator prior to performing more realistic operational tasks.

Development of this standard training methodology will require commitment by a standards development organization and practitioners.

- The DHS S&T Office of Standards supports the development of a number of standards of interest to the IAB. These include standards for chemical and biological countermeasures, explosive

detection, biometrics, incident management and response robots. Year-end supplemental funding was requested by the DHS S&T Office of Standards and First Responder Group to support and accelerate efforts on three of the standards development requirements identified by the IAB. This is supplemental funding, and at the time this report was drafted it was not known how much, if any, funding will be available to support these efforts. The items are:

- » Test Method for Respirator Fit Test Equipment (FY12 and FY13 Tier 1 priority)
- » Compressed breathing air combination open-circuit SCBA/supplied air respirators (FY12 Tier 1 priority)
- » Robot Operator Self Evaluation/Training Program (FY12 and FY13 Tier 3 priority)
- Volunteered to participate in an NFPA technical committee to develop a standard for tactical and technical operations respiratory protection equipment to address law enforcement community needs
- Held webinar sponsored by DHS S&T in February 2013 that addressed Ambulance Interior Decontamination (FY12 Tier 2 priority)
- Reviewed the list of standard versions to keep the RKB current
- Developed and maintained relationships with responder stakeholder organizations and standards development organizations external to the IAB
- Provided information to the IAB on upcoming standards development and revision efforts via IAB Alerts
- Supported NIJ's request for work on the disinfection of body armor for NIJ
- Supported ASTM E54 Committee robot standards

CURRENT INITIATIVES

SCSG members and SMEs contribute to numerous standard development efforts supporting the responder community. The following are standards activities to which the SCSG is currently contributing:

- **ASTM International E54 Committee on Homeland Security Applications:** This committee addresses issues related to standards and guidance materials for homeland security applications with specific focus on infrastructure protection, PPE, decontamination, security controls, threat and vulnerability assessment, and CBRNE sensors and detectors. The committee has approximately 450 members, has published 43 standards, and is currently developing more than 40 new standards. Many SCSG representatives are also members of this ASTM committee and are working on standards for chemical and explosives detectors, VBIED response robots, body armor, and respiratory protective smoke escape devices.
- **ASTM International F23 Committee on Protective Clothing and Equipment:** This committee develops standard specifications, test methods, practices, guides, terminology, and classifications for protective clothing and PPE designed and constructed to protect the user from potential occupational hazards and/or provide a barrier to prevent the user from being exposed to a source of contamination. The committee has approximately 260 members and has various technical subcommittees that maintain jurisdiction over 44 published standards. These standards play a preeminent role in the protective clothing industry and address issues relating to human factors and physical, chemical, biological, flame, thermal, and radiological hazards. Of particular interest to the IAB, a new subcommittee entitled "Ballistics" was created in June 2013. This subcommittee is responsible for the creation of technical and guidance documents pertaining to armor systems and materials to encompass protection from ballistic hazards.

- **NFPA Technical Committees:** SCSG members participate on many NFPA committees, each of which addresses a specific responder need, including Respiratory Protection; Electrical Safety Equipment; Wildland Firefighting; Urban Search and Rescue; Structural and Proximity Fire Fighting; PPE; Hazardous Materials, Protective Clothing, and Equipment; Flash Fire Protective Garments; Emergency Medical Services, Protective Clothing, and Equipment; and Hazardous Materials Response Personnel.
- **NIJ:** SCSG members are participating in current initiatives by NIJ to revise their standards for ballistic-resistant and stab-resistant body armor, bomb suits, and CBRN protective ensembles, and this participation helps to ensure coordination between NIJ and the efforts of other standards development organizations.
- The National Personal Protective Technology Laboratory (NPPTL) was created as the division of the NIOSH charged with the mission of preventing disease, injury, and death for the millions of working men and women relying on PPE. NPPTL addresses the following:
 - » CBRN protection requirements for the NIOSH respirator approval process and national protective clothing standards
 - » Pandemic influenza preparedness and the equipment necessary to sustain operations in the event of an outbreak
 - » Nanotechnology and the effectiveness of equipment against nanoparticles as a program emphasis
 - » Mine emergencies and effective equipment for all mine workers
- **International Organization for Standardization (ISO) Technical Committees:** The SCSG has representation on ISO Technical Committees that develop international standards specifying requirements to ensure that certification bodies operate certification programs in a competent, consistent and impartial manner, thereby

facilitating the acceptance of certified products. These ISO standards can be used as criteria documents for accreditation or designation by governmental authorities and others.

- » ISO/IEC 17026, Conformity assessment—Model scheme for certification of manufactured products
- » ISO/IEC 17065, Conformity assessment—Requirements for bodies certifying products, processes, and services
- » ISO/IEC 17067, Conformity assessment—Fundamentals of product certification and guidelines for product certification schemes
- **International Safety Equipment Association (ISEA):** ISEA is the association for PPE, technologies, and systems that enable people to conduct work in hazardous environments, including equipment for head, eye and face, respiratory, hearing, hand and fall protection; high visibility apparel and headwear; environmental monitoring instruments; emergency eyewash and shower equipment; first aid kits, protective apparel; ergonomic protective equipment, respiratory protective escape devices and personal hydration systems. ISEA currently has 14 standards for PPE.

SUMMARY

The importance of standards for public safety operations and response to all hazards and threats cannot be overstated. The IAB is the vanguard of America's effort to rapidly develop critical standards. The SCSG, by coordinating the activities of the IAB SubGroups and harmonizing the efforts of the contributing organizations, continues to enhance the safety of responders and the security of the United States.

STATE & LOCAL CO-CHAIR

MARTIN HUTCHINGS

Reserve Deputy Sheriff, Sacramento County
(CA) Sheriff's Department

Martin Hutchings retired after 29 years as a Sergeant with the Sacramento County (CA) Sheriff's Department and continues to represent the Sheriff's Department on the IAB as a Reserve Deputy Sheriff. Mr. Hutchings was a certified bomb technician for 15 years and the Bomb Squad and Explosive Detection Canine Supervisor for his last 10 years at the department. Mr. Hutchings was elected as a founding member of the National Bomb Squad Commanders Advisory Board, and served on the board for six years. For the last five years, since retirement, he has worked part-time as an Explosive/Bomb Technician SME in support of the National Institute of Standards and Technology, Law Enforcement Standards Office. Mr. Hutchings has worked on many committees to support bomb squads including: the NIJ Law Enforcement PPE and the Bomb Technician Bomb Suit Standard Committees; National Accreditation, and Certification Committee for U.S. Bomb Squads; DHS, Science & Technology Domestic IED Subcommittee; and the DHS Explosive Standards Working Group.

FEDERAL CO-CHAIR

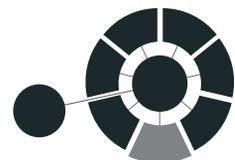
PHILIP J. MATTSON

Acting Director, Office of Standards, Acquisition
Support and Operations Analysis Group,
Science & Technology Directorate, Department
of Homeland Security,

Philip Mattson serves as the Acting Director of the Office of Standards, and Acting Standards Executive for the DHS within the Office of Standards, Acquisition Support and Operations Analysis Group, at the DHS S&T Directorate. As part of his duties, he coordinates and manages the broad portfolio of standards development projects executed through the Office of Standards. Prior to coming to DHS, he served as the Program Manager for Critical Incident Technologies at the Office of Law Enforcement Standards at the National Institute of Standards and Technology, where he managed programs to develop a suite of first responder related standards. Mr. Mattson is the federal Co-Chair of the Standards Coordination SubGroup of the IAB for Equipment Standardization and Interoperability, and is the Vice Chair of the ASTM E54 Homeland Security Applications Committee and United States Public Sector representative to the ISO Special Advisory Group for Security. He holds a bachelor's degree in Nuclear Engineering Technology from Oregon State University, and a master's degree in Physics from the Naval Postgraduate School. He has received extensive training in nuclear weapons and radiological incident management, and is a registered Professional Engineer. He is a retired Army officer, serving 20 years as a nuclear physicist and in the Corps of Engineers.

SPSG

**STRATEGIC
PLANNING
SUBGROUP**



SPSG

STRATEGIC PLANNING SUBGROUP

SPSG



STATE & LOCAL CO-CHAIR

JEFF DULIN

Charlotte (NC) Fire Department



FEDERAL CO-CHAIR

ROBERT JOHNS

*Department of Homeland Security,
Domestic Nuclear Detection Office*

ROLES AND FUNCTIONS

- Inform policymakers about emergency responders' operational concerns.
- Identify and interpret emerging policy, doctrine, or practice issues and coordinate IAB response.
- Monitor diverse strategic national initiatives for integration and coordination, and identify gaps and conflicts, focusing on the interagency/multidisciplinary response to major incidents.
- Develop and maintain a prioritized list of organizations and initiatives of interest/influence to the IAB, and develop an engagement plan.
- Coordinate overarching strategic initiatives that impact multiple SubGroups of the IAB.
- Coordinate ad-hoc special project teams as directed by the Leadership Team.



The mission of the Strategic Planning SubGroup (SPSG) is to identify, monitor, evaluate, and coordinate IAB feedback on strategic national plans, programs, and policy/doctrinal initiatives that affect the emergency responder community.

Photo Courtesy of Upper Merion Township (PA) Police Department

- Facilitate external communications and outreach as directed by the Leadership Team.

ONGOING PROJECTS

- Coordinate IAB feedback to the National Security Staff on interagency policy development and review.
- Identify existing and future plans, policies, and doctrinal initiatives that would benefit from IAB input.
- Build relationships with associated emergency services policymakers and organizations.

FY13 PROJECTS AND ACCOMPLISHMENTS

- Provided stakeholder feedback to the Presidential Policy Directive-8 (PPD-8) implementation plan

through interactive briefings from the Federal Emergency Management Agency (FEMA) PPD-8 Program Executive Office.

<http://www.fema.gov/ppd8>

- Supported DHS strategic planning efforts, primarily through workshop and focus group participation in the FEMA Strategic Foresight Initiative (SFI).
<http://www.fema.gov/strategic-planning-analysis-spa-division/strategic-foresight-initiative>
- Supported the review and interagency coordination of risk assessment policy, including review of the Emergency Services Self Assessment Tool prototype developed by the DHS Office of Infrastructure Protection—Emergency Service Sector.
<http://www.dhs.gov/emergency-services-sector>

MEMBERSHIP

AMY DONAHUE

University of Connecticut

CHERYL GAUTHIER

*Massachusetts Department of Public Health,
Bioterrorism Response Laboratory*

JOHN GIBB

Salem (NY) Volunteer Fire Department

ROBERT INGRAM

City of New York (NY) Fire Department

JOHN KOERNER

*Department of Health and Human Services, Office
of the Assistant Secretary for Preparedness and
Response, Office of Preparedness and Emergency
Operations*

CAROLYN LEVERING

Las Vegas (NV) Office of Emergency Management

RAYMOND MOLLERS

*Department of Homeland Security, Office of Health
Affairs, Medical First Responder Coordination Branch*

MICHAEL SANFORD

Seattle (WA) Police Department

JAMES SCHWARTZ

Arlington County (VA) Fire Department

THOMAS SHARKEY

*Metro Transit Police Department, National Bomb
Squad Commanders Advisory Board*

A.D. VICKERY

Seattle (WA) Fire Department

SUBJECT MATTER EXPERTS

MICHAEL BIASOTTI

New Windsor (NY) Police Department

ARTURO MENDEZ

*New York City (NY) Police Department,
Counterterrorism Bureau*

JEFF STERN

*Louisiana State University, Stephenson Disaster
Management Institute*

JODY TOMAN

Chicago (IL) Fire Department

ROBERT TUOHY

Homeland Security Studies and Analysis Institute

ERIK WOZNIAK

*Department of Homeland Security, Federal Emergency
Management Agency, Office of Policy and Program
Analysis*

- Promoted DOD Homeland Defense (HLD) and Defense Support to Civil Authorities (DSCA) policy integration with civilian stakeholders by engaging with NGB representatives on Homeland Response Force (HRF) and CBRNE Response Force Package (CERFP) organization and doctrine.
<http://www.nationalguard.mil/features/HomelandDefense/index.html>
- Engaged with FEMA Response Directorate–CBRNE Branch on the need for national doctrine to guide public safety response to improvised nuclear device (IND) response.
- Initiated IAB support for the Joint Counter Terrorism Workshop Series (JCTAWS)—a FEMA, National Counterterrorism Center (NCTC) and FBI project to disseminate lessons learned from complex coordinated (Mumbai-style) attacks.
- Participated in Project Responder 4—a DHS S&T initiative to determine the future technological needs of emergency responders.
<http://firstresponder.gov/Miscellaneous%20PDFs/ProjectResponder3Report.pdf>
- Participated in the Homeland Security Institute's study for DHS on Radiation, Nuclear Response and Recovery.
- Developed strategic documents for the IAB Leadership Team that address current and future issues of concern to the IAB membership.

STATE & LOCAL CO-CHAIR

JEFF DULIN

Deputy Fire Chief, Charlotte (NC) Fire Department

Jeff Dulin joined the Charlotte Fire Department in 1983 and has held the rank of Deputy Chief since 2001. He currently oversees the Training Division, Communications Center, EMS Liaison, Special Operations and the Emergency Management/Homeland Security Division for Charlotte and Mecklenburg County. Deputy Chief Dulin serves as the Point of Contact for the Charlotte Urban Area Security Initiative. He has deployed to federal disasters as an Incident Management Team member including a four-week deployment to Gulfport, Mississippi following Hurricane Katrina, where he worked in the Emergency Operations Center. Deputy Chief Dulin's educational background includes an associate's degree in Fire Science from Central Piedmont Community College, a bachelor's degree in Fire Administration from the University of Maryland, and a master's in Homeland Security from the Naval Postgraduate School. He has taught Incident Command Systems for over 29 years and is certified in all Incident Management Team positions. For the last 7 years, he has worked with the United Kingdom's Chief Fire Officers Association in developing the UK National Disaster Response Program. One of Deputy Chief Dulin's initiatives in Charlotte and the State of North Carolina centers on the need for information sharing systems needed for common operating pictures among agencies. Jeff most recently served on the 2012 Democratic National Committee's Executive Steering Committee and was the Deputy Operations Chief for the entire event.

FEDERAL CO-CHAIR

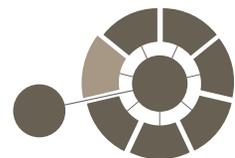
ROBERT JOHNS

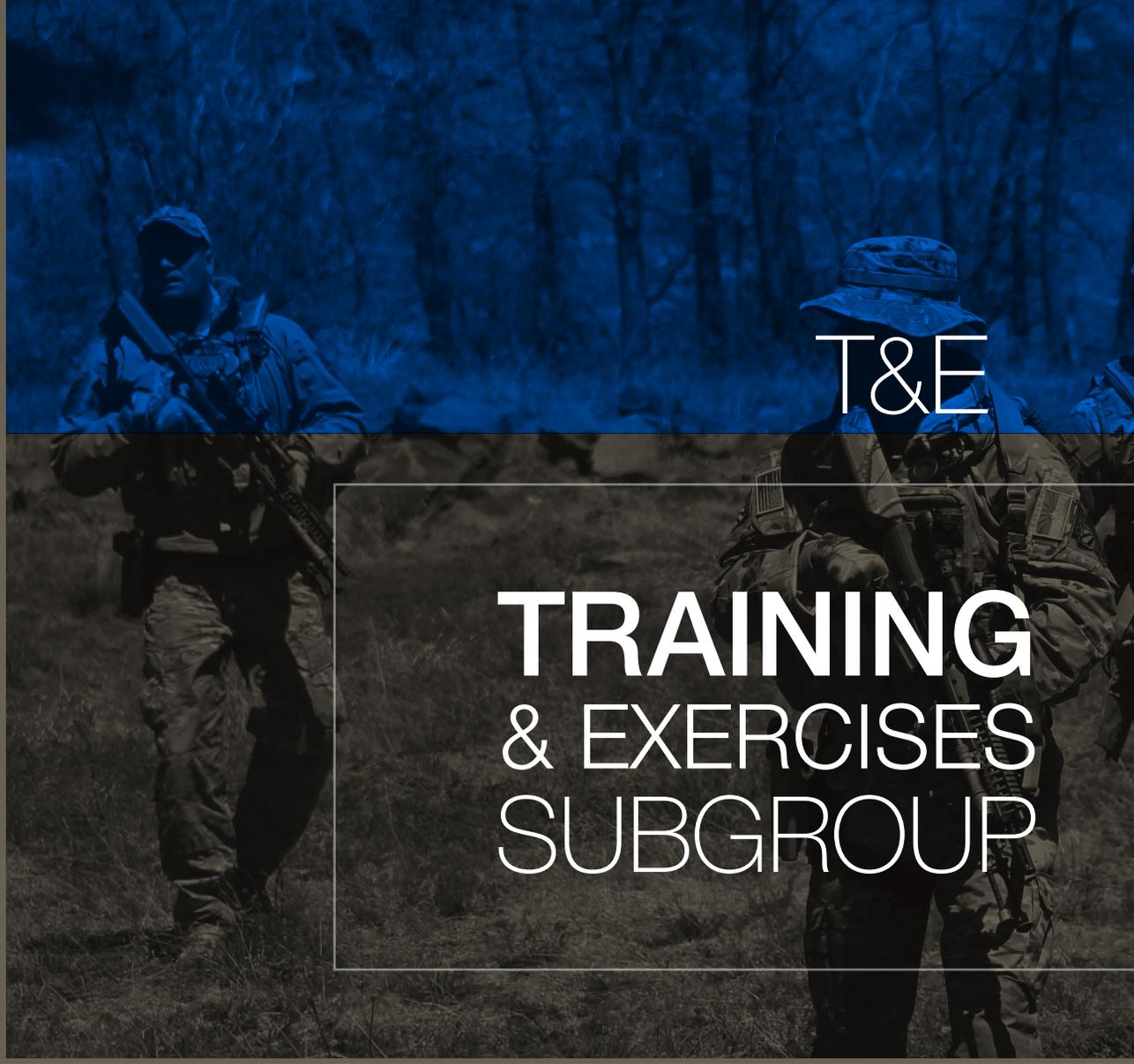
Branch Chief, Domestic Nuclear Detection Office, Department of Homeland Security

Bob Johns serves as a Branch Chief in the DNDO, U.S. DHS. This branch is responsible for policy and program planning for aviation programs, focused on enhancing preventive rad/nuc detection and other related security capabilities in domestic and international environments. He previously served in the Office for Domestic Preparedness (ODP), DHS, where he was the Director of the Western Division within the Preparedness Programs Division. His division at ODP administered billions of dollars of funding and other direct support programs for homeland security related planning, equipment, training, and exercise activities. Mr. Johns started his service with ODP in 1999, when the Office was located within the Department of Justice (DOJ). Prior to ODP, he served with DOJ's Community Oriented Policing Services Office as a Policy Analyst, and DOJ's Civil Division as a member of the Radiation Exposure Compensation Program. He has served with the Federal Government since 1993. He received an MPA in 1997 from Virginia Tech and a B.A. in 1992 from Mary Washington College.

T&E

**TRAINING
& EXERCISES
SUBGROUP**





T&E

TRAINING & EXERCISES SUBGROUP



STATE & LOCAL CO-CHAIR

GREGORY G. NOLL, CSP, CEM
South Central (PA) Task Force



FEDERAL CO-CHAIR

WAYNE E. YODER, CHMM
Department of Homeland Security, Federal Emergency Management Agency, U.S. Fire Administration, National Fire Academy

ROLES AND FUNCTIONS

- Serve as an advocate for the emergency preparedness community to identify performance improvement needs or requirements related to DHS/FEMA Emergency Support Functions that could be addressed through the application and use of T&E initiatives.
- Provide subject matter expertise to support the development of T&E programs.
- Advocate for standardized national guidance for responder and equipment T&E programs.
- Collaborate with stakeholders to provide end-user guidance and operational lessons learned to support T&E program development and improvements.
- Facilitate implementing T&E programs and standards that support the development and



The mission of the Training and Exercises (T&E) SubGroup is to improve responder mission performance by conducting a cross-disciplinary review of, and providing end user input on, training and exercise doctrine, standards, and guidance developed specifically for the responder community.

Photo Courtesy of Arizona DPS State Police

assessment of individual competencies and organizational capabilities.

MEMBERSHIP

The T&E SubGroup consists of representatives from local, state, and federal responder agencies and institutions engaged in responder T&E development and delivery. A goal of the SubGroup is to engage all of the response disciplines, as defined by the DHS FEMA National Preparedness Directorate. The T&E SubGroup also draws upon a wide range of SMEs, both within and outside the IAB.

INITIATIVES AND PROGRESS

The IAB membership and federal partners recognize that, in addition to the core mission of recommending appropriate responder equipment and technical

performance standards for their equipment, a crucial need exists for guidance on the training required to effectively and safely use the equipment. The basis for this guidance is to enhance preparedness capabilities and to improve responder workplace and mission performance/safety.

The following initiatives were addressed by the T&E SubGroup in FY 2013:

- Advocated for the development of a recommended practice for equipment training, which was a key element of the best practices white paper previously developed in cooperation with the Equipment SubGroup. The Standards Coordination SubGroup included this item in the annual standards survey and is working to bring it to the attention of the appropriate Standards Development Organizations (e.g., ASTM,



MEMBERSHIP**ARMANDO BEVELACQUA**

Lake County (FL) Fire Academy

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Cecil County (MD) Department of Emergency Services

TERRY CLOONAN

National Institute for Occupational Safety and Health, National Personal Protective Technology Laboratory

EDWARD DADOSKY

Cincinnati (OH) Fire Department

TRACY FRAZZANO

Montclair (NJ) Police Department

BENJAMIN HAMILTON

Technical Support Working Group, Combating Terrorism Technical Support Office

KAREN HECKMANN

Occupational Safety and Health Administration

JOHN INCONTRO

Los Angeles (CA) Police Department, Emergency Services Division

CARL MAKINS, JR.

Charleston County (SC) Sheriff's Office

CAROL MINTZ

Department of Homeland Security, Federal Emergency Management Agency, National Preparedness Directorate

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BRIAN WHITE

Federal Bureau of Investigation, Technical Hazards Response Unit

SUBJECT MATTER EXPERTS**BARBARA BIEHN**

CTK Consulting

THOMAS BRANDON

Department of Homeland Security, Domestic Nuclear Detection Office

PAM L'HEUREUX

York County (ME) Emergency Management

JOEL LESON

International Association of Chiefs of Police

TONY MUSSORFITI

City of New York (NY) Fire Department (Retired)

JAMES REMINGTON

National Institute of Health, National Institute of Environment Health Services

EUGENE RYAN

Cook County (IL) Department of Homeland Security & Emergency Management

JOHN WILSON

44th Civil Support Team, Florida National Guard

NFPA) to determine their willingness to develop such a standard. The best practice document provides guidelines for the evaluation of manufacturer- and vendor-provided training to ensure that it will effectively meet user needs, and is intended to assist purchasers in becoming educated consumers of manufacturer and vendor provided training for equipment acquired from the AEL/SEL. The white paper is available on both the IAB website (www.iab.gov) and the RKB.

- Developed the first phase of a web-based tool to assist response organizations in the selection of models, simulations, and simulators. The phase one tool consists of three questions for potential purchasers, and helps the user determine whether their needs are better suited to a model, simulation, or simulator solution. The tool also provides the definition and characteristics of each technology. Once the user chooses one or multiple technologies, the user sees a list of pros and cons of the technology and provides links to current examples of that technology. The tool also offers the purchaser a list of questions to ask potential vendors applicable to the selected technology to assist the purchasing agency in determining whether a particular product meets its training and operational requirements. This web-based tool is available on the IAB website (www.iab.gov) in the IAB documents section.
- Categorized and updated training requirements for equipment included in the SEL to assist in equipment procurement by providing guidelines on operator proficiency.
- Identified the training required (federal, state, local, and tribal) to successfully tie performance of tasks to overall capability development and sustainment.
- For each SEL item, maintained, and updated the core training required to operate the equipment and also



categorized each item as having minimal, moderate, or extensive training requirements, for initial and sustainment training. This enables responders to consider total cost of ownership for equipment items by highlighting initial and sustainment training requirements in addition to procurement costs. The following definitions are used to indicate training requirements for each item:

- » **Core training** is defined as the fundamental baseline knowledge, skills, and abilities required for mission specific assignments. For example, an Emergency Medical Technician—Intermediate or Law Enforcement Patrol Officer.
- » **Initial training** is defined as the training required for a responder competent in a specialization to achieve competency-based knowledge, skills, and abilities beyond day-to-day duties. Initial training requirements for SEL items are presented as minimal (<1 day), moderate (1–2 days), or extensive (>2 days). For example, competency-based training reflects the use of:
 - ◆ New detection equipment by a certified HazMat technician; or
 - ◆ Specialized personal protective clothing and PPE employed by Special Weapons and Tactics (SWAT) officers, Explosive Ordnance Disposal (EOD) teams, or Crime Scene Technicians.
- » **Sustainment training** is defined as training required to maintain competency-based knowledge, skills, and abilities. Sustainment training requirements for SEL items are presented as minimal (<1 day), moderate (1–2 days), or extensive (>2 days).
- Provided input to the SCSG on developing, adopting, and implementing appropriate and relevant training standards.
- Provided input to the NGB – Combating Weapons of Mass Destruction and the Training and Education Joint Staff Directorate. Provided SME guidance for the development of NGB training and education standards for military members assigned to staff the NGB CBRN Response Enterprise (CRE), consisting of 10 HRFs with 566 personnel each, 17CERFPs with 186 personnel each, and 57 WMD CSTs with 57 personnel each. T&E deliverables included recommendations for educational courseware and constructs and the development of a matrix of NFPA 472 mission-specific competencies for HRFs, CERFPs and WMD CST elements of the CRE.
- Conducted a HazMat training gap analysis for standardized bio-sampling training programs and developed a draft white paper with recommendations on a path forward. This analysis is based on the results of three T&E surveys developed to identify gaps in current HazMat training with respect to responding to a potential bio-threat scenario. The surveys address the concerns of the state public health laboratories in the Laboratory Response Network (LRN), as well as law enforcement and hazardous materials response teams.
- Developed, implemented, and analyzed results of a training survey on initial and sustainment hazardous materials response training provided by the Fire Service. A white paper relating the relevant outcomes is in development.

ONGOING COMMITMENTS

- Continue to be a national, interdisciplinary sounding board for T&E needs, doctrines, and programs. This task is essential in focusing funds and resources on relevant, operationally sound T&E programs.
- Provide input on developing, adopting, and implementing appropriate and relevant T&E standards and requirements for the response community.
- Enhance responder safety by sustaining marketing and information programs pertaining to developing, implementing, and sustaining respiratory protection programs and PPE use requirements.
- Explore opportunities to improve the delivery of equipment-specific training through recommended instructional design measures.
- Identify critical performance-based T&E needs by engaging the response community.



- Support the emergency preparedness community in developing training standards, with an emphasis on matching training requirements to responder equipment.
- Review and provide input to improve the operational applicability of T&E doctrine and programs that impact the emergency preparedness community.
- Promote instructional systems design-based models, such as analysis, design, development, implementation, and evaluation (ADDIE) for T&E.
- Participate on the governance board for the DHS Science and Technology First Responder Group Virtual Training Simulation Program and Pilot, and provide input regarding program development.
- Coordinate with the respective IAB SubGroups to identify in each equipment category the minimal, moderate, or extensive training requirements based on initial and sustainment training required to operate the equipment.

PRIORITIES FOR FY 2014

- Provide input into the development of training and lessons learned support materials related to the Operation Jack Rabbit catastrophic release project in support of the TSA and the TSWG.
- Analyze the process and trigger points by which incident/exercise lessons learned and after action reports (AAR) can be leveraged to better identify training gaps, and more effectively impact future training programs. This includes establishing relationships with Department of Defense and both public- and private-sector initiatives already existing in this area.
- Continue developing and refining the modeling, simulations, and simulators e-tool. In phase two, the tool will provide users with example scenarios and/or tasks from which they choose, which link to the most appropriately related technology. In phase three, the tool will allow vendors to enter information on their particular technology solution(s) based on the questions previously developed for purchasers to ask. Purchasers will also be able to rate how a technology solution worked in their particular situation. Finally, this stage will also include some rough order of magnitude costing information.



- Assist FEMA in broadening the reach of their Joint Counter Terrorism Awareness Workshop (JCTAWS) series.
- Participate in the development of the Law Enforcement PPE Standards and Training process, as requested by the National Institute of Justice.
- Address the requirements of the FACC as they relate to the T&E mission.
- Develop a method to gather emerging T&E needs from the broader response community, including reviewing Naval Postgraduate School Center for Homeland Security and Defense thesis topics.

FUTURE INITIATIVES

The process of providing advice on relevant and successful responder-focused T&E programs is ongoing, driven by threat, capability, technology, and personnel. The T&E SubGroup will identify and prioritize T&E requirements based on these factors.

The T&E SubGroup will work closely with all other IAB SubGroups to identify standards where they exist and identify their application to individual competency-based and organizational capability-based training. Where standards do not exist, the SubGroup will advocate, through the IAB, for their establishment.

SUMMARY

The T&E SubGroup strongly recommends that any emergency responder equipment purchased include the identification of initial and sustainment requirements for competency-based training on the application, operation, care and maintenance of the equipment.

The IAB T&E SubGroup recommends that organizations purchasing or developing training require that it adhere to the principles of instructional systems design and best practices for adult learning, such as those demonstrated in the Responder Training Development Center (RTDC), which can be accessed by visiting <https://www.firstrespondertraining.gov/rtdc/state/>.

The IAB T&E SubGroup endorses the exercise policy, methodology, and terminology as cited in the Homeland Security Exercise and Evaluation Program (HSEEP).

Exercises serve to validate plans and training, and as such, are a critical component in the cycle of preparedness.

STATE & LOCAL CO-CHAIR

GREGORY G. NOLL, CSP, CEM

Program Manager, South Central (PA)
Task Force

Greg Noll is the Program Manager for the South Central (PA) Regional Task Force, one of nine regional task forces established throughout Pennsylvania, as well as the Chairperson for the NFPA Technical Committee on Hazardous Materials/WMD Emergency Response. A retired member of the U.S. Air Force Reserve with 29 years of service, Mr. Noll has served as an SME for various DOD hazardous materials and counter terrorism response training programs.

Mr. Noll has 42 years of experience in the fire service and emergency response community, and is the co-author of nine textbooks on hazardous materials emergency response and management topics. In 2010, he received the William Patterson Lifetime Achievement Award from the California hazardous materials emergency response community for his significant contributions to the hazardous materials emergency response and training communities, and in 2011 was the recipient of the John M. Eversole Lifetime Achievement Award by the International Association of Fire Chiefs (IAFC), for his leadership and contributions to further and enhance the hazardous materials emergency response profession.

FEDERAL CO-CHAIR

WAYNE E. YODER, CHMM

Training Specialist, National Fire Academy,
U.S. Fire Administration, Federal Emergency
Management Agency, Department of Homeland
Security

Wayne Yoder is the Hazardous Materials Program Manager and Training Specialist for the U.S. Fire Administration's National Fire Academy, where he is responsible for curriculum management and technical assistance, and serves as the resident SME for the program area. Mr. Yoder retired from the Delray Beach (FL) Fire Department after 21 years of service as a firefighter/EMT-I/Hazardous Materials Technician, Company Officer, and Special Operations Coordinator. He has more than 30 years in fire and emergency services, with more than 25 years in hazardous materials and WMD response, management, training, and planning at the local, regional, state, and federal levels. Mr. Yoder has extensive experience in developing and delivering training systems and programs for hazardous materials and WMD responders and managers at all levels, for both the public and private sectors. He is also a member of the National Fire Protection Association (NFPA) Hazardous Materials Response Personnel Technical Committee, and the American Society for Testing and Materials (ASTM) E54 Homeland Security Applications Technical Committee. Mr. Yoder is currently credentialed as a Certified Hazardous Material Manager by the Institute of Hazardous Materials Management.



SEL SUMMARY

FOREWORD

The **Standardized Equipment List (SEL)** is provided to the responder community by the IAB for Equipment Standardization and Interoperability. The SEL has traditionally contained a list of generic equipment recommended by the IAB to local, tribal, state, and federal government organizations in preparing for and responding to all Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) events. This edition continues the transition to a broader “all-hazards” SEL, *while maintaining an emphasis on CBRNE events*.

The SEL is a guideline, and its use is voluntary. The SEL promotes interoperability and standardization across the response community by offering a standard reference and a common set of terminology. The IAB does not assume any liability for the performance of equipment items mentioned in the SEL.

The most current SEL is distributed each year on CD-ROM in conjunction with the IAB Annual Report. This annual edition is always preceded by a complete review of the SEL, and thus contains numerous changes and updates. However, the SEL master is maintained online in order to keep pace with maturing and emerging technologies. It is available in interactive format on the IAB website, www.iab.gov. The SEL is updated online as required, and each online record includes the date and time of its most recent change. Local, tribal, state, or federal government organizations may present suggested changes at any time for consideration.

ALIGNMENT WITH THE DHS AUTHORIZED EQUIPMENT LIST

The numbering scheme and structure of the SEL are aligned with the Authorized Equipment List (AEL) produced by DHS. Originally a subset of the SEL, the AEL is the equipment purchase grant guidance for several major grant programs, including the entire DHS Homeland Security Grant Program (HSGP). It is currently maintained by the FEMA Grant Programs Directorate (GPD) of DHS. The SEL/AEL alignment is the result of a multi-year effort undertaken so that the responder community could easily obtain grant allowability information from DHS alongside the features and operating consideration information contained in the SEL.

THE SEL AND AEL EACH CONTAIN 21 SECTIONS, AS FOLLOWS:

-
1. **Personal Protective Equipment**

 2. **Explosive Device Mitigation and Remediation Equipment**

 3. **CBRNE Operational and Search and Rescue Equipment**

 4. **Information Technology**

 5. **Cyber Security Enhancement Equipment**

 6. **Interoperable Communications Equipment**

 7. **Detection**

 8. **Decontamination**

 9. **Medical**

 10. **Power**

 11. **CBRNE Reference Materials**

 12. **CBRNE Incident Response Vehicles**

 13. **Terrorism Incident Prevention Equipment**

 14. **Physical Security Enhancement Equipment**

SEL SUMMARY

Photo Courtesy of www.navy.mil

- 15. Inspection and Screening Systems
- 16. Animals and Plants
- 17. CBRNE Prevention and Response Watercraft
- 18. CBRNE Aviation Equipment
- 19. CBRNE Logistical Support Equipment
- 20. Intervention Equipment
- 21. Other Authorized Equipment

SEL/AEL NUMBERING SCHEME

The SEL and the DHS AEL both utilize the numbering scheme originally introduced in the 2003 SEL. The format for SEL/AEL numbers is 99xx-88-yyyy, where

- 99 is the section number, from 01 through 99 (currently 01 through 21 are used as shown above).
- xx is the category. It is alphanumeric and unique within its section. For example, within Personal Protective Equipment (PPE), all items associated with the NFPA 1994 standard will have the category “CB”.
- 88 is the numeric subcategory. For example, within the PPE Section, the NFPA 1994 Class 2 Ensemble has a subgroup code of “02”. This code may be set to “00” when not required.
- yyyy is the item identifier. It is alphanumeric and unique within its section, class, and group. Using an alphanumeric code at this level increases flexibility, and decreases the chance of human error. For example, the Hard Hat in the PPE section uses the item identifier “HHAT.”

IAB EQUIPMENT SUBGROUP

The IAB’s Equipment SubGroup (ESG) has sole responsibility for the maintenance and publication of the SEL. The ESG is the largest working group within the IAB, and draws subject matter expertise from across the IAB to support its mission of maintaining the SEL. While the ESG has multiple missions and priorities as described in the Annual Report, its highest priority is continuing the SEL.

2013 CHANGES

The 2013 SEL includes 723 items, 104 of which have been changed or added in this edition. The only “deletion” in this edition was a pharmaceutical item deemed less effective due to influenza resistance patterns.

Thirty eight new items were added, 34 of which were in a new Section 16 (Animals and Plants) category developed jointly with FEMA. The new category is 16AD (Foreign Animal Disease), and contains a wide range of equipment for disease investigation, identification, tracking, treatment, depopulation, and disposal. A new Section 19 (Logistics) category was also added. Category 19FD (Food and Food Preparation) contains three new items: individual rations, group rations, and water. Further development of this category is planned in 2014. Finally, a new item was added in Category 02EX (Explosive Device Mitigation and Remediation Equipment). The new item includes energetic materials (explosives) for bomb squad training, and was inserted to align the SEL with a newly-approved FEMA Grant Policy that makes such materials purchasable for training of accredited bomb squads.

The net increase for 2013 is 37 items. The 66 changes to existing items occurred mostly in the Personal Protective Equipment and Medical Sections. While a few changes were made to titles and descriptions, most updates were in the features and operating considerations. The impact by section is summarized in the following table:

2013 SEL Section Impact Summary			
Section Title	Changes	Additions	Deletions
1. Personal Protective Equipment	35		
2. Explosive Device Mitigation and Remediation Equipment	3	1	
3. Operational and Search and Rescue Equipment	3		
4. Information Technology	1		
5. Cyber Security Enhancement Equipment	1		
6. Interoperable Communications Equipment			
7. Detection	2		
8. Decontamination			
9. Medical	18		1
10. Power			
11. CBRNE Reference Materials	3		
12. CBRNE Incident Response Vehicles			
13. Terrorism Incident Prevention Equipment			
14. Physical Security Enhancement Equipment			
15. Inspection and Screening Systems			
16. Animals and Plants		34	
17. CBRNE Prevention and Response Watercraft			
18. CBRNE Aviation Equipment			
19. CBRNE Logistical Support Equipment		3	
20. Intervention Equipment			
21. Other Authorized Equipment			

TRAINING REQUIREMENTS

The inclusion of **Training Requirements** for each SEL item began in the 2008 Edition. These requirements were developed by the Training SubGroup in cooperation with each of the four SubGroups responsible for SEL content, and have been updated in this edition. Each item contains training requirement information in three parts:

- **Core Training** requirements, which describe the fundamental baseline training (as opposed to product specific training) required for operation, usually by reference to one or more key documents (such as a standard containing minimum qualifications) or certifications (such as a diver's certificate).
- **Initial Training** requirements, which quantify the amount of training needed to utilize the specific piece of equipment, presented as Minimal (< 1 day), Moderate (1-2 days), or Extensive (>2 days).
- **Sustainment Training** requirements, which quantify the amount of annual recurrent training needed to maintain proficiency in using the specific piece of equipment. Again, the requirement is presented as Minimal (< 1 day), Moderate (1-2 days), or Extensive (>2 days).

In some cases, additional information is supplied. For example, some bomb squad items show Sustainment Training as "Extensive (>2 days) with 3-yr recertification reqt" to remind users of the 3-year recertification requirement for FBI-accredited bomb squad members.

SELECTION FACTORS AND MISSION-SPECIFIC SUBLISTS

Early editions of the SEL included "selection factors" to provide an alternate method of referencing SEL items. This concept has evolved into a set of MSSLS, and provide an easy way to examine the IAB's recommendations for a specific mission area such as a dive team.

This edition adds three new Mission Specific SubLists. Development and updates will continue in 2014. Current SubLists include:

Law Enforcement: Aviation

Law Enforcement: Bomb Squad

Law Enforcement: Dive Team

Law Enforcement: Forensics Technician

Law Enforcement: K9*

Law Enforcement: Mobile Field Force

Law Enforcement: SWAT/Tactical Team

Mass Care / Shelter

Medical: Advanced Life Support

Medical: Basic Life Support

Medical: Disaster Stockpile

Medical: Hospital

Medical: Point of Dispensing

Medical: Pre-Hospital

Medical: Public Health

Medical: Tactical Emergency Casualty Care*

Mortuary Operations

National Guard: HRF Search and Extraction*

REL: Full Canadian Recommended Equipment List

REL: LOS-1, Multi-Agency Intervention

REL: LOS-2, Scout/Reconnaissance Mission

REL: LOS-3, Suspicious Powder Response

REL: LOS-4, Evac and Perimeter Control

REL: LOS-5, Emergency Washdown

*New for 2013

ELIMINATION OF PRINTED SEL IN FAVOR OF CD-ROM

Since adding features and operating considerations information in 2004, the printed version of the SEL expanded steadily. As a result, the 2008 edition became the first to “streamline” the printed SEL to include only the SEL Number, Title, and Description of each item. With both size and costs increasing, the 2011 edition took the next logical step: rather than lay out and print a partial list, the entire SEL was stored on the CD-ROM located inside the back cover of the Annual Report document. This strategy continues with the inclusion of a 2013 SEL CD-ROM in this report. *It contains both PDF versions of the printed document and a complete interactive version of the SEL.* The SEL on the CD-ROM is formatted identically to the online SEL, contains complete information on every item, and is viewable offline on virtually any computer using a Web browser.

ONLINE SEL

The master, interactive version of the 2013 SEL is accessible online at the IAB website (www.iab.gov). As mentioned above, this version of the SEL will always contain the latest updates. The IAB site also allows users to download the IAB Annual Report in PDF format.

SUMMARY

The 2013 SEL represents the collective efforts of the InterAgency Board members and several related support organizations to provide recommendations for response to emergencies, disasters, and CBRNE incidents. Like all previous versions, it is intended to provide the best possible information in support of all emergency responders. Suggestions and comments are welcome.



IAB

APPENDIX



This R&D survey was vetted through the IAB membership. The research and development items were assessed based on the following criteria: urgent need, life safety, mission performance, incident management, compatibility or interoperability, use by multiple responder disciplines, and use in day-to-day operations as well as major incidents.

To learn more about the IAB and the surveys, please visit www.iab.gov.

1. ENHANCE COMMUNICATIONS IN ENVIRONMENTS THAT INTERFERE WITH RADIO TRANSMISSIONS

Portable network extension of current radio capabilities into areas where coverage is prohibited by environment/terrain (e.g. tunnels, canyons, large structures, ships etc.).

2. 3-D TRACKING OF PERSONNEL

Continued technology development for tracking operating personnel in a 3-D environment until these systems are fielded.

3. HANDHELD STANDOFF CHEMICAL AND EXPLOSIVE IDENTIFIER

Instrument capable of detecting and identifying chemical substances (e.g., CWAs and TICs) and explosives from outside the exposure or contamination zone, at standoff distances. This item must be intrinsically safe, able to withstand temperature and humidity changes, and must be ruggedized for field use.

4. NOISE-FILTERING DIGITAL SPEAKER/MICROPHONE FOR SCBA FACEPIECE

Digital radio needs to clearly transmit spoken audio while a responder is wearing an SCBA facepiece. Breathing sounds and any other competing background noise must be eliminated from the radio's transmission.

5. HANDS-FREE RADIO INTERCOM

Portable radio/accessory combination that allows for hands-free, intercom style communications via portable radios amongst a small group of persons in close proximity to each other ($\leq 30'$), simultaneous ability to listen to a command channel, and the ability to talk on the command channel when keying a microphone.

6. FIELD DETECTION/ANALYSIS DEVICES FOR FIRE GASES & PARTICULATES

Hand-held or "man portable" device that will detect and quantify levels of toxic gases, vapors, and particulates commonly found in the post-fire environment.

7. VEHICLE-BORNE IMPROVISED EXPLOSIVE DEVICE (VBIED) RENDER SAFE TOOL

A method for and equipment that will effectively and quickly enter/examine/diagnose/render safe a potential vehicle borne improvised explosive device

8. DEVELOP MODEL PROCEDURES AND/OR LESSONS LEARNED FROM FIRST RESPONDERS TO ATYPICAL EMERGENCIES

Integrated police, fire, and EMS responses will be necessary to mitigate more and more emergencies. Capturing lessons learned will be critical for future development of this capability.

2013 IAB R&D

PRIORITY LIST & DESCRIPTIONS

9. SMART RESPONSE VEHICLES

Development of smart emergency response vehicles and systems that use a networked approach to safely respond to emergencies.

10. PUBLIC SAFETY SECURE VOICE COMMUNICATIONS

The need to use encryption to protect sensitive radio communications that can easily be interpreted with commercial, off-the-shelf radio scanner equipment.

11. NATIONAL VIRTUAL COMMAND AND CONTROL INTERFACE TOOL

A single location that integrates the various command and control systems to grant the sharing of information to allow them to make informed decisions.

12. COMPREHENSIVE NATIONAL LIBRARY THAT TRACKS FIRST RESPONDER R&D PROJECTS

An extensive database that would identify the institution, program, university, or private industry to allow for better coordination and decreasing duplication amongst parties

13. PROACTIVE TRAINING RESOURCE (PTR) INITIATIVE

A compendium or resource that accepts all types of ER reports (AAR, lessons learned, IPs, threats, etc.), identifies training strengths and

challenges, generates a PTR that identifies trends and facilitates targeted guidance, training, or protocols.

14. NATIONAL PATIENT TRACKING SYSTEM

A single National Patient Tracking System that is scalable from small to large incidents and can cross jurisdictional boundaries. System should be scaled across local, state, and federal agencies to allow for sharing.

15. CONOPS ANALYSIS FOR ROBOTIC APPLICATIONS WITHIN THE FIRE SERVICE

This analysis would be used to guide funding for development of fire service oriented robotics technologies as they are deemed necessary/possible.

16. MODELING, SIMULATION, & SIMULATOR SOFTWARE EVALUATION TOOL

Software tool that allows users to search for a model, simulation, or simulator appropriate for their particular requirement and receive recommendations based on the criteria developed, the user's constraints, and ranking of importance.

17. INCIDENT STRESS MANAGEMENT SYSTEM

Vetted system for incident stress management and stress surveillance for use following incidents.

18. FIRST RESPONDER APPLICATION STORE

A single place for all first responder applications for mobile devices. This location could be managed by a federal agency and updated as new applications are developed, to allow for easy access by first responders.

19. FIRE RESOURCE DEPLOYMENT MODELING TOOL

A common modeling program to help identify the deployment of resources for day-to-day operations and for disaster operations. This model could be run to identify gaps in coverage based on predicted scenarios or from historical data.

20. IMPROVED GOOD SAMARITAN LAW AT FEDERAL LEVEL AND RELATED PSAS

Research existing Good Samaritan laws, which are all state specific, and craft a law at the federal level covering Good Samaritan activity.



TIER 1

- Standard for public safety bomb suits additional requirements
- Standardized equipment training program format
- Standard test method for respirator fit test equipment

TIER 2

- Performance standard for protective helmets
- Performance standard for protective shields
- Performance standard for explosive containment vessels: vented and total containment

TIER 3

- Performance standard for tactical operation video cameras
- Standard for robot operator self-evaluation and training program

TIER 1

Standard for public safety bomb suits additional requirements

The scope of this requirement is to develop performance requirements and test methods to be added to the current version of NIJ Standard-0117, Public Safety Bomb Suit Standard, to address the following:

- Blast overpressure protection. The effects of blast overpressure on the human body need to be taken into account to address impact to the head, neck, thorax, abdomen, and ears.
- Integration of chemical/biological protection, including respirator face piece and helmet interface. Bomb technicians currently have to wear a chemical/biological protective ensemble in addition to a bomb suit to have both types of protection at once.

Development of performance requirements and test methods will require research and testing.

Standardized equipment training program format

Standardized equipment training program format is needed to provide equipment manufacturers and vendors with guidance for developing training courses, instructions, and materials for end users of the respective equipment. This standard should be based on technical equipment requiring a specialist to technician level of skill rather than common equipment (e.g., consumables, batteries, and simple hand tools).

Standard test method for respirator fit test equipment

There is a concern among responders who wear respiratory protection that current test methods for mask fit machines are not sufficient. For example, with current mask fit machines, a mask could pass the fit test when it should have failed due to such things as turning the head or an inconsistent interface between the mask and the machine.

TIER 2

Performance standard for protective helmets

Many types of head protection are used by law enforcement and corrections officers, and a comprehensive standard addressing all types of protection is needed:

- Ballistic Helmet: intended to protect against rifle and handgun rounds.
- Riot Helmet: intended to protect against hand-delivered improvised projectiles (such as bottles; bricks; flammable, biological, and/or corrosive liquids) and hand-delivered blunt trauma weapons (such as bats, sticks, and wooden or metal rods).
- Crash Helmet: intended to protect against impacts during a vehicle crash or fall from horse.

Performance standard for protective shields

Law enforcement, corrections, and fire fighters are in need of a standard for protective shields to address ballistic threats from firearm bullets and fragments/shrapnel from explosions. Tactical officers, bomb technicians,

2013 IAB STANDARDS DEVELOPMENT PRIORITY LIST & DESCRIPTIONS

fire fighters, patrol officers, and corrections officers purchase and carry hand-held ballistic shields to be used in the course of their duties. Many manufacturers claim that these shields are capable of protecting against specific firearm rounds and fragments, but there currently is no standard to demonstrate ballistic protection or explosives protection of shields. The standard should include testing against various shots/hits to the edges, view port material, the viewing port/shield seams, bolts that hold on the carrying handles, etc., and against multiple shots to the shield.

Performance standard for explosive containment vessels: vented and total containment

Bomb technicians (civilian and military) use explosive containment vessels to transport explosives and Improvised Explosive Devices. A standard including performance requirements and test methods is needed to evaluate the functionality of vented and total containment (i.e., gas tight) vessels (TCVs) to contain an explosive blast, chemical/biological agents inside the vessel and the venting/scrubbing properties of the TCVs and related machinery. It is not known whether publications exist regarding testing and performance of containment vessels. Unofficial testing has been conducted by the United States Marine Corps Explosive Ordnance Disposal program using vessels manufactured by NABCO Inc. and Mistral Security Inc.; however, testing has been reliant upon the manufacturer for operational use and specifications. Development of performance requirements and test methods will require research and testing.

TIER 3

Performance standard for tactical operation video cameras

A performance standard is needed to assess capabilities of video cameras used by law enforcement and military officers in tactical operations for surveillance and situational understanding. These cameras are available in several configurations: covert placement, hand-deployed, and pole-mounted.

- Covert Placement: Compact, lightweight cameras capable of being covertly placed in a high-risk situation.
- Pole-mounted: The camera assembly is attached to the end of a pole or extendable mast for viewing around

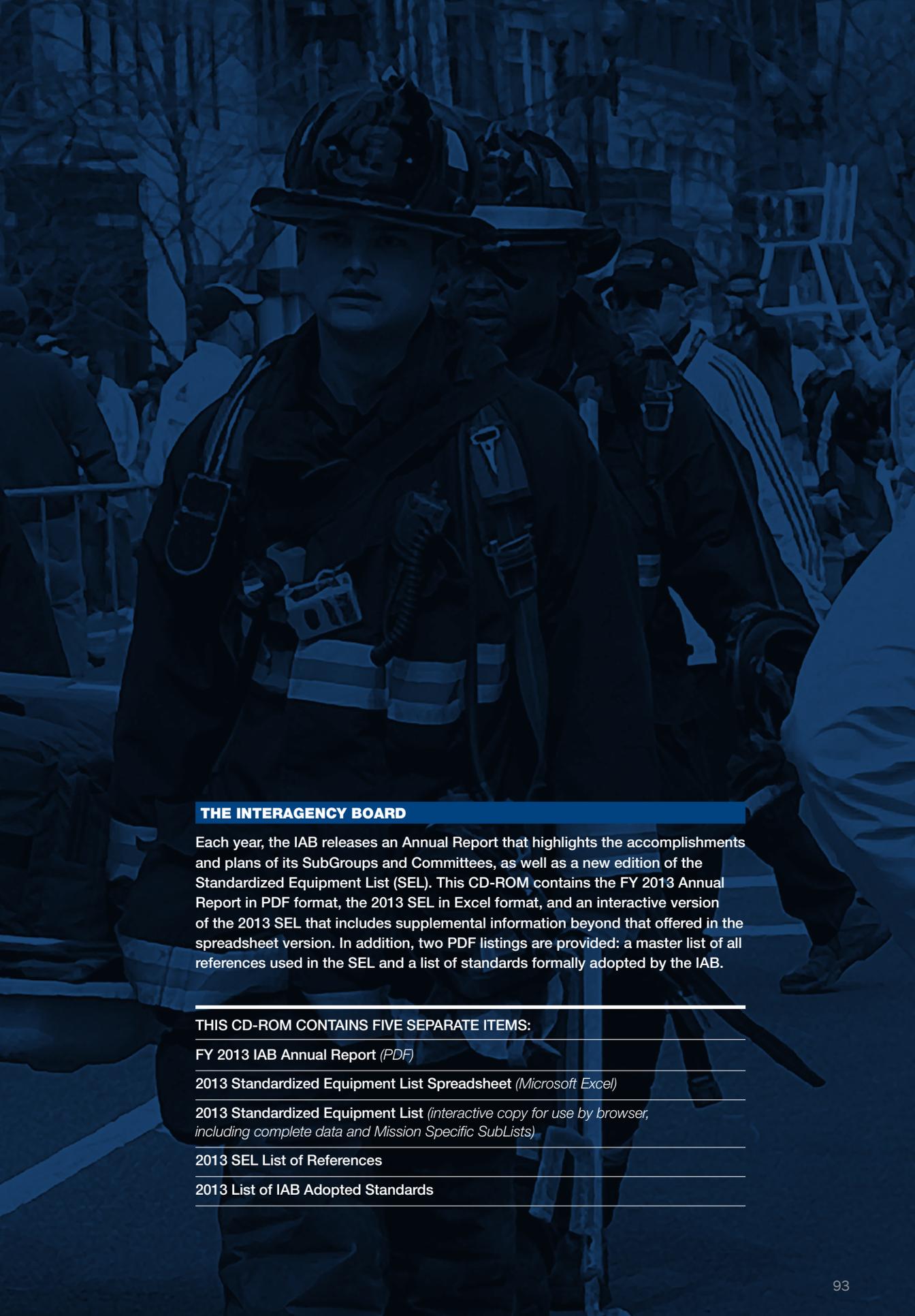
corners, over/under barriers, or through small openings. The camera assembly is ruggedized, may contain a fixed view or zoom camera, microphone, wireless transmission device, and internal power supply, and may have pan and tilt capability. The camera assembly transmits video and audio to a remotely located control and viewing device.

Standard for robot operator self-evaluation and training program

Both public safety and military bomb squad robot operators require extensive training to establish and maintain proficiency in operation and use of robots, but there currently are no standards of testing or evaluating operator capabilities and providing follow-on evaluation/training. The ASTM International Test Methods for Response Robots program has developed a suite of robot test methods describing test environments and specific procedures for assessing robot capabilities, and it is likely that an operator assessment methodology could be added to the suite of ASTM standards. This testing/training would use standardized apparatuses for scenario-based drills and exercises with known results as a method to “self-train” and evaluate robot operator proficiencies from the novice to the expert level. Specific standardized scenarios would have the necessary criteria (such as performance checklists, time constraints) to accurately provide comparisons with vendor expert operators during the test method standardization process and enable bomb squad commanders to identify deficient operators based on aggregate operator performance data across the squad or across the country. The test method apparatuses could then be used as repeatable practice tasks for training and additional evaluation. This set of test methods would focus on situational awareness, maneuvering tasks, terrain and obstacle negotiation, and manipulator strength, reach, and dexterity tasks with an emphasis on vehicle-borne improvised explosive device (VBIED) applications. The ultimate objective is to encourage squads to build and use the apparatuses at their home training locations and possibly create portable test apparatuses that can be shipped to regions for special events. Development of this standard training methodology will require commitment by a standards development organization and practitioners.



Photo Courtesy of Boston (MA) Fire Department



THE INTERAGENCY BOARD

Each year, the IAB releases an Annual Report that highlights the accomplishments and plans of its SubGroups and Committees, as well as a new edition of the Standardized Equipment List (SEL). This CD-ROM contains the FY 2013 Annual Report in PDF format, the 2013 SEL in Excel format, and an interactive version of the 2013 SEL that includes supplemental information beyond that offered in the spreadsheet version. In addition, two PDF listings are provided: a master list of all references used in the SEL and a list of standards formally adopted by the IAB.

THIS CD-ROM CONTAINS FIVE SEPARATE ITEMS:

FY 2013 IAB Annual Report (*PDF*)

2013 Standardized Equipment List Spreadsheet (*Microsoft Excel*)

2013 Standardized Equipment List (*interactive copy for use by browser, including complete data and Mission Specific SubLists*)

2013 SEL List of References

2013 List of IAB Adopted Standards



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