

STRENGTHEN PREPARE RESPOND

THE INTERAGENCY BOARD
FY 2015 ANNUAL REPORT





PHOTO COURTESY OF UPPER MERION TOWNSHIP



“OUT OF MANY, ONE”

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.



PHOTO COURTESY OF WEST COUNTY FIRE AND EMS

Table of Contents

	Dedication		
ii	IAB Champions		
1	The InterAgency Board		
3	Background & Organizational Chart		
6	Structure		
8	Letter from the Chair		
10	Deputy Chairs		
12	FY 2015 Highlights		
16	Demographics		
19	Federal Agency Coordinating Committee (FACC)		
31	Equipment SubGroup (ESG)	39	Health, Medical, and Responder Safety (HMRS) SubGroup
		45	Information Management and Communications (IM&C) SubGroup
		55	Science and Technology (S&T) SubGroup
		63	Standards Coordination SubGroup (SCSG)
		73	Strategic Planning SubGroup (SPSG)
		79	Training and Exercises (T&E) SubGroup
		87	Special Projects
		97	Standardized Equipment List (SEL) Summary
		103	Appendix

IAB CHAMPIONS

PHOTO BY BEVERLY JENSEN | WWW.BEVERLYGALLJENSEN.COM



Alsip (IL) Fire Department
 American National Standards Institute
 Anser
 Arizona State Police, Department of Public Safety, Bomb Squad
 Arlington County (VA)
 Arlington County (VA) Fire Department
 ASTM International
 Bentonville (AR) Fire Department
 Branford (CT) Fire Department
 Boca Raton (FL) Police Department
 Boston (MA) Fire Department
 Brigham and Women's Hospital
 California Department of Corrections & Rehabilitation, Office of Correctional Safety, Emergency Operations Unit
 Carrollton (TX) Fire Rescue
 Cecil County (MD) Department of Emergency Services
 Centers for Disease Control and Prevention, National Center for Environmental Health
 Charleston County (SC) Sheriff's Office
 Cincinnati (OH) Fire Department
 City of Las Vegas (NV) Office of Emergency Management
 City of Ottawa, Security and Emergency Management
 City of Plantation (FL) Fire Department
 City of San Antonio (TX) Fire Department
 City of San Marino (CA) Police Department

City of Seattle (WA)
 City of Tulsa (OK)
 Clayton (DE) Fire Company
 Columbus (OH) Division of Fire
 Cook County (IL) Department of Homeland Security & Emergency Management
 Dartmouth University, Geisel School of Medicine
 Department of Defense, Homeland Security and Global Security
 Department of Defense, Homeland Security Executive Office for Chemical and Biological Defense
 Department of Defense, Joint Program Executive Office for Chemical and Biological Defense, Joint Project Manager Guardian
 Department of Health & Human Services
 Department of Health and Human Services, Agency for Toxic Substances and Disease Registry
 Department of Health & Human Services, Office of the Assistant Secretary for Preparedness & Response, CBRNE Branch
 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 Homeland Security, Customs and Border Protection
 Department of Homeland Security, Domestic Nuclear Detection Office
 Department of Homeland Security, Federal Emergency Management Agency, CBRNE Programs
 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, National Training and Education Division
 Department of Homeland Security, Federal Emergency Management Agency, Office of Policy & Program Analysis
 Department of Homeland Security, Federal Emergency Management Agency, U.S. Fire Administration
 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, Office of Infrastructure Protection

IAB CHAMPIONS



National Institute of Standards and Technology

National Institute of Standards and Technology, Standards Services Group

National Tactical Officers Association

Naval Hospital Twentynine Palms

Naval Postgraduate School, Center for Homeland Defense and Security

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

New York State Association of Chiefs of Police

New York State Department of Public Health, Wadsworth Center

New York State Police

North Carolina Emergency Management

Ohio Funeral Directors Association, Mortuary Response Team

Oldham County (KY) HAZMAT

Orange County (CA) Fire Authority and Health Care Agency EMS

Oregon Office of Emergency Management

Park County (CO) Sheriff's Office

Pennsylvania Emergency Management Agency

Phoenix (AZ) Fire Department

Phoenix (AZ) Police Department

Pineville (NC) Fire Department

Placer County (CA) Health and Human Services

Powell County (MT)

Prince George's County (MD) Fire & EMS Department

Ramsey County (MN) Sheriff's Department

Rhode Island State Department of Health Laboratory

Rochester Institute of Technology, North County Crime Analysis Center

Sacramento County (CA) Sheriff's Department Safety Equipment Institute

Salem (NY) Volunteer Fire Department

Salt Lake County (UT) Sheriff's Office

Santa Clara County (CA) Sheriff's Office

Sarasota County (FL) Fire Department

Sarasota County (FL) Sheriff's Office

Seattle (WA) Fire Department

Snohomish County (WA) Fire District #7

South Carolina Law Enforcement Division

South Central (PA) Regional Task Force

Story County (IA) Sheriff's Office

Technical Support Working Group, Combating Terrorism Technical Support Office

Toledo-Lucas County (OH) Health Department

Town of Shirley (MA)

Underwriters Laboratories

Unified Police Department of Greater Salt Lake (UT)

United States Army Chemical Materials Activity

United States Army Public Health Command, Army Institute of Public Health

United States Army Research Laboratory

United States Army Training and Doctrine Command, Maneuver Support Center of Excellence

United States Capitol Police

United States Coast Guard, Seventh District

United States Coast Guard, Ninth District

United States Environmental Protection Agency

United States Forest Service, National Interagency Fire Center

United States Marshals Service

United States Northern Command, North America Aerospace Defense Command

University of California, Irvine, Center for Disaster Medical Sciences

University of Connecticut

University of Tulsa

Upper Merion Township (PA) Police Department

Valencia State College

Victoria County (TX) Sheriff's Office

Virginia Department of Emergency Management

Walker County (GA) Emergency Services

West County (MO) EMS & Fire Protection District

Yale Emergency Medicine

A large circular graphic composed of concentric rings. The innermost ring is dark blue and contains the letters 'IAB' in white, bold, sans-serif font. The next ring is a lighter blue, followed by a white ring. The background of the entire page is a light gray circle divided into four quadrants by white lines.

IAB

THE
INTER
AGENCY
BOARD

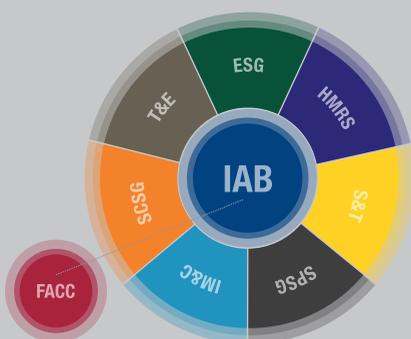
MISSION:

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

— THE —
**INTER
AGENCY
BOARD**

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 developing and implementing performance criteria, standards, test protocols, and technical, operating, and training requirements for all-hazards incident response equipment with a special emphasis on chemical, biological, radiological, nuclear, and explosive (CBRNE) issues. The IAB also informs broader emergency preparedness and response policy, doctrine, and practice.

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.



IAB ORGANIZATIONAL CHART

The InterAgency Board (IAB)
Federal Agency Coordinating Committee (FACCC)
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 (SPSS)
Training & Exercises (T&E) SubGroup

MISSION

The mission of the IAB is to strengthen the nation's ability to prepare for and respond safely and effectively to emergencies, disasters, and CBRNE incidents.

The IAB accomplishes this by:

- Emphasizing interoperability, compatibility, and standardization
- Fostering a multidisciplinary perspective
- Facilitating effective intergovernmental partnerships
- Being a credible voice of the responder community
- 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 Board, 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. We are, therefore, broad in scope and able to voice the perspectives, views, and concerns of responders nationwide without undue influence from the particular interests 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 guides and informs agencies, associations, and manufacturers seeking to design, develop, test, evaluate, and deploy existing and new equipment and capabilities. We help organizations that sponsor research and development programs formulate grant guidance and evaluate program effectiveness. We help 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 is a forum that brings diverse agencies and perspectives together. This enhances cooperation, reduces redundancy, resolves conflicts, and, thus, improves the safety, efficiency, and effectiveness of programs. The IAB is a nexus of disciplines and agencies that allows people to talk to each other and work together to solve problems. This culture of professional openness allows the group to develop viable solutions to equipment standardization and training challenges because all relevant players 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

- Continually update and sustain the Standardized Equipment List (SEL).
- Identify gaps in capability.
- Participate in requirements development processes.
- Prioritize equipment needs.

2. HEALTH, MEDICAL, AND RESPONDER SAFETY

- Identify gaps and needs for providing safe and effective care.
- Evaluate the efficacy and appropriateness of existing and future health and safety related products, processes, practices, and information.
- Serve on working groups that address health and safety.
- Develop recommendations about how to identify, control, reduce, or eliminate responder safety hazards, prevent injuries, and reduce mortality.
- Develop a medical concept of operations for planning, managing, and recovering from incidents that cause physical and/or physiological harm.
- Analyze threat scenarios and make recommendations about how to protect the health and safety of responders and victims.

3. INFORMATION MANAGEMENT AND COMMUNICATIONS

- Identify needs and gaps in the responder information environment.
- Identify gaps in available information technology needed to support responders.
- 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.
- Identify gaps and challenges related to information collection, classification, storage, security,

and dissemination that affect incident prevention and emergency preparedness response.

- Educate emergency responders about the National Strategy for Information Sharing and how to collect, receive, and share essential elements of information.
- Identify gaps and provide decision support material for interoperable communications technologies, policies, and strategies.

4. SCIENCE AND TECHNOLOGY

- Identify innovative government and industry-based technologies.
- Promote the transition of technologies.
- Collaborate on requirements development processes.
- Promote research, development, testing, and evaluation (RDT&E) agendas to meet emergency responder needs.

5. STANDARDS COORDINATION

- Identify and document applicable standards, from internal (IAB) and external sources.
- Recommend potential solutions in terms of standards, equipment development, training, practices, or policies.
- Prioritize standards requirements and related interoperability and compatibility issues.
- 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.
- Identify potential conflicting requirements and facilitate reconciliation of these issues.
- Participate in standards development and revision processes.
- Inform emergency responders about appropriate application of standards.
- Draft and disseminate studies, white papers, and other reports on standards, interoperability issues, and compatibility issues.

- Recommend and promote the adoption and use of standards.
- Identify and inform responders about relevant standards activities, comment periods, and programs that are addressing interoperability and compatibility issues.

6. STRATEGIC PLANNING

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

7. TRAINING AND EXERCISES

- Identify performance improvement needs related to Emergency Support Functions.
- Provide subject matter expertise to support the development of training and exercise programs.
- Provide end-user guidance and operational lessons learned to support training and exercise program development and improvements.
- Facilitate the implementation of training and exercise programs and standards that support individual competencies and organizational capabilities.
- Advocate for standardized national guidance for responder and equipment training and exercises.



The IAB is organized into a Leadership Team, an Executive 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 Subject Matter Experts (SMEs) in that SubGroup's area of expertise. In addition, each SubGroup is responsible for maintaining its subsection of the SEL.

This information reflects the IAB chairmanship for the majority of Fiscal Year 2015. 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.interagencyboard.org.

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

John Delaney, Jr., Arlington County (VA) Fire Department

STATE & LOCAL DEPUTY CHAIRS

Joseph Booth, LSU Stephenson Disaster Management Institute

Jeff Dulin, Charlotte (NC) Fire Department, Retired

FEDERAL AGENCY COORDINATING COMMITTEE

The Federal Agency Coordinating Committee is a coordination group that provides the interface between the IAB and the sponsoring Federal Government agencies. This committee brings together the interests and initiatives of the federal community with the first responder community.

FEDERAL CHAIR

Margaret Sobey-Santos, International and Interagency Office for the Joint Program Executive Office for Chemical and Biological Defense

EQUIPMENT SUBGROUP

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

STATE & LOCAL CO-CHAIR

Lisa Lanham, Sarasota County (FL) Sheriff's Office

FEDERAL CO-CHAIR

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

HEALTH, MEDICAL, & RESPONDER SAFETY SUBGROUP

The 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 needs for new or modified equipment performance and operational standards.

STATE & LOCAL CO-CHAIR

Jeffrey Race, Pineville (NC) Fire Department

FEDERAL CHAIR

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

INFORMATION MANAGEMENT & COMMUNICATIONS SUBGROUP

The IM&C SubGroup develops and advocates protocols and technologies for effective, timely, accurate, and secure information management and communications capabilities, addressing the full

STRUCTURE

range of incidents at all phases of operations. This SubGroup identifies gaps in the responder information and communication environments and recommends mitigating 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

Adam Miller, Huntingdon County (PA) Emergency Management Agency

FEDERAL CO-CHAIR

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

STANDARDS COORDINATION SUBGROUP

The SCSG coordinates standards projects within the 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 that 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

Cassandra Robinson, National Institute of Standards and Technology, Standards Coordination Office

STRATEGIC PLANNING SUBGROUP

The 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 the IAB's position,

and maintains a prioritized list of organizations of interest to the IAB to develop a strategic engagement plan.

STATE & LOCAL CO-CHAIR

Carolyn Levering, City of Las Vegas (NV)

FEDERAL CO-CHAIR

Ray Mollers, Department of Homeland Security, Office of Health Affairs

TRAINING & EXERCISES SUBGROUP

The 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. This 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

Ed Dadosky, Cincinnati (OH) Fire Department

FEDERAL CO-CHAIR

Carol Mintz, Department of Homeland Security, Federal Emergency Management Agency, National Training and Education Division

LETTER FROM THE CHAIR

Unquestionably, our world is becoming more complex and intricate, and as such, first responders are being confronted with situations and emergencies vastly different from those defined in job descriptions less than a generation ago. Emergency responders across the country face a multitude of threats, dangers, and emergencies that challenge every response organization and first responder—from hurricanes and floods, civil disturbances, and urban wildland interface, to Ebola virus and active shooter events. Circumstances and conditions within each discipline present challenges as well; for example, body-worn cameras, unmanned aerial devices, fire flow paths, cancer rates, and traumatic stress. Additionally, societal issues of trust are affecting the first responder community like no other time in history and the national severe mental health crisis is impacting the entire emergency response community arguably more so than any other issue we face. The issues and challenges facing the first responder community are seemingly infinite and ever-evolving.

The InterAgency Board is positioned to help address many of these issues, challenges, and complex situations. Our goal is to effectively address the multitude of issues, so that our emergency responders and emergency response organizations are safer, better prepared, and more effective. Through our most important asset—our members—we are able to affect positive change and assist in strengthening the nation's ability to prepare for and respond to emergencies, disasters and CBRNE incidents.

Our annual report is a compendium of our efforts over the past year to address these issues. As you read this, please know that our efforts continue.

Sincerely,

A handwritten signature in white ink, appearing to read "J. Delaney". The signature is fluid and cursive, with a large initial "J" and "D".

John Delaney
IAB Chair



PHOTO COURTESY OF SEATTLE (WA) FIRE DEPT



JOHN DELANEY
IAB CHAIR

Captain II, Arlington County (VA) Fire Department

John Delaney has been in the fire service for more than 24 years; the past 19 years as a member of the Arlington County Fire Department (ACFD), Arlington, Virginia, where he is the station commander for the Technical Rescue Team. Additionally, he is the program manager for Arlington County Fire Department's High Threat Response Program, which focuses on building operational capabilities required for atypical threats. These threats include active shooter, explosive, and fire-as-a-weapon events. The program focuses on developing multiagency, integrated police and fire response. Previously, he was the team leader for the National Medical Response Team—National Capital Region (NMRT-NCR). The NMRT-NCR was a federally funded weapon of mass destruction response team, composed of more than 150 firefighters, paramedics, hazardous material specialists, law enforcement officers, doctors, and nurses from within the Washington metropolitan region.

Captain Delaney has participated in multiple large-scale regional and national emergencies; including the 1998 Florida Wildfires, 2001 Anthrax Attack at the Senate Office Buildings, the September 11, 2001 attack on the Pentagon, 2004 Hurricane Charley, and the Haiti earthquake of 2010. His education and training in weapons of mass destruction, hazardous materials, and technical rescue response has allowed for contribution 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 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.



JOESPH BOOTH
IAB DEPUTY CHAIR

Executive Director, LSU Stephenson
Disaster Management Institute

Joseph (Joey) Booth is a founding member of the IAB who has provided law enforcement perspective and expertise on information sharing, communications interoperability, and other cross-disciplinary subjects. He was most recently the Executive Director of the Louisiana State University (LSU) Stephenson Disaster Management Institute (SDMI). Working with the state and others, he built and opened the Louisiana Business Emergency Operations Center, a highly acclaimed model of public/private sector partnering for disaster survival and community resilience. Mr. Booth was appointed to the Partnership for Recovery, Japan Task Force, and twice traveled to Japan for meetings with senior government and private sector leaders, and contributed to the Task Force report. Most recently he was the guest of the Australian Attorney General at the Australian Emergency Management Institute, where he was a keynote speaker on strategic foresight and also the future of social media in disaster management. He is a frequent speaker on disaster management and response at national and international forums.

Under his leadership, SDMI began a Center for Business Preparedness focusing on societal resilience through the small and medium sized business community. Mr. Booth also oversaw the creation of the SDMI Disaster Lab. He created and led a cyber-security initiative to close the gap between the private sector and state and local disaster managers and hosted a joint National Guard and LSU cyber range and lab to provide information sharing and analysis for greater awareness and cooperation between critical infrastructure partners and first responders. Mr. Booth also led the creation and staffing of a new Transformational Technology & Cyber Research

Center at LSU specializing in applied research for the defense, intelligence, homeland security, and disaster management enterprises.

Before coming to LSU, Mr. Booth was Northrop Grumman's Director of Public Safety and Homeland Security Accounts where he developed business and transitioned sophisticated capabilities to state and local government customers.

Mr. Booth is a former Deputy Superintendent of Louisiana State Police, serving as the Chief of Crisis Response and Special Operations at the rank of Lieutenant Colonel until his retirement. In this capacity, he oversaw some of the largest hazardous material responses in U.S. history, led the Louisiana response to the Space Shuttle Columbia disaster, and led responses to Hurricanes Katrina, Rita, and others. Mr. Booth also served as chairman of the Louisiana Emergency Response Commission. He was the state program manager of a Department of Defense initiative; the Command and Control Advanced Concepts and Technology Demonstration, a Homeland Security program designed to demonstrate a common civil/military information sharing capability. In addition, He led Louisiana's communications interoperability initiative and formed a multi-state Gulf Coast Coalition to implement an integrated, single architecture for first responders in the multi-state area. Mr. Booth led the implementation of the nation's leading effort in 700MHz technology for public safety communications.

DEPUTY CHAIRS

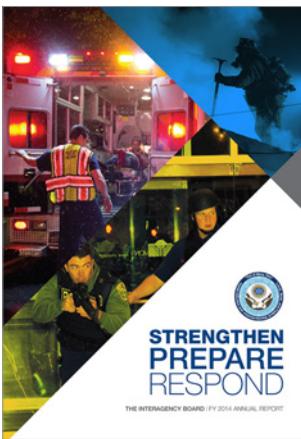


JEFF DULIN
IAB DEPUTY CHAIR

Charlotte (NC) Fire Department, Retired

Jeff Dulin joined the Charlotte Fire Department in 1983 and held the rank of Deputy Chief from 2001 until he retired in March 2015. At the end of his tenure, he was overseeing the Training Division, Communications Center, Emergency Medical Services (EMS) Liaison, Special Operations and the Emergency Management/Homeland Security Division for the City of Charlotte, and Mecklenburg County. Deputy Chief Dulin served 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 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 more than 29 years and is certified in all Incident Management Team positions. For the past seven 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 centered on the need for information sharing systems needed for common operating pictures among agencies. He most recently served on the 2012 Democratic National Committee's Executive Steering Committee and was the Deputy Operations Chief for the entire event. Chief Dulin is still active in Emergency Management as a member of the North Carolina Incident Management Team for the Western Branch.



Published the IAB Annual Report, Research & Development Priority List, and the Standardized Equipment List (SEL), a voluntary guideline of equipment recommended by the IAB for preparing and responding to chemical, biological, radiological, nuclear, and high-yield explosive (CBRNE) and all-hazards events, linked to the Department of Homeland Security (DHS) Approved Equipment List (AEL).

Produced several position papers, white papers, and briefs on pertinent first responder issues:

- » *Recommendations on Selection and Use of Personal Protective Equipment for First Responders Against Ebola Exposure Hazards* (October 2014)
- » *Stress-Related Mental Health Issues in Emergency Responders, First Receivers, Disaster Workers, and Their Families* (November 2014)
- » *Protective Shields Standards: Addressing the Needs and Requirements of United States Public Safety Officers* (December 2014)
- » *Training Triggers and Training Trigger: Crude Oil Rail Shipments Reference* (April 2015)
- » *Law Enforcement Tactical Emergency Casualty Care (TECC) Training and Individual First Aid Kits (IFAK) White Paper* (June 2015)
- » *Resource Allocation for Public Safety in the 21st Century* (June 2015)
- » *Integrating Law Enforcement, Fire, and Emergency Medical Services During Active Shooter / Hybrid Targeted Violence Incidents* (September 2015)

FY 2015 HIGHLIGHTS

(OCTOBER 2014 – SEPTEMBER 2015)

Assembled special project groups from IAB membership on various pertinent first responder topics:

- » BioWatch
- » Enhanced Fire/Law Enforcement/EMS Response Capabilities
- » First Responder of the Future
- » Fire Retardants and the Impact on Firefighter Cancer Rates
- » Mass Fatality Management Strategy
- » Resource Allocation for Public Safety in the 21st Century
- » Non-Law Enforcement Ballistic Protection
- » National Bioterrorism Emergency Response/ Big Cities Project
- » Unmanned Aerial Vehicles (UAVs)

OCTOBER | NOVEMBER | DECEMBER

OCTOBER 2014

Conducted a facilitated discussion to inform the development of activities to support the Emergency Services Sector Specific Plan (ES-SSP).

NOVEMBER 2014

Provided feedback on the final draft of the BioWatch Indoor Guidance document.

DECEMBER 2014

Participated in the Biodetection Standards conference call in support of the DHS S&T First Responders Group.

Drafted and distributed an IAB Letter of Support regarding the urgency of the amendments being proposed for the National Fire Protection Association (NFPA) 1999 standard.

Disseminated the National Institute for Occupational Safety and Health (NIOSH) Ebola Law Enforcement Fact Sheet to IAB members and SMEs.

JANUARY | FEBRUARY | MARCH

JANUARY 2015

Participated in the task group for a new specification for hand-portable biodetection instruments for homeland security applications teleconference in support of the DHS S&T First Responders Group.

FEBRUARY 2015

Provided feedback on Federal Emergency Management Agency (FEMA) CBRNE response documents to biological and chemical attack.

MARCH 2015

Hosted the IAB Active Shooter Summit with DHS Office of Health Affairs to bring together stakeholders of emergency medical services, fire, law enforcement, and emergency management to discuss response to active shooter and fire-as-a-weapon incidents. The Summit focused on capturing common themes and best practices in response to these types of events.

Reviewed and provided input on the DHS Office of Infrastructure Protection, Emergency Services Sector Specific Plan.



APRIL | MAY | JUNE

APRIL 2015

Provided input into the Centers for Disease Control and Prevention (CDC) Ebola Interfacility Transport Guidance.

MAY 2015

Participated in the Future First Responder panel at the International Association of Fire Chiefs (IAFC) – Hazmat Conference in Baltimore, MD.



Featured in the National Tactical Officer's Association publication *The Tactical Edge* Spring Edition.

Managed and participated in the DHS Emergency Services Assessment Tool Survey.

JUNE 2015

Participated in the Combating Terrorism Technical Support Office/Technical Support Working Group (CTTSO/TSWG) Needs Analysis for Ruggedized NFPA 1994 Class 2 Garments Project Survey.

Submitted feedback on the National Institute of Standards and Technology (NIST) Draft Community Resilience Planning Guide.

Provided input to the Department of Health and Human Services (HHS) Fatality Management Concept of Operations (CONOPS) and a Performance Work Statement for the Under Secretary of Defense (USD) for Policy within the U.S. Department of Defense capabilities-based assessment.

Reviewed a NIOSH-developed patient isolation system for hospital patients in respiratory isolation when formal isolation capacity is exceeded.

Hosted the SEL Strategic Review Meeting.

IAB products located on www.interagencyboard.org

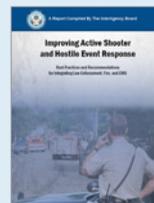
JULY | AUGUST | SEPTEMBER

AUGUST 2015

Hosted the first Big Cities Meeting with DHS Office of Health Affairs, BioWatch to bring representatives from four major U.S. cities—Chicago, Los Angeles, New York City, and Washington, D.C.—to tackle complex questions and issues within biodefense.

SEPTEMBER 2015

Published the IAB Report from the Active Shooter Summit titled *Improving Active Shooter and Hostile Event Response: Best Practices and Recommendations for Integrating Law Enforcement, Fire, and EMS*.



Membership or subject matter expert participation at various conferences and working groups:

- » American Society for Testing and Materials – Committee Meetings
- » Committee for Tactical Emergency Casualty Care
- » Department of Homeland Security, Domestic Nuclear Detection Office Executive Steering Committee
- » Department of Homeland Security, Domestic Nuclear Detection Office Working Group
- » Department of Homeland Security, First Responder Management of Improvised Explosive Devices and Mass Shooting Incidents – Stakeholder Engagement Meeting
- » Department of Homeland Security, S&T Directorate, First Responders Group, Simulation Project Meeting
- » Department of Homeland Security, Science & Technology Directorate, Project Responder 4 Virtual Meetings

FY 2015 HIGHLIGHTS CONTINUED

- » Department of Justice, Federal Interagency Law Enforcement Equipment Working Group
- » Emergency Services Coordinating Council Meeting
- » Emergency Services Sector, Critical Infrastructure Partnership, Advisory Council
- » Federal Communications Commission, Emergency Response Interoperability Council, Public Safety Advisory Committee
- » Federal Emergency Management Agency – National Training Conference
- » First Responder Network Authority (FirstNet)
- » International Association of Chiefs of Police Conference
- » International Association of Fire Chiefs – Hazmat Conference
- » Jack Rabbit II Experiment Planning Session
- » National Bomb Squad Commanders Advisory Board
- » National Governor's Association Civil Disturbance conference call
- » National Public Safety Telecommunications Council
- » National Fire Protection Association, Technical Committee on Non-Structural Fire Fighting Self-Contained Breathing Apparatus
- » National Homeland Security Conference
- » State, Local, Tribal and Territorial Government Coordinating Council
- » TSWG Personal Protective Equipment Conference
- » TSWG Radiological Dispersal Device Workshop
- » Virginia Hazmat Conference

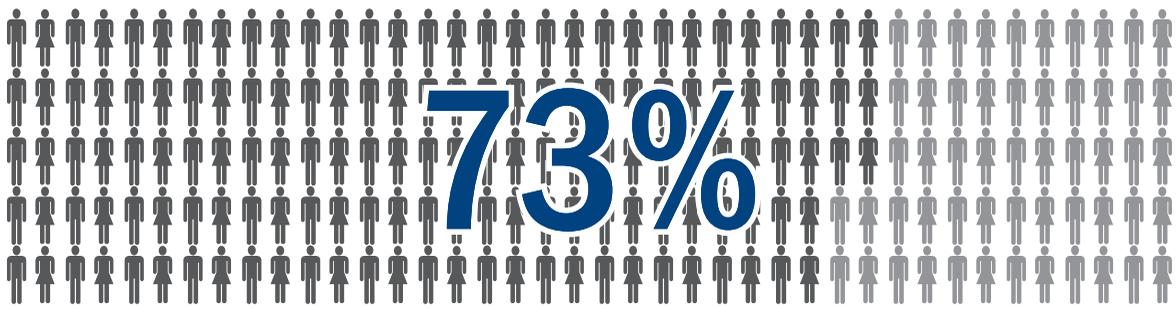


PHOTO BY BEVERLY JENSEN | WWW.BEVERLYGALJENSEN.COM

Every year, the IAB conducts the annual demographics survey to capture in-depth information about participants. The results of the 2015 IAB Demographics Survey are shown in this section.

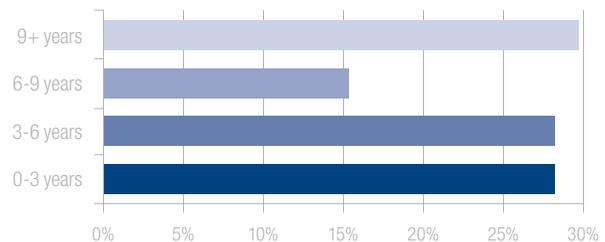
DEMO GRAPHICS

The IAB is comprised of approximately 200 dedicated professionals. Roughly 73 percent of IAB participants have first responder backgrounds.



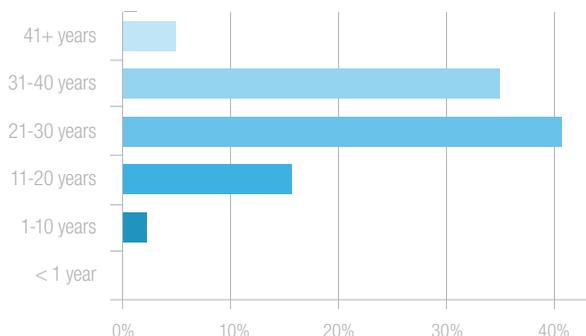
The majority of participants have served the IAB for three or more years.

LENGTH OF SERVICE WITH THE IAB



The majority of the IAB's active first responders have been in service for more than 21 years and work in large jurisdictions with populations greater than 1 million.

ACTIVE FIRST RESPONDER LENGTH OF SERVICE



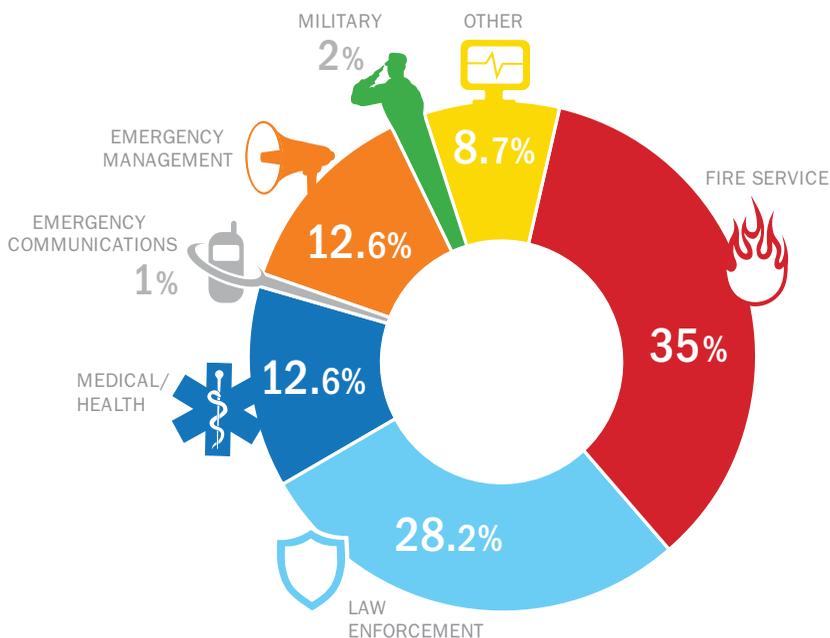
The majority of membership currently works at the executive level, which includes Chief, Deputy Chief, or Emergency Manager positions.

ACTIVE FIRST RESPONDER OPERATIONAL LEVEL



ACTIVE FIRST RESPONDER DISCIPLINE BREAKDOWN

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.



*Others include: Health & Safety Training, Incident Management and Veterinary

The 27 percent of IAB participants who are not first responders provide invaluable knowledge and expertise in a wide array of disciplines. These participants represent government, academic, and professional associations, among many others.

NON-FIRST RESPONDER PRIMARY PROFESSIONAL ROLE DISCIPLINE BREAKDOWN



GOVERNMENTAL

55.7%



PROFESSIONAL ASSOCIATIONS

4.9%



INFORMATION TECHNOLOGY

4.9%



ACADEMIA

8.2%



BUSINESS AND INDUSTRY

1.6%



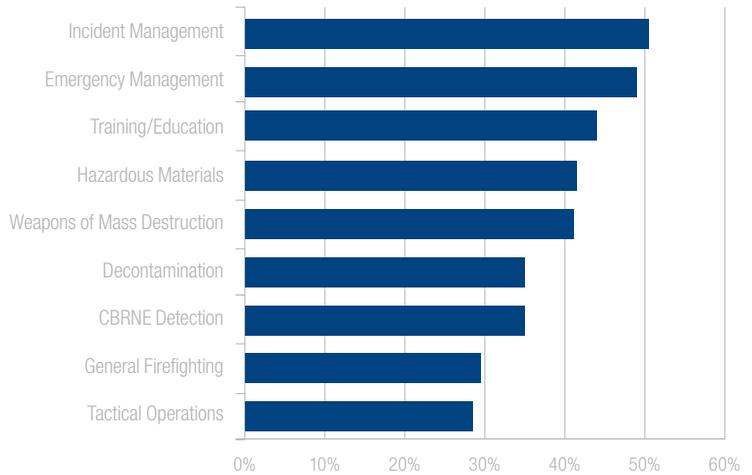
OTHER

24.6%

*Other includes: Standards Development, Health, and Disaster Response

IAB members and subject matter experts maintain a wide range of expertise within the emergency response field.

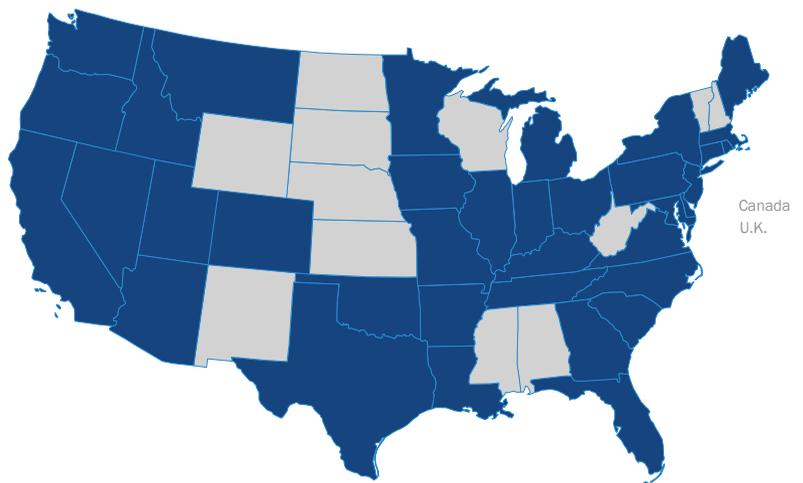
GENERAL AREAS OF EXPERTISE (ENTIRE IAB COMMUNITY)



*Others include: Radiological Materials, Communications, Search & Rescue, Biological Materials, Pre-Hospital Emergency Medical Care, Confined Space Rescue, Public Health, Physical Security/Building Protection, Technology, Information Technology, Structural Collapse Rescue, Criminal Investigations, Force Protection

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

IAB PARTICIPATION (MEMBERS/SMES)





FACC

FEDERAL
AGENCY
COORDINATING
COMMITTEE

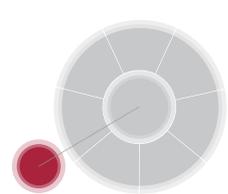




PHOTO COURTESY OF SEATTLE (WA) FIRE DEPT.

FACC

FEDERAL
AGENCY
COORDINATING
COMMITTEE



CHAIR

MARGARET SOBEY-SANTOS

*Chief, International and Interagency Office for the
Joint Program Executive Office for Chemical and
Biological Defense*

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.



PHOTO COURTESY OF STORY COUNTY (NV) SHERIFF'S OFFICE
PHOTO COURTESY OF DC FIRE & EMS

ROLE AND FUNCTIONS

The 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, DOD Joint Program Executive Office for Chemical and Biological Defense

(JPEO-CBD) served as the FACC Chair of the IAB for a second year during FY 2015. The FACC Chair is elected on an annual basis. The FACC leverages ongoing federal RDT&E efforts to meet responder requirements as identified by the IAB. The IAB Chair, Deputy Chairs, and the FACC 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.

MEMBERSHIP

CHRISTINA BAXTER

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

JEFFREY BLIZZARD

*Department of Homeland Security, Federal
Emergency Management Agency, CBRNE
Programs*

DONALD C. BULEY

*Department of Defense, Joint Project
Manager Guardian*

SEAN CRAWFORD

*Department of Homeland Security, Federal
Emergency Management Agency, CBRNE
Programs*

WILLIAM HASKELL

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

KATHLEEN HIGGINS

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

DONALD LAPHAM

*Department of Defense, Homeland Defense
and Global Security*

PHILIP MATTSON

*Department of Homeland Security, Science
and Technology Directorate, Capability
Development Support Group, Office of
Standards*

JEFFREY MCQUILLEN

National Guard Bureau

MILTON NENNEMAN

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

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*

DEBRA STOE

*Department of Justice, 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*



PHOTO COURTESY OF DHS



PHOTO COURTESY OF UPPER MERION TOWNSHIP

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 2015, 20 FACC priorities were submitted by 10 FACC member organizations, 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. Fourteen of the priorities are considered successfully completed with the remainder either removed, on-hold, or carried over to next year. The successfully completed priorities include, but are not limited to, providing subject matter expertise by reviewing and commenting on agency documents, papers, and processes; updating the adopted and referenced standards and the prioritized standards gaps lists; continuous AEL/SEL harmonization as well as reviewing first responder standards related to the AEL/SEL; participating in the development and review of personal protective equipment (PPE) related information and guidance documents; reviewing a national mass fatality management strategy plan and determining requirements to preform mass fatality management; attending and participating in both CTTSO Requirements Meetings and Technical Program Reviews; reviewing the System Assessment and Validation for Emergency Responders (SAVER) Program project categories; beginning the identification of requirements for an emergency services sector self-assessment tool; and providing content for DHS S&T's FirstResponder.gov blog.

The federal priorities that were not completed have been removed for various reasons or carried over to the FY 2016 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 2016.

FEDERAL GOVERNMENT AGENCIES

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

The Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) is responsible for the acquisition and advanced development of Chemical and Biological (CB) defense systems and materiel. The CB defense capabilities 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 DOD installations against Chemical, Biological, Radiological, and Nuclear (CBRN) threats. These programs are diverse, and many include providing equipment and training to 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 continue to support all facets and areas of the IAB. Personnel from DOD serve on the FACC, participate in developing the overall IAB strategy, and attend IAB SubGroup and Committee sessions.

Department of Defense, Combating Terrorism Technical Support Office (CTTSO), Technical Support Working Group (TSWG)

The mission of CTTSO is to identify and develop capabilities to combat terrorism and irregular adversaries and to deliver these capabilities to DOD components and interagency partners through rapid research and development, advanced studies and technical innovation, and provision of support to U.S. military operations. The CTTSO is charged with providing a forum for interagency and international users to discuss mission requirements to combat terrorism, prioritize these requirements, fund and manage solutions, and deliver capabilities. The CTTSO accomplishes these objectives through rapid prototyping of novel solutions developed and field tested before the traditional acquisition systems are fully engaged. This low-risk approach encourages interdepartmental and interagency collaboration, thereby reducing duplication, eliminating capability gaps, and stretching development dollars.

The CTTSO accomplishes its mission in three ways. First, CTTSO takes operational requirements from warfighters, incorporates policy priorities of the DOD civilian leadership, and rapidly identifies, develops, and delivers advanced capabilities for Special Operations Forces and General Purpose Forces to improve the capacity of the DOD to combat terrorism and irregular adversaries. Second, CTTSO collaborates with and supports related requirements of non-DOD U.S. government agencies and state/local/tribal governments to understand those users' priorities and requirements to share expertise, and to develop mutually beneficial capabilities. Third, CTTSO works with partner country ministries of defense under bilateral arrangements to conduct cooperative research and development, which allows the U.S. DOD to leverage foreign experience, expertise, and resources in the fight against terrorists and their infrastructure.

The mission of TSWG is to identify, prioritize, and coordinate interagency and international research and development (R&D) requirements for combating terrorism. Through the Department of Defense's Combating Terrorism Technical Support Office and funding provided by other agencies, the TSWG rapidly develops technologies and equipment to meet the high-priority needs of the combatting terrorism community, and addresses joint international operational requirements through cooperative R&D with major allies.

Department of Defense, Homeland Defense and Global Security (HD&GS)

The Homeland Defense and Global Security office is responsible for policy guidance on homeland defense activities for the DOD. The Assistant Secretary of Defense, HD&GS, 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 and Defense Support of Civil Authorities, homeland preparedness, and coordinates the transfer of dual-use technologies in support of homeland security. The ASD HD&GS 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 JPMG's mission is to develop, test, produce, field, and sustain timely and affordable Joint Integrated Force Protection, Chemical, Biological, Radiological, Nuclear, and high-yield Explosive (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. The 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. The 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 Department of Defense initial Chemical, Biological, Radiological and Nuclear (CBRN) response capabilities and integrating those capabilities with first responders at the state and local level. National Guard CBRN response capabilities include the Weapons of Mass Destruction – Civil Support Teams (WMD-CSTs), CBRNE Enhanced Response Force Packages (CERFPs), and Homeland Response Forces (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 incident. The NGB ensures the utility of these capabilities by meeting civilian standards and integrating them with civilian standard operating procedures. 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



PHOTO BY KATIE WOODRING | WWW.KATIEWOODRING.COM

PHOTO COURTESY OF WEST COUNTY (MO) EMS & FIRE PROTECTION DISTRICT

PHOTO COURTESY OF SEATTLE (WA) FIRE DEPT

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)

The PNP department is responsible for coordinating 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.

The 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 (GPD)
- Office of National Capital Region Coordination
- National Continuity Programs Directorate
- National Preparedness Directorate (NPD)

The GPD and NPD are the PNP components that participate in the IAB's FACC. In FY13 and 14, FEMA's funding for the IAB came from the National Integration Center (NIC), which is within the NPD.

The 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. The 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 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 the capability of and reduce the risks to the nation in times of man-made and natural disasters. The GPD maintains DHS'

Authorized Equipment List (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 Emergency Services Sector (ESS), one of the nation's 16 Critical Infrastructure Sectors. The ES-SSA is responsible for implementing the Presidential Policy Directive-21: Critical Infrastructure Security and Resilience, 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

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

The OHA serves as the principal advisor to the Secretary and the FEMA Administrator on medical and public health issues. The 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 that rapidly detects 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 (i.e., 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, Capability Development Support Group, Office of Standards

The DHS S&T Directorate serves as the primary research and development 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. The S&T manages an integrated S&T program—guided by a risk-diverse, multi-tiered, invested strategy based primarily on the stated needs of customers—and balances it with emerging technology opportunities. The Office of Standards within the Capability Development Support Group of S&T is the organization which performs the Standards Executive function for the Department. The Office of Standards facilitates the integration of existing standards into Department operations and the 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 FRG, was established in October 2010 to strengthen the first response community’s ability to protect the homeland and respond to disasters. Currently, three divisions (the Office for Interoperability and Compatibility, First Responder Technologies, and the National Urban Security Technology Laboratory) and two cross-cutting programs (the Systems Assessment and Validation for Emergency Responders program and the Communications, Outreach, and Responder Engagement program) work together to carry out FRG’s overall mission to strengthen first responder safety and effectiveness. By engaging with 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 their needs through the use of existing and emerging technologies, knowledge products, and standards. The FRG focus areas include responder safety and effectiveness; voice and data communications; information sharing; alerts, warnings, and notifications; and radiological/nuclear response and recovery.

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

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

One mission of NIJ is to conduct research to support the development of voluntary performance standards for public safety equipment. The NIJ has been developing standards for more than 30 years, has produced over 75 standards, and is best known for its Ballistic Resistance of Body Armor NIJ Standard 0101.06.

At the core of NIJ's new standards development process are the Special Technical Committees (STCs). Members of an STC include practitioners, scientists, stakeholder organizations, and individuals knowledgeable in testing, standards development, and certification. The final products of the committee are three related documents: the standard; certification requirements; and a selection and application guide.

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)

The NIOSH mission is to maintain national and world leadership in preventing work-related illness and injuries. The efforts of NIOSH range from research and information to guidance and service. Their program portfolio focuses on relevance, quality, and impact achieved by involving 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.

Personal Protective Technology includes technical methods, processes, techniques, tools, and materials that support the development and use of personal protective equipment worn to reduce occupational exposure to hazards.

Within NIOSH, NPPTL leadership serves as the program management for the NIOSH PPT Cross-Sector Program. This laboratory was established in 2001 when Congress underscored the need for improved personal protective equipment and encouraged research for PPTs.

The NPPTL applies state-of-the-art science to address increasingly complex occupational safety and health challenges. Their strategic research programs help to ensure that the development of new personal protective technologies keep pace with the changing needs and requirements of employers and workers.



PHOTO BY STEVE BRITAIN

PHOTO BY KATIE WOODRING | WWW.KATIEWOODRING.COM

PHOTO COURTESY OF NEW CASTLE (DE) DEPT OF PUBLIC SAFETY

PHOTO COURTESY OF NEW CASTLE (DE) DEPT OF PUBLIC SAFETY



FACC CHAIR
Margaret Sobey-Santos

**Chief, International and
Interagency Office for the
Joint Program Executive
Office for Chemical and
Biological Defense**

Margaret Sobey-Santos serves as the Chief of the International and Interagency Office for the JPEO-CBD. In this role she is responsible for the coordination and synchronization of partnership engagements across the JPEO-CBD Enterprise.

Ms. Sobey-Santos is a recognized subject matter expert in the areas of strategic planning, international and interagency collaboration, chemical and biological defense, national level exercise planning, response and recovery in and across both military and civilian mission spaces. She has been the head of several U.S. Delegations for international engagements and continues to foster cooperation across international, civil and military lines as well as lead planner for several North Atlantic Treaty Organization (NATO) exercises.

She has worked in several positions in the Chemical and Biological Defense Program including, threat agent sciences, Homeland Defense and International Engagements. Prior to her work for the Department of Defense and the Chemical and Biological Defense Program, she worked on Capitol Hill for two U.S. Senators.

Ms. Sobey-Santos received a Bachelor of Arts from Goucher College, Towson (MD) and a Master of Arts from the National Defense University, College of International Security Affairs, with a double major in International Security and Homeland Security.

She is a member of the U.S. Army Acquisition Corps, and Program Management Level 3 certified as well as Project Management Professional (PMP) certified.



ESG

EQUIPMENT
SUBGROUP

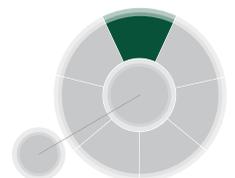




PHOTO COURTESY OF SAFETY EQUIPMENT INSTITUTE



ESG

EQUIPMENT SUBGROUP



STATE & LOCAL CO-CHAIR

LISA LANHAM
Sarasota County (FL) Sheriff's Office

FEDERAL CO-CHAIR

WILLIAM E. HASKELL III
National Institute for Occupational Safety and Health, National Personal Protective Technology Laboratory



PHOTO COURTESY OF THOMAS BRANDON



PHOTO COURTESY OF NATIONAL GUARD

The mission of the Equipment SubGroup (ESG) is to develop, maintain, and update the IAB Standardized Equipment List (SEL) to address the standardization and interoperability of emergency 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.

ROLE AND FUNCTIONS

The ESG—the largest IAB SubGroup—addresses standardization and interoperability issues relating directly to protective, operational, and support equipment for emergency responders. The ESG responsibilities include maintaining the IAB SEL (including designing example products and identifying/incorporating new technologies); developing equipment-driven priorities for research and development (R&D) and standards development; and coordinating with other SubGroups such as

Training and Exercises (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 by the Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), National Preparedness Directorate (NPD), Grant Programs Directorate.

ESG SEL EQUIPMENT OVERSIGHT AREAS

- 1 PERSONAL PROTECTIVE EQUIPMENT (PPE)
- 2 EXPLOSIVE DEVICE MITIGATION AND REMEDIATION EQUIPMENT
- 3 CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR (CBRN) OPERATIONAL AND SEARCH & RESCUE EQUIPMENT
- 4 INFORMATION TECHNOLOGY
- 5 CYBERSECURITY ENHANCEMENT
- 6 INTEROPERABLE COMMUNICATIONS

MEMBERSHIP

ERIC ASHBURN

Walker County (GA) Emergency Services

TAUSEEF BADAR

Naval Hospital Twentynine Palms (CA)

CHRISTINA BAXTER

TSWG Combating Terrorism Technical Support Office

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

ERIC IMHOF

Maritime Academy

JAIME LESINSKI

Los Angeles (CA) Fire Department

ANDRZEJ MIZIOLEK

U.S. Army Research Laboratory

JOSEPH NAMM

City of Plantation (FL) Fire Department

IRENE RICHARDSON

U.S. Army Chemical Materials Activity

PETER STEVENSON

U.S. Environmental Protection Agency

STEVEN TOWNSEND

Carrollton (TX) Fire Rescue

FOREST WILLIS

U.S. Coast Guard, Seventh District

DOUG WOLFE

Sarasota (FL) Fire Department

SUBJECT MATTER EXPERTS

EDWARD BAILOR

United States Capitol Police (Retired)

DAVE BERNZWEIG

Columbus (OH) Division of Fire

RICH DUFFY

International Association of Fire Fighters (Retired)

JASON FINLEY

Kentucky Army National Guard

DONALD HEWITT

Proconsul, Inc.

JEFF MARCUS

Los Angeles (CA) Fire Department (Retired)

MICHAEL MARINO

Prince George's County (MD) Fire & EMS Department

PATRICK MORRISON

International Association of Fire Fighters

ANDREW ROWLEY

Forsyth County (NC) Emergency Services

JEFF STULL

International Personnel Protection, Inc.

DAVID TREBISACCI

National Fire Protection Association



- 7 DETECTION
- 8 DECONTAMINATION
- 9 MEDICAL
- 10 POWER
- 11 CBRN REFERENCE MATERIALS
- 12 CBRN INCIDENT RESPONSE VEHICLES
- 13 TERRORISM INCIDENT PREVENTION EQUIPMENT
- 14 PHYSICAL SECURITY ENHANCEMENT
- 15 INSPECTION AND SCREENING SYSTEMS
- 16 ANIMALS AND PLANTS
- 17 CBRN PREVENTION AND RESPONSE WATERCRAFT
- 18 CBRNE AVIATION
- 19 CBRNE LOGISTICAL SUPPORT
- 20 INTERVENTION
- 21 OTHER AUTHORIZED

Environmental Protection Agency, U.S. Army Research Laboratory, U.S. Army Chemical Materials Activity, U.S. Army Natick Soldier Research Development and Engineering Center, Naval Surface Forces, and the National Guard Bureau.

Professional organizations are widely represented in ESG, including the National Fire Protection Association (NFPA), American Society for Testing and Materials (ASTM) International, International Association of Fire Fighters, and the National Bomb Squad Commander's Advisory Board. Each organization has membership or SME status in 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, technologies, and standards are being developed. Ongoing federal and military R&D 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 together in a cooperative manner has been, and continues to be, essential to the success of the ESG.

MISSION SPECIFIC SUBLISTS (MSSL)

Due to the number and diversity of items listed in the SEL, the ESG develops MSSLS to support critical emergency responder mission areas. The MSSLS are compiled by ESG members and subject matter experts (SMEs) who draw appropriate items from all 21 sections of the SEL. Each MSSL provides a "tailored SEL" for emergency responders in a specific mission area. The MSSLS can be viewed on the IAB website at www.interagencyboard.org.

In addition to those MSSLS developed for mission critical areas, special MSSLS have been developed and released for the Canadian Police Research Centre in order to harmonize equipment with the IAB's Canadian counterparts.

MEMBERSHIP

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

- State and Local Organizations (50%) – Representing fire service, law enforcement, emergency medical services (EMS), medical first receivers, hazardous device operations, hazardous materials, search and rescue, and water operations.
- Federal Agencies (50%) – Representing the National Institute for Occupational Safety and Health (NIOSH), U.S. Coast Guard, U.S.

FY 2015 HIGHLIGHTS AND 2016 INITIATIVES

- The ESG continued to serve as the lead SubGroup for maintaining and updating the SEL, as well as supporting the DHS/FEMA NPD with the AEL. The 2015 edition of the SEL contains numerous updates as described in the SEL section of this Annual Report. Considerable progress was made working with the DHS/FEMA NPD on AEL/SEL alignment and AEL content. ESG representatives met with FEMA grant coordinators in February 2015 to discuss adding wildland firefighting gear and marking cartridges to the AEL. ESG will continue to advocate their inclusion by completing white papers.
- The ESG and Health, Medical, and Responder Safety (HMRS) SubGroup worked together to complete a white paper entitled "Recommendations on Selection and Use of Personal Protective Equipment for First Responders against Ebola Exposure Hazards." Additionally, ESG completed the Responder Safety: Infectious Diseases MSSL to correlate with the recommendations in the white paper. The ESG participated in and supported the American National Standards Institute (ANSI)

and its Director, Homeland Security Standards in support of IAB Standards Coordination SubGroup (SCSG) standards priority development efforts.

- The ESG hosted and facilitated the June 2015 SEL Strategic Review Meeting in Cincinnati, Ohio, that included representatives from SCSG, T&E, HMRS, and Information Management & Communications SubGroup. The outreach mission for the SEL is continuing; the Target Audience Outreach Matrix was completed in October 2015.
- ESG members participated with SCSG at the June meeting to discuss user needs and requirements related to tactical operations video cameras and body-worn cameras.
- Members worked on revisions to NFPA 1999 and made recommendations for revisions.
- Presentations were given at FY15 ESG Breakout Sessions during IAB Board Meetings:
 - » Current detection technology and their capabilities, Barry Smith, DHS
 - » Chem Image, Chuck Gardner
 - » W.L. Gore & Associates, Inc., Michael Kienzle
 - » CBRNE World, A. Schinzel
 - » Airboss Chemical Glove, Christina Baxter
 - » Avon Equipment, James Wilcox, Independent Testing of Handheld Portable Biodetection Equipment, Rich Ozanich Pacific Northwest National Laboratory (PNNL)

EQUIPMENT SUBGROUP 2016 PRIORITY INITIATIVES

- The ESG will continue to identify new detection technologies and equipment by attending the Fire Department Instructors Conference and the International Association of Chiefs of Police (IACP) conference.
- The ESG and IAB members will continue to serve on the NFPA Correlating Committee for Fire and Emergency Service Protective Clothing and Equipment and the eight technical committees under that standards development project.
- The ESG will continue to work closely with the SCSG in revising the IAB process and procedure for formally recognizing product performance and certification, test methods, guidance, and training standards and linking those standards to the SEL equipment items.
- The MSSSLs will continue to be developed for additional public safety and emergency response critical mission areas.



PHOTO COURTESY OF SEATTLE (WA) FIRE DEPT

PHOTO COURTESY OF DC FIRE & EMS

PHOTO COURTESY OF MONTGOMERY COUNTY (MD) FIRE DEPT

STATE & LOCAL CO-CHAIR**Lisa Lanham****Manager, Sarasota County (FL)
Sheriff's Office**

Lisa Lanham began her career in law enforcement at the Polk County, Florida, Sheriff's Office in 1991. In 1994, she became a crime scene investigator for that agency. In 1996, she was hired by the Sarasota County, Florida, Sheriff's Office as a crime scene investigator. During her career she has completed over 700 hours of specialized training in forensic science including agro-terrorism, response to biological incidents and response to terrorist bombings. Ms. Lanham is a blood spatter expert who has instructed in-service and mutual aid training on the subject of forensic science. In 2012, she was promoted to Manager of the Property/Evidence Unit and continues in that position, supervising eight employees. Ms. Lanham is a graduate of Hodges University, and holds an A.S. in Interdisciplinary Studies and a B.S. in Legal Studies. Prior to her law enforcement career, she served in the United States Marine Corps.

FEDERAL CO-CHAIR**William Haskell****Program Manager, NIOSH,
National Personal Protective
Technology Laboratory**

William Haskell is a Program Manager in the Technology Evaluation Branch at the NIOSH National Personal Protective Technology Laboratory. Mr. Haskell is the Co-Coordinator for the NIOSH Public Safety Sector Program and Co-Chair of the National Occupational Research Agenda's Public Safety Sector Council. He serves as the Chairman of the NFPA Correlating Committee for Fire and Emergency Services Protective Clothing and Equipment, and is a member of the NFPA Technical Committee for hazardous materials, electronic safety equipment, structural/proximity, special operations, emergency medical service, and wildland firefighting 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. He is also a member of the Fire Protection Research Foundation's Research Advisory Committee. Mr. Haskell holds a B.S. in Civil Engineering and an M.S. in Plastics Engineering from the University of Massachusetts at Lowell.



PHOTOS BY KATIE WOODRING | WWW.KATIEWOODRING.COM



HMRS

HEALTH,
MEDICAL &
RESPONDER
SAFETY
SUBGROUP

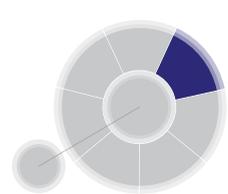


PHOTO BY BEVERLY JENSEN | WWW.BEVERLYJENSEN.COM



HMRS

HEALTH, MEDICAL & RESPONDER SAFETY SUBGROUP



STATE & LOCAL CO-CHAIR

JEFFREY RACE
Pineville (NC) Fire Department

FEDERAL CO-CHAIR

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

The mission of the Health, Medical, and Responder Safety (HMRS) SubGroup is to provide guidance to the IAB on medical, and public health and safety issues potentially impacting our nation's first responders and first receivers. This guidance includes first responder/receiver public health, safety, and performance optimization; and developing best practices and standards for certifying 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. HMRS 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.



ROLES AND FUNCTIONS

- Identify gaps and needs for providing safe and effective pre-hospital medical care under emergency conditions.
- Evaluate the efficacy and appropriateness of existing and proposed health and safety 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 and recommend mitigation strategies.
- Analyze threat scenarios and make recommendations about how to protect public health, medical, and emergency responder personnel, and victims safely and effectively.

INITIATIVES

- Work through the National Institute for Occupational Safety and Health's (NIOSH) Emergency Responder Health Monitoring and Surveillance recommendations to provide an increased focus on health monitoring of first responders during incident response. This includes exploring novel technologies to identify physiological parameters that correlate with performance, safety, and long- and short-term health.

MEMBERSHIP

KNOX ADDRESS

Louisiana Poison Control

SANDY BOGUCKI

*Branford (CT) Fire Department/Yale
Emergency Medicine*

KELLY BURKHOLDER-ALLEN

*Toledo-Lucas (OH) County Health
Department*

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

*Fire Department, City of New York (NY),
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*

RAYMON MOLLERS

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

FRANKLIN PRATT

*Los Angeles County (CA) Immunization
Program*

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,
Agency for Toxic Substances and Disease
Registry AND Centers for Disease Control
and Prevention, National Center for
Environmental Health*

SUBJECT MATTER EXPERTS

ED DOLAN

Fire Department, City of New York (NY)

ROBERT GOUGELET

*Dartmouth University School of Medicine,
Emergency Medicine*

SUSAN JONES-HARD

Center for Homeland Defense and Security

NATHANIEL HINER

Arlington County (VA) Fire Department

GREGG LORD

Intermedix

PAUL MANISCALCO

*International Association of Emergency
Medical Services Chiefs*

LEWIS RADONOVICH

*Department of Veterans Affairs, Center for
Occupational Health and Infection Control*

KARI SCANTLEBURY

Inova Fairfax Hospital

MERRITT SCHREIBER

*University of California, Irvine School of
Medicine, Center for Disaster Medical
Sciences*

MIKE SCOTT

*Kent (WA) Fire Department, Kent Fire
Training Academy*

BOB SHANK

Ohio Funeral Directors Association

TIM STEPHENS

*Emergency Services Coalition for Medical
Preparedness*



- Explore issues impacting emergency responders including training and equipment for care under fire, individual first aid kits for law enforcement officers, and care of unconscious firefighters.
- Address toxicology issues facing first responders including calls for carrying naloxone auto-injectors, toxidromes related to increasing use of bath salts and novel illicit drugs, and the approach to excited delirium syndrome.
- Apply the Tactical Emergency Casualty Care (TECC) method to establish evidence-based approaches for adopting tactics, techniques, and procedures in the pre-hospital medical response environment.
- Published an information paper on the medical approach to the downed firefighter.
- Published a position paper on law enforcement TECC and individual first aid kit recommendations.
- Provided feedback to FEMA on FEMA CBRNE response documents to biological and chemical attack; and the National Institute of Standards and Technology (NIST) on the draft “Community Resilience Planning Guide for Buildings and Infrastructure” document.
- Reviewed and updated a prioritized list of R&D issues impacting the health and safety of first responders.

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 Department of Homeland Security (DHS), Federal Emergency Management Agency’s (FEMA) National Preparedness Directorate. HMRS also draws upon the wide range expertise of SMEs.

FY 2015 ACCOMPLISHMENTS

- Working with additional IAB SubGroups and SMEs, HMRS developed “Recommendations on Selection and Use of Personal Protective Equipment for First Responders against Ebola Exposure Hazards” responding to potential Ebola Virus Disease (EVD) patients in the pre-hospital setting. This document became a key reference for EMS systems across the nation in developing a risk-based process for determining PPE requirements for EVD and was integrated into the Centers for Disease Control and Prevention (CDC) recommendations for hospital-based providers. Additionally, HMRS provided feedback to CDC on their “Ebola Inter-facility Transport Guidance” document.
- Reviewed a NIOSH-developed patient isolation system for hospital patients in respiratory isolation when formal isolation capacity is exceeded.
- Previously developed stress-related mental health issues paper accepted for publication in the National Association of EMS Educators quarterly publication.
- Participated in special projects including reviewing and evaluating the BioWatch Concept of Operations development, Fire Retardant Chemical and the Impact on Firefighter Cancer Rates, First Responder of the Future Project, National Mass Fatality Management, National Bioterrorism Responder Strategy, and Responding to the Mentally Challenged.
- Completed a review of SEL and AEL medical items.

STATE & LOCAL CO-CHAIR

Jeffrey Race

**Safety Officer/Firefighter/EMT,
Pineville (NC) Fire Department,
Commanding Officer/Captain,
FDNY EMS Special Operations/
Haz Tac Battalion, Retired**

Captain Jeff Race (Ret.) is currently the Safety Officer, operating as a volunteer and paid member of the Pineville Fire Department, NC, bringing 35 years of experience to EMS and Fire operations. His experience in 35 years of disasters includes the World Trade Center, HazMat/Rescue, aircraft, marine, rail, mass casualties, structural incidents and planned events to name a few. He developed the FDNY Haz Tac Battalion, where EMTs and paramedics are trained in hazardous materials medical management and the FDNY Rescue Paramedic program. He operated and later supervised responses to many of the anthrax threats in New York City.

Mr. Race remains certified and active in North Carolina. He received his original paramedic certification at Davenport University in Grand Rapids (MI). He continues training and adding first responder certifications in a multitude of areas.

Dr. Duane Caneva is an emergency medicine physician with more than 20 years of experience related to 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 as the head of the Shock Trauma Platoon at Fallujah Surgical in Iraq. His real-world experience includes response with CBIRF to the U.S. Capitol anthrax 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 degree in national security strategy from the National War College.

FEDERAL CO-CHAIR

Dr. Duane Caneva

**Senior Medical Advisor,
DHS, Customs and
Border Protection**

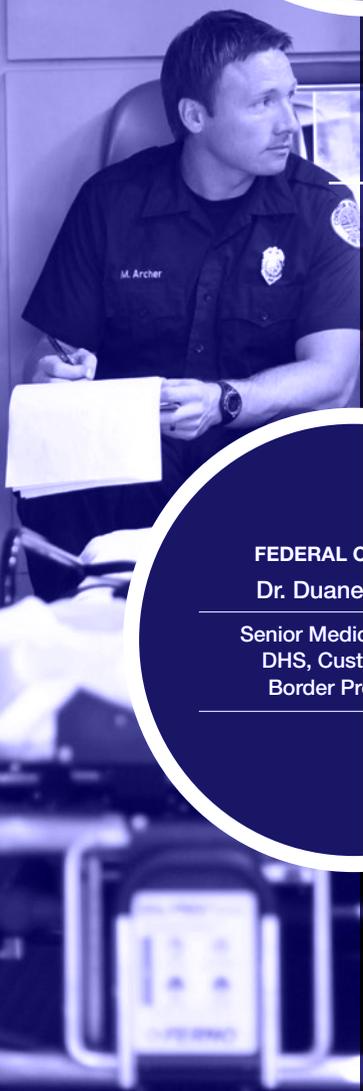




PHOTO COURTESY OF NIST



PHOTO COURTESY OF CHARLOTTE (NC) FIRE DEPT.

IM&C

INFORMATION
MANAGEMENT &
COMMUNICATIONS
SUBGROUP

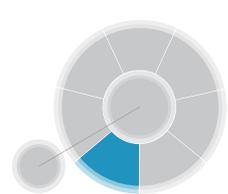




PHOTO BY KATIE WOODRING | WWW.KATIEWOODRING.COM



IM&C

INFORMATION MANAGEMENT & COMMUNICATIONS SUBGROUP



STATE & LOCAL CO-CHAIR

MARK HOGAN
City of Tulsa (OK)

FEDERAL CO-CHAIR

MIKE TUOMINEN
*U.S. Forest Service, National Interagency
Fire Center, National Interagency Incident
Communications Division*



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



ROLES AND FUNCTIONS

The role of the IM&C SubGroup is to develop a common or standardized operating picture for the essential components of an emergency incident response. Building upon perhaps the greatest strength of the IAB, its emphasis on the practitioner; a majority of the IM&C SubGroup membership consists of active first responders from fire, law enforcement, EMS, and emergency management agencies. These members of the first responder community work with federal, state, and local government representatives, as well as SMEs representing science, industry, and academia, to accomplish goals through the quick, efficient, and beneficial exchange of information. The standards, equipment guides, and other work products generated from the IM&C SubGroup are

developed by first responders, for first responders. This unique effort results in information from the first responder's perspective.

The IM&C SubGroup scope includes the following practices and technologies:

- Combat the gaps and challenges related to information collection, sharing, classification, categorization, storage, security, and dissemination that affect incident prevention and emergency preparedness and response.
- Develop decision support materials and interoperable communications technologies, policies, and strategies.

MEMBERSHIP

LEIF ANDERSON

Phoenix (AZ) Fire Department

DON BOWERS

Fairfax County (VA) Fire and Rescue Department

ROY BOYD

Victoria County (TX) Sheriff's Office

JAMES CRONKHITE

United States Northern Command

AMY DONAHUE

University of Connecticut

LEONARD EDLING

Merionette 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

ROBERT RICKER

Alsip (IL) Fire Department

JEFFREY RODRIGUES

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

WILLIAM SNELSON

United States Marshals Service

JOHN SULLIVAN

Los Angeles (CA) County Sheriff's Department

SUBJECT MATTER EXPERTS

JERALD DAWKINS

University of Tulsa

TRENT DEPERZIA

Department of Homeland Security

DAVID ISAACSON

National Protection and Programs Directorate, Infrastructure Protection, Emergency Services Sector

DAVID TRITCH

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

DOUG WIEDMAN

Sacramento County (CA) Sheriff's Department



- Develop and integrate effective, interoperable communications and decision-making support technologies and practices to provide indications, warnings, and information/intelligence support for all-hazard operations.
- Develop recommendations, strategies, and guides in the realm of cybersecurity for the efficient and secure delivery of data.
- Develop system and strategy improvements for intelligence and decision support, including collecting, administering, sharing, analyzing, and protecting information.

The primary means by which the IM&C SubGroup accomplishes its mission is by identifying needs and gaps in the emergency responder information and communications environments, whether voice or data, in order to recommend and advocate mitigating solutions and standards. In after-action reports related to major incidents and drills throughout the nation, communications continues to be listed among the top issues requiring more work. “Interoperability” continues to be one of the most commonly used terms in the realm of emergency response, on all levels.

Federal policy makers and first responders alike can benefit from a clear, reliable information flow between the two. Optimally, the communications process allows federal partners to rapidly obtain feedback essential to improving the safety and security of our nation. First responders are rewarded through timely disseminated information regarding such issues as grant programs, technology trends, resources, and ongoing R&D. It is the IM&C SubGroup’s goal to provide yet another means to disseminate information to those outside the IAB who may not otherwise receive it.

The IM&C SubGroup acknowledges there are many other national groups focusing on improving incident communications. Some of these groups are developing wide-reaching, long-term solutions while others are tasked with mission-specific or discipline-specific solutions. Because of the IAB’s ability to speak from the end-user’s perspective, members of the IM&C SubGroup provide crucial expert advice and guidance to many of these other groups. While IM&C SubGroup members are involved and participating in many of these outside efforts, projects, and programs, it is the emphasis on involving actual responders that makes the IAB and IM&C SubGroup unique.

The IM&C SubGroup continues to emphasize standardizing the equipment and methods used for first responder communications by focusing on vital areas such as information management—using standardized interfaces, skills, and the training of communications support personnel—and cybersecurity, intelligence sharing and exchange, and the common operating picture.

Pen Testing

Members of the IM&C SubGroup working with DHS have drafted scenarios and are awaiting DHS staff to pen test police, fire, and 911 machines in three localities. This will provide a baseline for security needs within the Emergency Services Sector (ESS) and help other state and local governments understand their risks. Because this effort has been delayed, DHS has been requested to reprioritize this work so that they execute it in the near future.

FIRST RESPONDER THREAT ASSESSMENT AND TESTING

A significant finding in communicating the value of the Cybersecurity Continuum was a lack of understanding of the threat posed to our First Responder Community. In order to address this shortcoming, the IM&C group solicited support from the DHS National Cybersecurity and Communications Integration Center’s National Cybersecurity Assessment and Technical Services Team to perform a Risk and Vulnerability Assessment (RVA) exercise. The group devised a series of validation tests to better understand the threat profile of first responders, and leveraging the RVA group could derive actionable real-world guidance to addressing these threats. The group conceived the following scenarios:

LAW ENFORCEMENT

Criminal Record System/Record Management System

Compromise the criminal record system—through database or client/server application—in order to tamper with the integrity of the information, and to negatively impact the availability of the system.

Evidence Locker Room/Data Center Physical Access Control Systems

Physical access to facilities and key critical resources (e.g., Evidence Room and Data Center) are protected by Internet Protocol-based badge access control systems. An attacker could utilize this system to gain unauthorized access to evidence, and either tamper with or steal it.

Vehicle Systems

Compromised vehicle systems negatively impact the ability for law enforcement to obtain critical data from remote services. In addition, vehicles could be compromised to intercept and/or alter data being downloaded to headquarters.

FIRE AND RESCUE

Vehicle System Wireless Access Point

Vehicles leverage wireless access points in order to support field operations. First responders will use issued smart devices to interact with resources. An attacker could use this wireless network to disrupt field operations.

Electronic Pre-Plan Information

Many Fire Departments maintain pre-incident planning information that could include; building layout plans, occupancy information, hazardous materials storage, utility controls and emergency contact personnel. If compromised, this information could be used to disrupt operations.

SHARED SERVICES

Radios over IP

First Responders require highly available communication channels. While the last stage in ESS communications is via radio frequency (also called the “last mile”), Internet Protocol (IP) is used for long-haul transmissions. An attacker could use a demarcation point located at a remote tower to gain unauthorized access to the radio network. Alternatively, an attacker could gain internal access an attack the communication server used to facilitate the Radio IP communications.

911 System Compromise

A compromised 911 System would cause a disruption in first responder systems. If a 911 System was compromised, an attacker could disrupt services by creating false information, or negatively impacting the availability of services.

911 VoIP System Compromise

This compromise is similar to the Radio over IP issue noted above. However, 911 VoIP system compromise affects not only the first responder on the ground but also the confidentiality and integrity of the entire 911 system. Consequently, the capacity and ability for first responders and law enforcement officials to adequately

respond to actual vice malicious activities can be called into question.

WebEOC

WebEOC promotes situational awareness, by connecting organization’s data sources into a common operating picture that includes event reporting, situational awareness, and resource management. If WebEOC is compromised, an attacker could falsify information and disrupt first responder systems.

FURTHERING SYSTEM SECURITY THROUGH ISOLATION

First Responder IT Systems are highly specialized and include significant confidentiality, integrity and availability considerations. Securing devices related to these systems is challenging due to their geographically diverse and interoperability requirements. Leveraging traditional security detection devices poses security risks—vulnerability scanners are not equipped to properly assess vulnerabilities within the networked system and patch management is difficult due to bandwidth, mobility, and availability requirements. Also, first responder vendors aren’t developing devices with security in mind. This effort seeks tools and technology devices to harden First Responder systems at the end point and during transmission, develop detective devices to identify anomalous network and host-based activity, and evaluate techniques and technology to assist first responder IT professionals to more effectively secure first responder IT systems.

Current efforts to secure these environments consist of general control guidance based on the Cybersecurity Framework. Identify, Detect, Respond, and Recover provide general statements without any direct guidance on how to accomplish it. The challenge is that controls need to be clearly defined before they can be controlled. Current first responder IT systems are flat, lack proper monitoring controls, and are plagued with system maintenance challenges regarding updating and patching.

This gap exists in Police, Ambulatory, Fire, and 911 IT systems across the US. The problem is exacerbated with the increasing reliance on technology. New IT systems are being introduced into the environment. Mobility and Internet of Things will further increase the attack surface and risk posed to these systems.



PHOTO BY KATIE WOODRING | WWW.KATIEWOODRING.COM

PHOTO COURTESY OF DHS

PHOTO COURTESY OF NATIONAL GUARD

SAFECOM

National Council of Statewide Interoperability Coordinators (NCSWIC)/SAFECOM

Members of the IM&C briefed the NCSWIC/SAFECOM group at their annual meeting on cybersecurity and the Joint Cyber Continuum that the IM&C previously developed. There many positive comments from audience members indicating the briefing was well received, and the IAB expects more collaboration among the three groups moving forward.

Briefing Review

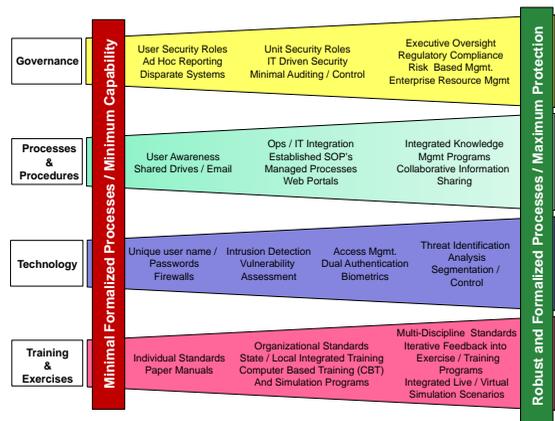
Cybersecurity Threat Mitigation NCSWIC and SAFECOM members heard from a panel of experts on issues related to cybersecurity, including IAB’s Cybersecurity Continuum and NIST’s Cybersecurity Framework. Discussions noted that state Chief Information Officers’ (CIOs’) face a continuous challenge identifying and implementing proactive and preventive cybersecurity programs in response to the emergency services sector’s ever-increasing need to protect and manage data. In response, the IAB developed the Cybersecurity Continuum, a supporting tool to assist leaders and managers in both assessing their current cyber readiness posture and assisting in making critical cyber security decisions. The vision for the IAB Cybersecurity Continuum is to enable non-IT or Information Systems (IS) leaders and managers to understand and quantify cybersecurity maturity levels and devote the appropriate resources to meeting cybersecurity challenges. In a similar vein, NIST created the Cybersecurity Framework aimed at providing an in-depth structure that will help create, guide, assess, or improve comprehensive cybersecurity programs. The NIST Cybersecurity Framework is a major component of the Presidential Executive Order (EO) 13636, Improving Critical Infrastructure Cybersecurity. The document itself is complex, making it easy for an IT manager or systems administrator to understand but difficult for the public safety community to interpret.

OEC continues to work with stakeholders regarding issues related to database and Next Generation (NG 9-1-1) security.

The Critical Infrastructure Cyber Community (C3) Voluntary Program and the Cyber and Physical Threat and Risk Analysis to Improve Networks (CAPTAIN) program are federal programs aimed at reducing cyber risk and threat. C3 encourages using the Cybersecurity Framework to strengthen critical cybersecurity infrastructure and acts as the central coordination point for the Federal Government for those interested in improving cyber risk management processes. Initial support resources will come from DHS, but will expand to include partners in the private sector and industry, and across state and local governments. CAPTAIN’s mission is to increase emergency communications stakeholders’ understanding and awareness about critical cyber and physical risks that could threaten the mission of first responders and public safety agencies.

The need to apply all lanes of the Cybersecurity Continuum (i.e., governance, T&E, technology, usage, processes) to cybersecurity efforts (see Figure 1), and how to use those lanes to promote robust and formalized processes and maximize protection is critical. Shifts in thinking about protection extend past physical security to include a new vulnerability: gaining access to, or stealing, virtual data. The Cybersecurity Continuum can be used as a guideline to remind stakeholders that these efforts begin with physical security, but also require extensive methods for monitoring and identifying cyber threats, and for developing and implementing a detailed response plan and strategies for recovering data. Recovery also includes managing knowledge, further assessing vulnerabilities, analyzing how data may be exploited, and testing and evaluating systems.

Figure 1. Cyber Continuum



Other suggestions for fortifying systems included: hiring outside firms to specifically conduct system penetration testing; creating checklists to make it harder for hackers to gain access to systems; looking at how the corporate world protects against cyber threats; encouraging conversations between IT specialists and operations personnel; continuing to develop automated detection technologies; identifying shortcomings in technology, funding, T&E and reporting up; and if possible, relying on collective team efforts.

¹ http://www.interagencyboard.org/sites/default/files/publications/IAB%20Cyberspace%20Security%20Continuum_0.pdf

² <http://www.nist.gov/ttl/csd/launch-cybersecurity-framework-021214.cfm>

FY2015 ACCOMPLISHMENTS

During FY15, the IM&C SubGroup accomplished the following major items:

- Partnered with NIST to review and examine overlapping features and opportunities in both the IAB Cybersecurity Continuum, published in December of 2013, and the NIST Cybersecurity Framework to leverage information for improvement.
- Completed major Standardized Equipment List (SEL) update to sections 4 & 6 related to communications technology, equipment, and items.
- Completed first draft of the Information Sharing Challenges White Paper.

CURRENT INITIATIVES

During FY16, the IM&C SubGroup will continue to work on the following initiatives:

- Work with NIST to blend the IAB Cybersecurity Continuum and NIST Cybersecurity Framework to create cybersecurity guidance appropriate for senior level managers and officials.
- Finalize content for an Information Sharing Challenges white paper focusing on the behavioral and cultural information sharing challenges prevalent in any structured community. Paper will also address how people and processes play an instrumental role in information sharing.
- Finalize content for an online shared storage services position paper focusing on the fact that most state and local agencies do not have policies governing the use of these services and the security threats and lack of control these types of technologies pose.
- Review two DHS S&T documents, Information Sharing Continuum and Capability Maturity Model.
- Explore geomagnetic storms and craft a preparedness statement paper.



PHOTO COURTESY OF DC FIRE & EMS

PHOTO COURTESY OF BOCA RATON (FL) POLICE DEPT.

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 and a member of their Cyber Working Group. He chairs the Cyber Working Group for the ESS and is active in several current cyber-related issues at DHS.

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

Mr. Hogan has been a reserve police officer for 21 years, first serving in Wagoner County (OK), and currently serving in Broken Arrow (OK).

FEDERAL CO-CHAIR

Mike Tuominen

Branch Chief, U.S. Forest Service,
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 radios; high-frequency and satellite radios and telephones; 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 developing the 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.

PHOTO COURTESY OF THOMAS BRANDON.



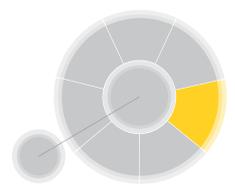
PHOTO COURTESY OF CITY OF PLANTATION (FL) FIRE DEPT.



PHOTO BY BEVERLY JENSEN | BEVERLYGAILJENSEN.COM

S&T

SCIENCE &
TECHNOLOGY
SUBGROUP





S&T

SCIENCE & TECHNOLOGY SUBGROUP



STATE & LOCAL CO-CHAIR

ADAM MILLER
*Huntingdon County (PA)
Emergency Management Agency*

FEDERAL CO-CHAIR

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



PHOTO COURTESY OF SARASOTA COUNTY (FL) SHERIFF'S OFFICE

PHOTO COURTESY OF BOCA RATON (FL) POLICE DEPT

The Science & Technology SubGroup's mission is to identify interagency (federal, state, local, and tribal) R&D requirements and innovative technologies (fieldable within six months to five years) for first responders that address CBRNE focus areas including but are limited to: detection, individual protection, collective protection, medical support, decontamination, communications systems/information technology, deterrence and prevention, and security/situational awareness.

ROLES AND FUNCTIONS

The primary functions of the S&T SubGroup are to develop and update the IAB S&T first responder R&D 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.

ACCOMPLISHMENTS

During FY15 the S&T SubGroup accomplished the following:

- Followed-up on detailed review and prioritization of S&T needs and projects.
- Conducted an R&D requirements write-up training session with SubGroup representatives.
- Worked with the IAB Program Office and leadership to implement an alternate approach to administering the IAB First Responder R&D Priority Survey. After administering the new web-based survey, results were used to prioritize R&D requirements from SubGroups and Focus Area Disciplines.

MEMBERSHIP

CRAIG ADAMS

Los Angeles (CA) Police Department

KENNETH BRENNAN

Federal Bureau of Investigation, Technical Hazards Response Unit

DOUGLAS CARLEY

Grand Rapids (MI) Fire Department

BRYAN COOKE

Fairfax County (VA) Police Department, Bomb Squad

DONALD DENNING

Town of Shirley (MA)

WILLIAM DESO

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

VINCENT DOHERTY

Long Island University

JOHN DONNELLY, SR.

District of Columbia Fire and Emergency Medical Services

CHRISTINA EGAN

New York State Department of Public Health, Wadsworth Center

ANGELA ERVIN

Department of Homeland Security, Science & Technology Directorate

GERARD FONTANA

Boston (MA) Fire Department

DAVID LADD

Massachusetts Department of Fire Services

DANIEL MURRAY

Seattle (WA) Fire Department

MILTON NENNEMAN

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

MARGARET SOBIEY-SANTOS

International and Interagency Office for the Joint Program Executive Office for Chemical and Biological Defense

DAVID TAFAOA

South Carolina Law Enforcement Division

MIKE WITTEVEEN

Grand Rapids (MI) Fire Department

SUBJECT MATTER EXPERTS

GEORGE HOUGH

Fire Department, City of New York (NY)

NANCY SUSKI

Lawrence Livermore National Laboratory

MALCOLM PEATTIE

UK Home Office, Centre for Applied Science and Technology



- Coordinated an effort to explore resources available to empower and increase incident collaboration via electronic means; conducted a gap analysis on current systems (including social media analytics); and met with stakeholders at DHS to explore building a persistent system that would become available nationwide.
- Conducted a statistical analysis of the new IAB R&D requirements survey results and delivered 2015 Research & Development Priority List for official publication.
- Coordinated input to federal R&D agencies to leverage IAB-prioritized requirements.
- Expanded outreach to national labs and centers of excellence to increase the partnership and innovation capacity of the S&T SubGroup.
- Participated in First Responder of the Future Working Group conference calls and meetings.
- Provided commentary/input to BioWatch documents.
- Attended the following events:
 - » International Association of Fire Chiefs (IAFC) HAZMAT Conference in Baltimore
 - » Supported the Incident Command/Law Enforcement Terrorism Risk Assessment Mini Group with Interdiction Modeling
 - » Supported DHS S&T First Responders Resource Group on various initiatives throughout the year
 - » E54.01 Task Group on WK46895 – New Specification for Hand Portable Biodetection Instruments for Homeland Security Applications

FY 2015 INITIATIVES

The S&T SubGroup has established a formal process to collect and prioritize IAB R&D requirements. This was further developed to obtain new requirements from all IAB SubGroups and first responder disciplines. The S&T SubGroup has worked with the IAB Program Office to revise and update the requirements survey process to improve efficiency, data collection, analysis of results, and to broaden the requirements prioritization by first responder disciplines as follows:

- Communications
- Emergency Management
- Fire

- HAZMAT/ Explosive Ordinance Disposal (EOD)
- Law Enforcement
- Medical

This new process was implemented in 2015 to focus on responders' most relevant disciplines. Based on the survey results, the SubGroup intends to 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 in the R&D Database; coordinate visits to industry R&D facilities and federal R&D labs/centers; increase the number of novel and emerging technologies presented to the IAB; and expand the interconnectivity between the S&T SubGroup and other groups generating and advancing innovative research into responder needs.

The S&T SubGroup will continue to support a demographic database and analysis of the IAB membership. New demographic data was gathered in 2015. The S&T SubGroup will also continue to participate and contribute to the First Responder of the Future Special Project.

IDENTIFIED REQUIREMENTS (2015)

The following prioritized R&D requirements were identified by both SubGroups and discipline groups (fire, law enforcement, emergency management, medical, communications, and Hazmat/EOD) as capability gaps that should receive special consideration as R&D initiatives.

2015 IAB Research and Development Priority List

1. USE OF UAV SYSTEMS BY LAW ENFORCEMENT
2. NATIONAL INCIDENT COLLABORATION SYSTEM
3. HIGH FIDELITY, IMMERSIVE, VISUAL SIMULATION TRAINING SYSTEMS (HF/IVS) FOR CIVILIAN FIRST RESPONDERS
4. AUTOMATED GPS TRACKING AND UNIVERSAL SYMBOLOGY FOR LARGE AREA SEARCH EVENTS AND WIDESPREAD DISASTERS
5. DEVELOP PERFORMANCE REQUIREMENTS & TEST METHODS FOR BALLISTIC-RESISTANT BODY ARMOR FOR WOMEN
6. RESEARCH INTO THE EFFECTS OF BLAST OVERPRESSURE FROM AN EXPLOSIVE DEVICE
7. MISSION CRITICAL SECURE COMMUNICATION OVER NON-LMR NETWORKS
8. STRUCTURAL FIREFIGHTER PPE INTERFACE IMPROVEMENTS TO REDUCE CONTAMINATION

9. ISOLATING SPECIALIZED SYSTEMS TO IMPROVE SECURITY
10. RESEARCH INTO IMPROVED METHOD FOR ASSESSING HELMETS FOR PROTECTION AGAINST BALLISTIC BLUNT IMPACT
11. DECONTAMINATION OF LAW ENFORCEMENT AFTER A CRIME SCENE
12. CHALLENGES OF FILTERING FACEPIECES
13. NATIONAL TRAINING PROGRAM FOR EMERGENCY MANAGEMENT
14. LESS HARMFUL / SAFER AND MORE EFFECTIVE HUMAN CAPTURE AND RESTRAINT DEVICES
15. NATIONAL STANDARDIZED SUITE OF RISK ASSESSMENT TOOLS STANDARDIZED
16. RESEARCH INTO TEST METHOD FOR ASSESSING FRAGMENTATION PROTECTION OF BALLISTIC SHIELDS
17. WEARABLE INTRINSICALLY SAFE MINIATURIZED MULTI-DETECTOR SENSOR PLATFORM THAT TRANSMITS DATA THROUGH INTEGRATED WIRELESS OR ANY EXISTING COMMUNICATION SYSTEM
18. AUTOMATED CBRNE EVENT ISOLATION AND EVACUATION
19. PORTABLE (HAND-HELD), RUGGEDIZED, RAPID BIODETECTION KIT
20. META-ANALYSIS OF PREVENTABLE CAUSES OF DEATH FOR LAW ENFORCEMENT
21. INTERACTIVE SIMULATOR FOR COMMAND CENTER TRAINING (VIRTUAL PLAYBOOK)
22. ONE-TIME USE TORSO COOLING UNDERGARMENT FOR SHORT DURATION OPERATIONS
23. INEXPENSIVE, PORTABLE RUGGEDIZED POINT-OF-CARE LAB TESTING DEVICE
24. RAPID, UNIVERSAL, BATTERY CHARGER FOR PORTABLE IN-HOME MEDICAL DEVICES
25. REDACTION OF IMAGERY FROM BODY WORN, VEHICLE, OR SURVEILLANCE CAMERAS FOR PUBLIC RELEASE
26. EFFICACY OF FUSION CENTERS AT THE LOCAL/ STATE/FEDERAL LEVEL
27. BODY-WORN VIDEO ANALYTICS
28. NON-BURNING TREATMENT SYSTEM FOR ILLEGAL FIREWORKS
29. DEVELOP A FULLY INTEGRATED SCBA/SEATBELT SYSTEM FOR FIRE APPARATUS
30. DATA INTERFACE BETWEEN NEMSIS COMPLIANT, PATIENT CARE REPORTS AND HOSPITAL MEDICAL RECORDS
31. MODEL FOR POPULATION RESPONSE TO DISASTER EVENTS STANDARDIZED
32. SMALL PORTABLE DECON KIT FOR VIP

2015 IAB RESEARCH AND DEVELOPMENT PRIORITIES: BREAKDOWN BY DISCIPLINE

Communications

1. MISSION CRITICAL SECURE COMMUNICATION OVER NON-LMR NETWORKS
2. ISOLATING SPECIALIZED SYSTEMS TO IMPROVE SECURITY
3. WEARABLE INTRINSICALLY SAFE MINIATURIZED MULTI-DETECTOR SENSOR PLATFORM THAT TRANSMITS DATA THROUGH INTEGRATED WIRELESS OR ANY EXISTING COMMUNICATION SYSTEM
4. REDACTION OF IMAGERY FROM BODY WORN, VEHICLE, OR SURVEILLANCE CAMERAS FOR PUBLIC RELEASE
5. DATA INTERFACE BETWEEN NEMSIS COMPLIANT, PATIENT CARE REPORTS AND HOSPITAL MEDICAL RECORDS

Emergency Management

1. NATIONAL INCIDENT COLLABORATION SYSTEM
2. AUTOMATED GPS TRACKING AND UNIVERSAL SYMBOLOGY FOR LARGE AREA SEARCH EVENTS AND WIDESPREAD DISASTERS
3. NATIONAL TRAINING PROGRAM FOR EMERGENCY MANAGEMENT
4. NATIONAL STANDARDIZED SUITE OF RISK ASSESSMENT TOOLS STANDARDIZED
5. INTERACTIVE SIMULATOR FOR COMMAND CENTER TRAINING (VIRTUAL PLAYBOOK)
6. EFFICACY OF FUSION CENTERS AT THE LOCAL/ STATE/FEDERAL LEVEL
7. MODEL FOR POPULATION RESPONSE TO DISASTER EVENTS STANDARDIZED

Fire

1. STRUCTURAL FIREFIGHTER PPE INTERFACE IMPROVEMENTS TO REDUCE CONTAMINATION
2. CHALLENGES OF FILTERING FACEPIECES
3. DEVELOP A FULLY INTEGRATED SCBA/SEATBELT SYSTEM FOR FIRE APPARATUS

Hazmat/EOD

1. RESEARCH INTO THE EFFECTS OF BLAST OVERPRESSURE FROM AN EXPLOSIVE DEVICE
2. AUTOMATED CBRNE EVENT ISOLATION AND EVACUATION
3. NON-BURNING TREATMENT SYSTEM FOR ILLEGAL FIREWORKS

Law Enforcement

1. USE OF UAV SYSTEMS BY LAW ENFORCEMENT
2. DEVELOP PERFORMANCE REQUIREMENTS & TEST METHODS FOR BALLISTIC-RESISTANT BODY ARMOR FOR WOMEN
3. RESEARCH INTO IMPROVED METHOD FOR ASSESSING HELMETS FOR PROTECTION AGAINST BALLISTIC BLUNT IMPACT
4. DECONTAMINATION OF LAW ENFORCEMENT AFTER A CRIME SCENE
5. LESS HARMFUL / SAFER AND MORE EFFECTIVE HUMAN CAPTURE AND RESTRAINT DEVICES
6. RESEARCH INTO TEST METHOD FOR ASSESSING FRAGMENTATION PROTECTION OF BALLISTIC SHIELDS
7. META-ANALYSIS OF PREVENTABLE CAUSES OF DEATH FOR LAW ENFORCEMENT
8. ONE-TIME USE TORSO COOLING UNDERGARMENT FOR SHORT DURATION OPERATIONS
9. BODY-WORN VIDEO ANALYTICS
10. SMALL PORTABLE DECON KIT FOR VIP

Medical

1. HIGH FIDELITY, IMMERSIVE, VISUAL SIMULATION TRAINING SYSTEMS (HF/IVS) FOR CIVILIAN FIRST RESPONDERS
2. PORTABLE (HAND-HELD), RUGGEDIZED, RAPID BIODETECTION KIT
3. INEXPENSIVE, PORTABLE RUGGEDIZED POINT-OF-CARE LAB TESTING DEVICE
4. RAPID, UNIVERSAL, BATTERY CHARGER FOR PORTABLE IN-HOME MEDICAL DEVICES



PHOTO COURTESY OF CENTER FOR DOMESTIC PREPAREDNESS, FEMA, U.S. DHS
PHOTO COURTESY OF DC FIRE & EMS



STATE & LOCAL CO-CHAIR

Adam Miller

Director of Emergency Management, Huntingdon County (PA) Emergency Management Agency

Adam Miller is currently serving as the Director of Emergency Management for Huntingdon County (PA), leading an excellent mixed team of volunteer, career and contracted staff charged with providing numerous public safety services to the county. Mr. Miller has managed a broad spectrum of public safety responses, including large-scale, public events such as the Creation Festival, and a number of Presidentially-declared disaster events. He has broad experience in leadership and management, and has built strong partnerships between the private interest parties, local governments, local public safety agencies, and partner state and federal agencies. He has 19 years of progressive experience, and diverse background in emergency management, security, emergency response, law enforcement, counter terrorism, volunteer management, technology development and commercialization. Mr. Miller holds a B.S. in Public Administration, and an M.S. in Non-Profit Leadership—both from Juniata College in Huntingdon (PA).

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 Combating Terrorism Technical Support Office, providing management and technical oversight for executing the Technical Support Working Group rapid R&D program. He has 28 years of experience developing and evaluating Combating Terrorism capabilities for the Department of Defense 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.



PHOTO BY BENJAMIN CROSSLEY / FEMA

TECHNOLOGIES FOR CRITICAL INCIDENT PREPAREDNESS
Conference and Expo

Why Standards Are Important

- Provides confidence in a product if it meets a standard
- Allows comparison of products based on common testing
- Provides information to make an informed purchase decision
- Use of equipment interoperability
- Development of Training, Operating, Competency Standards

Advancing Tec

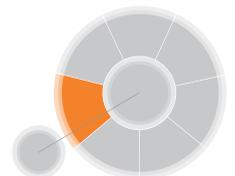
Learning from the past, prep



PRACTICING ROBOTIC TEST METHODS FOR VBIEDS

SCSG

STANDARDS
COORDINATION
SUBGROUP





SCSG

STANDARDS COORDINATION SUBGROUP



STATE & LOCAL CO-CHAIR

MARTIN HUTCHINGS

*Sacramento County (CA) Sheriff's Department,
National Bomb Squad Commanders Advisory Board*

FEDERAL CO-CHAIR

CASANDRA W. ROBINSON

*Standards Coordination Office, National Institute of
Standards and Technology*

The mission of the Standards Coordination SubGroup (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.



ROLES AND FUNCTIONS

The SCSG supports and coordinates the IAB's efforts to identify and address standards requirements within the emergency responder community. The IAB SubGroups identify standards that need to be developed or revised, and the SCSG assists the process in the following ways:

- Participating in standards development and revision processes.
- 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 and prioritizing standards requirements and related interoperability and compatibility issues.
- Catalyzing the development of IAB priority standards by private-sector standards development organizations.
- 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

GARY BACKOUS

Story County (IA) Sheriff's Office

CRIS CALDWELL

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

CHARLES CORDOVA

Seattle (WA) Fire Department

MATTHEW DUGGAN

Boca Raton (FL) Police Services Department

JEFF FINN

Fairfax County (VA) Police Department, SWAT

KAREN HOUSE

Joint Project Manager Guardian

PHILIP MATTSO

Department of Homeland Security, Science and Technology Directorate, Capability Development Support Group, Office of Standards

THOMAS NOLAN

Upper Merion Township (PA) Police Department, National Tactical Officers Association

TIM REHAK

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

NICHOLAS ROBERTS

Unified Police Department of Greater Salt Lake (UT)

DEBRA STOE

Department of Justice, National Institute of Justice

MARK STOLOROW

National Institute of Standards and Technology, Law Enforcement Standards Office

MARCIE WACKER

Ramsey County (MN) Sheriff's Office, International Association of Women Police

BRIAN WASHBURN

Santa Clara County (CA) Sheriff's Office

SUBJECT MATTER EXPERTS

GREGORY CADE

National Fire Protection Association

STEVEN CORRADO

Underwriters Laboratories

JOHN CRONIN

Intertek, HP White Laboratory

MICHELLE DEANE

American National Standards Institute

CRAIG DICKERSON

Montgomery County (MD) Police Department

MICHAEL FERGUS

International Association of Chiefs of Police

PAT GLEASON

Safety Equipment Institute

ROB KINSLER

HP White Laboratory Inc.

PATRICIA KNUDSON

Phoenix (AZ) Police Department

RICK LAKE

ASTM International

MATT MCLAUGHLIN

U.S. Army Training and Doctrine Command

MARY MIKOLAJEWSKI

ASTM International

DAVID OTTERSON

National Law Enforcement and Corrections Technology Center - National

DANIEL SHIPP

International Safety Equipment Association

NIST TEST METHODS FOR URBAN SEARCH & RESCUE



- Recommending and promoting the use of standards and conformity assessments.
- Drafting and disseminating studies, white papers, and other reports on standards, interoperability issues, and compatibility issues.
- Identifying potential conflicting requirements and facilitating reconciliation of those issues.

PARTNERSHIPS

The success of the IAB's standards development process is built upon partnerships with 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, conformity assessment, and selection, use, care, and application guides. The SCSG members and SMEs represent many federal and private agencies:

- American National Standards Institute (ANSI)
- ASTM International
- International Association of Chiefs of Police (IACP)
- International Association of Fire Chiefs (IAFC)
- International Association of Women Police (IAWP)
- International Safety Equipment Association (ISEA)
- Intertek Testing Services
- HP White Laboratory Inc.
- National Bomb Squad Commanders Advisory Board (NBSCAB)
- National Fire Protection Association (NFPA)
- National Law Enforcement and Corrections Technology Center
- National Sheriffs' Association (NSA)
- National Tactical Officers Association (NTOA)

- Safety Equipment Institute (SEI)
- Underwriters' Laboratories
- U.S. Army
- U.S. Department of Commerce, National Institute of Standards and Technology (NIST)
- U.S. Department of Health & Human Services, National Institute of Occupational Safety and Health, National Personal Protective Technology Laboratory (NPPTL)
- U.S. Department of Homeland Security (DHS), Science and Technology Directorate
- U.S. DHS System Assessment and Validation for Emergency Responders (SAVER) Program
- U.S. Department of Justice, National Institute of Justice

ACCOMPLISHMENTS

During FY15, the SCSG accomplished the following:

- Supported and coordinated IAB efforts to identify and prioritize standards development requirements derived from the responder community.
- Initiated or continued progress on previously identified IAB standards development priorities.
- Assisted the SubGroup ESG with the SEL item content.
- Updated the listing of IAB adopted standards.
- Made progress on FACC-identified work plan items to create a conformity assessment decision tool and a path forward for developing standards for body armor worn by female officers.
- Continued current initiatives to support developing standards relevant to the responder community.

IAB-ADOPTED STANDARDS

The Standards List, located at the end of the SEL, includes standards officially adopted by the IAB. The IAB initially began to adopt and list standards to inform the responder community of applicable standards. IAB members with relevant expertise and knowledge reviewed each standard and recommended adoption and listing by the IAB. The list of standards continues to be relevant to the SEL and is maintained by the SCSG.

IAB-adopted Designation

IAB-adopted is a designation for a standard that is part of the definition of a SEL item, and that means one or more of the following:

- The standard is applicable to the responder community.
- The standard is used and deemed to be of value and fit-for-purpose by the responder community and industry.
- The standard may be a useful resource for procurement officials.
- The standard was developed following the principles of openness, balance, consensus and due process.

Annual Review

- The SCSG annually reviews and updates the IAB-Adopted Standards List to ensure each listed standard is the most current version.
- As a part of the annual review, the SCSG determines whether any standards are out of date, withdrawn, or no longer relevant. Any such standards are removed from the IAB-Adopted Standards List.
- If, following annual review, a standard is deemed “questionable,” SCSG and ESG collaborate to determine a path forward
- There are approximately 80 IAB-adopted standards.

The IAB also maintains a listing of approximately 150 standards that are referenced by the SEL.



PHOTO COURTESY OF NABCO, INC.

IAB will work on standards for containment vessels like the ones shown above.

IAB STANDARDS DEVELOPMENT PRIORITIES

The SCSG worked with ANSI's Homeland Defense and Security Standards Coordination Collaborative to engage federal agencies and standards developing organizations in addressing IAB standards development priorities, and a status for each priority is provided in the table below:

Item	Status
1. Standardized equipment training program format	ASTM International is developing this standard.
2. Performance standard for protective helmets	ASTM International is developing this standard.
3. Performance standard for protective shields	ASTM International is developing a ballistic test method, a key part of a performance standard.
4. Performance standard for tactical operation video cameras, including body-worn video cameras	UL is developing the performance standard, and the NFPA is developing a guidance document for users. An IAB end-user discussion was held to identify needs and requirements for this equipment.
5. Standard for robot operator self-evaluation and training program	ASTM International is planning to develop these standards; ASTM International and NFPA are working together to co-brand a certification program for robot operators.
6. Standard for public safety bomb suits, additional requirements for blast overpressure protection	R&D is required before performance requirements and a test method can be standardized.
7. Standard test method for respirator fit test equipment	The IAB determined that a standard is not needed; instead guidance for the responder community will be developed by the IAB.
8. Performance standard for explosive containment vessels	The IAB determined that developing a standard is not feasible at this time for these reasons: the market is very limited, products appear to be custom ordered, and research to support a standard will cost millions of dollars and take away from other needed projects. In lieu of a standard, procurement guidance published by DHS SAVER program provides useful information for responders.
9. Product standard for PPE for EMS providers	Revision of NFPA 1999, Standard on Protective Clothing for Emergency Medical Operations, will address this need.
10. Product standard for less lethal devices, including conducted energy, chemical, and impact devices	The IAB is working to identify user needs and requirements that will be used to develop standards.
11. Product standard for distraction devices (e.g., flash bangs)	The IAB is working to identify user needs and requirements that will be used to develop standards.
12. Product Standard for protective gloves	ASTM International has agreed to develop a performance standard; user needs and requirements are being defined.
13. Standard test methods for body armor designed for females	ASTM International has initiated the development of a standard practice to address this need.
14. Standard test methods for localization and tracking systems	A standard is being developed to address this need: ISO/IEC CD 18305, Information technology—Real-time locating systems—Test and evaluation of localization and tracking systems.

SCSG OUTREACH TO STAKEHOLDER ORGANIZATIONS

SCSG implemented a plan for reaching out to responder stakeholder organizations and standards development organizations to inform them of IAB efforts in standards development. An article was published in the NTOA magazine, *The Tactical Edge*, describing IAB in general and detailing its impact on standards development for the responder community. A journal article entitled, "Addressing a Responder Standards Development Dilemma," was written for *Standards Engineering, The Journal of SES – The Society for Standards Professionals*.

SCSG PARTICIPATION IN STANDARDS DEVELOPMENT INITIATIVES

SCSG members and SMEs contribute to numerous standard development efforts supporting the responder community. The following are standards activities to which SCSG members are 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 119 standards, and is currently developing many new standards. Many SCSG representatives are also members of this ASTM committee and are working on standards for body armor, protective shields, protective helmets, response robots, and equipment training programs.
- **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 contamination source. 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, ballistic and radiological hazards. F23 has also established a subcommittee to address the issues associated with the interoperability of PPE.

- **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 Flash Fire Protective Garments; EMS; and Hazardous Materials Response. SCSG has reached out to NFPA to request that they consider developing new standards in response to requests from other IAB Committees.
- **National Institute of Justice (NIJ):** SCSG members are participating in current NIJ initiatives 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. Additionally, NIJ has begun the process of moving select standards to appropriate private-sector standards developing organizations.
- **NPPTL:** The NPPTL was created as the division of 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
 - » Mine emergencies and effective equipment for all mine workers
- **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
- ISEA: ISEA is the association for PPE, technologies, and systems that enables people to conduct work in hazardous environments and includes 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 and protective apparel. As an ANSI-accredited standards developing organization, ISEA is secretariat for 13 PPE product standards and in 2014 published a new American National Standard for PPE conformity assessment.

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, National
Bomb Squad Commanders
Advisory Board

Martin Hutchings retired as a Sergeant after 29 years 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 during 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. Since retirement, he has worked part-time as an Explosive/Bomb Technician SME in support of the NIST 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

Cassandra W. Robinson

Physical Scientist, Standards
Coordination Office, National
Institute of Standards and
Technology

Cassandra Robinson is a physical scientist in the NIST Standards Coordination Office. She is responsible for leading the development of documentary standards and standards-related policy activities and coordinating with NIST technical units, other federal agencies, industry, and other stakeholders in developing standards/conformity assessment needs and requirements. She serves on the ASTM International, E54 Committee on Homeland Security Applications as the Vice Chair for E54.04, *Personal Protective Equipment Subcommittee*. She also serves as the federal co-chair for the ANSI Homeland Defense and Security Standardization Collaborative.

Prior to joining NIST, Ms. Robinson was a Program Manager with the Department of Energy's Savannah River National Laboratory. For the previous five years, she served as the standards and conformity assessment lead for the National Institute of Justice's Standards and Testing Program and supported development of performance standards for public safety equipment. She has a B.S. in Electrical Engineering from Clemson University and an M.S. in Industrial and Systems Engineering from the University of Alabama.



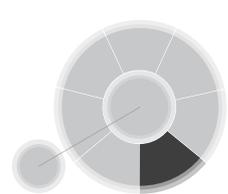
PHOTO COURTESY OF FAIRFAX COUNTY (VA) FIRE AND RESCUE



PHOTO COURTESY OF SARASOTA COUNTY (FL) SHERIFF'S OFFICE

SPSG

STRATEGIC
PLANNING
SUBGROUP





PHOTOS BY KATIE WOODRING | WWW.KATIEWOODRING.COM



SPSG

STRATEGIC PLANNING SUBGROUP



STATE & LOCAL CO-CHAIR

CAROLYN LEVERING
*Emergency Manager, City of Las Vegas (NV)
Office of Emergency Management*

FEDERAL CO-CHAIR

RAY MOLLERS
*Emergency Medical Services (EMS) Program
Manager, Office of Health Affairs, Department of
Homeland Security*



PHOTO COURTESY OF DHS

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 ARLINGTON COUNTY (VA) FIRE DEPARTMENT

ROLES AND FUNCTIONS

- Inform policymakers about emergency responders' operational concerns.
- Identify and interpret emerging policy, doctrine, or practice issues and coordinate the IAB response.
- Monitor diverse strategic national initiatives, 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.

MEMBERSHIP

MICHAEL BIASOTTI

New York Association of Chiefs of Police

JOHN ESPOSITO

Fire Department, City of New York (FDNY)

CHERYL GAUTHIER

*Massachusetts Department of Public Health,
Bioterrorism Response Laboratory*

JOHN GIBB

Salem (NY) Volunteer Fire Department

ROBERT INGRAM

Fire Department, City of New York (FDNY)

ROBERT JOHNS

*Department of Homeland Security, Domestic Nuclear
Detection Office*

JOHN KOERNER

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

DAVID MCBATH

New York State Police

J. CLAY MCGUYER

Joint Improvised-Threat Defeat Agency

DANIEL SCHULTZ

*Department of Homeland Security, Office of
Infrastructure Protection*

JAMES SCHWARTZ

Arlington County (VA)

THOMAS SHARKEY

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

JEFFREY STERN

Virginia Department of Emergency Management

A.D. VICKERY

Seattle (WA) Fire Department

MICHAEL WALTER

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

SUBJECT MATTER EXPERTS

STEPHEN DAVIS

Oldham County (KY) Hazardous Materials

MARK HILL

Indian Nation Fire & Emergency Management

LAURIE HOLIEN

Oregon Office of Emergency Management

ARTURO MENDEZ

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

MICHELLE ROYAL

Homeland Security Studies and Analysis Institute

ROBERT TUOHY

Homeland Security Studies and Analysis Institute



PHOTO BY KATIE WOODRING | WWW.KATIEWOODRING.COM

PHOTO COURTESY OF FIRSTNET.GOV

ONGOING PROJECTS

During FY15 the Strategic Planning SubGroup worked on the following and continues to:

- Coordinate IAB feedback to the National Security Staff on interagency policy development and review.
- Identify existing and future plans, policies, and doctrinal initiatives that may benefit from IAB input.
- Build relationships with associated emergency services policymakers and organizations.
- Evaluate and develop opportunities for enhanced IAB participation with international and private emergency response stakeholders.
- Participated on the DHS Office of Infrastructure Protection, Emergency Services Coordinating Council.
- Participated in the DHS stakeholder engagement meeting on First Responder Management of Improvised Explosive Devices and Mass Shooting Incidents.
- Provided representatives to a Full Scale Active Shooter Exercise held in London, UK.
- Developed IAB white paper on the National Protection and Programs Directorate, Infrastructure Protection (IP) Standard Information Needs for future IP projects.
- Reviewed and provided input on the new National Infrastructure Protection Plan.

FY 2015 PROJECTS AND ACCOMPLISHMENTS

During FY15 the Strategic Planning SubGroup accomplished the following:

- Provided recommendations to the FEMA Response Directorate, CBRNE Branch on the FEMA RadResponder Tool and the FEMA 72 Hr. Improvised Nuclear Device Playbook.
- Participated in Project Responder 4, a DHS S&T SubGroup initiative to identify emergency responder Enduring & Emerging Capability Needs by providing recommendations and feedback to the project.
- Developed an IAB Outreach Strategy Plan for enhanced coordination and marketing of the IAB.
- Established a relationship with IP Emergency Services Sector (ESS) on conceptualization and development of a suite of tools and methods for measuring and assessing ESS resilience.
- Developed a white paper about the IAB's view regarding the Top Homeland Security Issues for the near future.

STATE & LOCAL CO-CHAIR

Carolyn Levering

**Emergency Manager,
City of Las Vegas (NV)
Office of Emergency Management**

Carolyn Levering is the Emergency Manager for the City of Las Vegas, Office of Emergency Management (OEM). In this capacity, she directs the development and maintenance of emergency response plans, manages federal and state grant programs, and conducts routine T&E. She earned her bachelor's degree from the University of Southern California and master's degree from the University of Nevada, Las Vegas (UNLV) . She has been a Certified Emergency Manager since 2005. Prior to leading the Las Vegas OEM, Ms. Levering served as the Plans and Operations Coordinator for Clark County (NV) and Chapter Operations Director for the American Red Cross of Southern Nevada.

In addition to her role in the IAB, Ms. Levering's current appointments include: Chair, Nevada State Emergency Response Commission, Planning and Training Subcommittee; Senior member, Nevada Commission on Homeland Security Finance Committee and Critical Infrastructure Protection Committee; and Co-Chair, State Emergency Management Coordinators Committee. Ms. Levering is adjunct faculty to UNLV's Executive Master of Science in Crisis and Emergency Management program, teaching the Community Preparedness course since 2007. Ms. Levering also serves as President of the International Association of Emergency Managers USA - Region IX.

FEDERAL CO-CHAIR

Ray Mollers

**Emergency Medical Services
Program Manager, Office of
Health Affairs, Department of
Homeland Security**

Ray Mollers is an EMS Program Manager for the DHS OHA, Workforce Health and Medical Support Division, Medical First Responder Coordination Branch. He is responsible for projects such as developing the Model Interstate Compact for EMS Personnel Licensure Portability, addressing EMS domestic preparedness gaps, and coordinating with the federal interagency, state and local officials, and non-governmental organizations on EMS issues.

Before joining OHA, Mr. Mollers served as a Senior Security Specialist for the DHS Office of IP, Emergency Services Branch, where he was responsible for developing, managing, and coordinating all federal activities related to implementing protective and resiliency program strategies for ensuring the security of Emergency Services Sector critical elements as required in the National Infrastructure Protection Plan. In addition, Mr. Mollers has served as a Senior Military Analyst for DHS IP, Homeland Security Infrastructure Threat and Risk Analysis, Critical Infrastructure Red Team and also as a Medical Advisor for the U.S. Coast Guard's Counter Terrorism program. Mr. Mollers holds a health science degree from Campbell University and he is a Retired U.S. Army Special Forces Medic/Nationally Registered Emergency Medical Technician Paramedic.



PHOTO COURTESY OF BOCA RATON (FL) POLICE DEPT

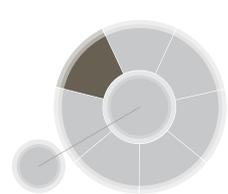


PHOTO COURTESY OF DC FIRE & EMS



T&E

TRAINING
& EXERCISES
SUBGROUP





T&E

TRAINING & EXERCISES SUBGROUP



STATE & LOCAL CO-CHAIR

ED DADOSKY
Cincinnati (OH) Fire Department

FEDERAL CO-CHAIR

CAROL MINTZ
*Department of Homeland Security, Federal
Emergency Management Agency, National Training
and Education Division*



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 regarding training and exercise doctrine, standards, and guidance developed specifically for the responder community.



PHOTO COURTESY OF DHS

ROLES AND FUNCTIONS

- Advocate performance improvement needs or requirements related to DHS/FEMA Emergency Support Functions that could be addressed by applying using T&E initiatives.
- Provide subject matter expertise to support developing T&E programs.
- Advocate 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 developing and assessing 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 T&E 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.

MEMBERSHIP

ARMANDO BEVELACQUA

Valencia Community College

RICHARD BROOKS

Cecil County (MD) Department of
Emergency Services

TRACY FRAZZANO

Montclair (NJ) Police Department

JAY HAGEN

Seattle (WA) Fire Department

BENJAMIN HAMILTON

CTTSO Technical Support Working Group

JOHN INCONTRO

City of San Marino (CA) Police Department

CARL MAKINS, JR.

Charleston County (SC) Sheriff's Office

MARTYN NEVIL

Pennsylvania Emergency Management
Agency

GREG NOLL

South Central (PA) Regional Task Force

JEROME POPIEL

U.S. Coast Guard, 9th District

JAMIE TURNER, III

Clayton (DE) Fire Company, International
Association of Emergency Managers

CYNTHIA VANNER

Rhode Island Department of Health,
Bioterrorism Response and Special
Pathogens Laboratory

ROY WAUGH

Snohomish County (WA) Fire District #7

BRIAN WHITE

Federal Bureau of Investigation, Technical
Hazards Response Unit

WAYNE YODER

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

SUBJECT MATTER EXPERTS

BARBARA BIEHN

CTK Consulting

THOMAS BRANDON

Department of Homeland Security, Domestic
Nuclear Detection Office

PAM L'HEUREUX

IAEM Representative

TONY MUSSORFITI

Fire Department, City of New York (FDNY)
(Retired)

JEFF PETERSON

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

JAMES REMINGTON

National Institute of Health, National Institute
of Environment Health Services

EUGENE RYAN

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



INITIATIVES AND PROGRESS

The IAB membership and federal partners recognize a crucial need exists for guidance regarding 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 2015:

- Provided input to the National Fire Academy and Dugway Proving Grounds regarding developing training and lessons learned support materials related to the Operation Jack Rabbit II catastrophic release project in support of the Transportation Safety Administration and the Technical Support Working Group (TSWG).
- Provided technical review and assistance to DHS, S&T on developing and beta testing the First Responder Simulation Project.
- Refined the recommended practice for equipment training, which was a key element of the best practices white paper previously developed in cooperation with ESG. The SCSG included this item in the annual standards survey and ASTM is now developing a consensus standard. When a standard is developed, it will include guidelines for evaluating manufacturer- and vendor-provided training to ensure that it effectively meets user needs, and is intended to assist purchasers in becoming educated consumers of manufacturer- and vendor-provided training for equipment acquired from the Approved Equipment List (AEL)/ Standardized Equipment List (SEL). The white paper leading to an eventual consensus standard remains available on the IAB website (www.interagencyboard.org).
- Continued developing a web-based tool to assist response organizations in selecting models, simulations, and simulators. The e-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 e-tool is available on the IAB website (www.interagencyboard.org) in the IAB documents section. The e-tool will continue to be updated on the website.
- Provided input to the SCSG on developing, adopting, and implementing appropriate and relevant training standards.

- Continued outreach to the emergency response, NFPA, hazmat, and WMD community, including participation in several conferences such as CTTSO/TSWG.
- Completed the Law Enforcement PPE Standards and Training process, as requested by the National Institute of Justice.

ONGOING COMMITMENTS

- Continue to be a national, interdisciplinary sounding board for T&E needs, doctrines, and programs. This task is essential to focus funding and resources on relevant T&E programs.
- Provide input on developing, adopting, and implementing appropriate and relevant T&E standards and requirements.
- Enhance responder safety by sustaining information programs pertaining to 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 for T&E.
- Coordinate with the respective IAB SubGroups to identify the minimal, moderate, or extensive training requirements needed for operator training.

PRIORITIES FOR FY 2016

- Analyze the process and trigger points by which incident/exercise lessons learned and after-action reports can be leveraged to better identify training gaps, and more effectively impact future training programs. This includes sustaining relationships with Department of Defense and both public- and private-sector initiatives already existing in this area. Begin implementing additional phases of the Training Triggers program.

- Continue developing and refining the modeling, simulations, and simulators e-tool (<http://www.interagencyboard.org/publications/mss/mss-etoole-home>). In phase two, the tool will provide users with example scenarios and/or tasks and links to the most appropriately related technology. In phase three, the tool will allow vendors to enter information regarding their particular technology solution(s) based on the questions previously developed for purchasers to ask. Purchasers will also be able to rate how well a technology solution worked in their particular situation.
- Address the requirements of the FACC as they relate to the T&E mission.
- Continue working with other SubGroups and develop a survey to gather emerging T&E needs from the broader response community.

LONG-TERM INITIATIVES

- The process of providing advice on relevant and successful responder-focused T&E programs is ongoing, driven by capability, technology, and personnel. The T&E SubGroup will identify and prioritize T&E requirements based on these factors and ideas generated using a comprehensive SubGroup survey.
- The T&E SubGroup will work closely with all other IAB SubGroups to identify existing standards to determine individual competency-based and organizational capability-based training. Where standards do not exist, the SubGroup will advocate for their establishment.
- Publish training trigger papers based on energy issues within the response community (<http://www.interagencyboard.org/publications/documents>).

RECOMMENDATIONS & ENDORSEMENTS

- The T&E SubGroup strongly recommends that all emergency responder equipment purchased include the initial and sustainment training requirements for applying, operating, caring for, and maintaining 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, 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. Exercises serve to validate plans and training, and as such, are a critical component in the cycle of preparedness.



PHOTOS BY BEVERLY JENSEN | BEVERLYGALLJENSEN.COM



PHOTO BY KATIE WOODRING | WWW.KATIEWOODRING.COM

STATE & LOCAL CO-CHAIR

Ed Dadosky

**Assistant Fire Chief,
Cincinnati (OH) Fire Department**

Ed Dadosky serves as an Assistant Fire Chief (AC) responsible for training within the Cincinnati Fire Department. AC Dadosky also leads the Internal Investigations and Human Resources Bureau for the department. He coordinates emergency management activities for the City of Cincinnati and serves on the Hamilton County Emergency Management Executive Committee. AC Dadosky is the homeland security grants coordinator for Cincinnati, including for the Urban Area Security Initiative (UASI), State Homeland Security Grant Program, and the Port Security Grant Program.

AC Dadosky began his career with the Cincinnati Fire Department in 1984, became a paramedic in 1995, and a State of Ohio Commissioned Police Officer in 2001. AC Dadosky holds a BA in business management from the University of Cincinnati, and a Master's in Security Studies from the Naval Postgraduate School located in Monterey, Calif.

FEDERAL CO-CHAIR

Carol Mintz

**Department of Homeland
Security, Federal Emergency
Management Agency, National
Training and Education Division**

Carol Mintz serves as a Training Program Specialist with DHS/FEMA NPD, where she is responsible for multiple grants, contracts, and programs. The grants and contracts fund training for state, local, territorial, and tribal first responders, emergency managers, elected and appointed officials, and the private sector. In addition, she serves in the National Response Coordination Center during national disasters and was a Brookings Fellow.

Ms. Mintz has experience in the private sector, where she served as Director of National Training for a private firm. She previously served as a hazardous materials specialist for the International Association of Fire Fighters and as a government liaison representing the interests of businesses and local governments in Washington, D.C. Ms. Mintz holds an M.S. from Cleveland State University and a B.A. from John Carroll University. She served on the Governor's Task Force on Homeland Security in Ohio and on the board of several nonprofit organizations.



PHOTO COURTESY OF WEST COUNTY FIRE & EMS

SP

SPECIAL PROJECTS

In 2014, the IAB formed Special Project Groups focused on key and current first responder issues. Each group is comprised of members and SMEs from each of the IAB SubGroups and is managed by a Lead and Co-Lead. IAB Members and SMEs have the choice to sign-up for the project group that most fits their interests and expertise. Each project group has its own timeline, deliverables, and outcomes. Once a project has been completed, it will be replaced with a new project.

BIOWATCH

*Lead: **Robert Ingram**, Branch Chief of WMD/FDNY, SPSG*
*Co-Lead: **Daniel Murray**, Seattle (WA) Fire Department, S&T*

The IAB BioWatch working group members have been addressing tasks submitted by the Department of Homeland Security (DHS), Office of Health Affairs (OHA) and accepted by the federal and local leadership of the IAB. The group has reviewed and submitted comments on the Draft Phase 1 Environmental Sampling Plan, the Draft BioWatch Consumables List of Equipment, and the Training Package currently being field tested by DHS OHA personnel.

PARTICIPANTS

Russell Flick, SME
Alex Garza, HMRS
Dario Gonzalez, HMRS
Jay Hagen, T&E
Jeff Race, HMRS
Tim Rehak, SCSG
Cindy Vanner, T&E
Michael Walter, FACC

PHOTO COURTESY OF DC FIRE & EMS

Efforts to date have been successful; the draft products have been submitted for comments and reviewers have participated in discussions to provide feedback. The goal of standardizing programs across jurisdictions is an important one, and the documents are important milestones towards reaching that goal.

Just-in-time training was emphasized by the BioWatch working group in early discussions surrounding program standardization. This is seen as a critical component in Phase I Environmental Sampling, and warranted based on the low frequency of actual sampling currently being conducted. The BioWatch Training Program currently addresses many of the training requirements necessary to standardize the process nationally. The working group will continue to provide comments as further discussion identifies the need.



SPECIAL PROJECTS

ENHANCED LE, FIRE & EMS RESPONSE CAPABILITIES

Lead: **Jeff Dulin**, Charlotte (NC) Fire Department (Ret.), IAB Deputy Chair
Co-Lead: **Tracy Frazzano**, Montclair (NJ) Police Department, T&E

PARTICIPANTS

Roy Boyd, IM&C
Richard Brooks, T&E
Jim Cronkhite, IM&C
Jim Czarzasty, HMRS
Stephen Davis, SPSG
Donald Denning, S&T
Vincent Doherty, S&T
Pat Gleason, SCSG
Randy Griffin, HMRS
Tony Mussorfiti, T&E
Milt Nenneman, S&T
Martyn Nevil, T&E
Greg Noll, T&E
Pierre Poirier, SME
Frank Pratt, HMRS
Jeff Race, HMRS
Dan Schultz, SPSG
Jim Schwartz, SPSG
Lawrence Tan, HMRS
Mary Ann Veitch, HMRS
Brian White, T&E
Chris Wright, IM&C

The Enhanced Law Enforcement, Fire, and EMS Response Capabilities project was formed to review and develop guidelines and recommendations for joint operation events. The project group's efforts culminated in the publication of the *Integrating Law Enforcement, Fire, and Emergency Medical Services during Active Shooter / Hybrid Targeted Violence Incidents* paper. This paper was the first phase of an ongoing, multi-faceted project. In early 2015, an Active Shooter Summit was held to assemble professionals across disciplines to identify best practices currently being deployed during joint response events. The Active Shooter Summit and its resulting conclusions sprang largely from the initial work of this special project. The Summit was held in Charlotte (NC) and included participation from 12 U.S. cities and London. A second Summit is planned for early 2016 to take the project further and help develop an expanded goal for planning for these types of events in which Law Enforcement, Fire and EMS need to work together to respond appropriately.



FIRST RESPONDER OF THE FUTURE

Lead: **John Delaney Jr.**, Arlington County (VA) Fire Department, IAB Chair

PARTICIPANTS

David Bernzweig, ESG
Duane Caneva, HMRS
Amy Donahue, SPSG
Tim Dorsey, ESG
John Esposito, SPSG
John Garofolo, IM&C
Jared Goff, SME
Benjamin Hamilton, T&E
Elizabeth Harman, SME
Mark Hill, SME
Nathan Hiner, SME
Kevin Hogan, SME
John Incontro, T&E
David Isaacson, IM&C
Donald Lapham, FACC
Philip Mattson, FACC
Tony Mussorfiti, T&E
Joe Namm, ESG
Milt Nenneman, S&T
George Perera, IM&C
Reed Smith, HMRS
Steve Stein, SME
Jeff Stull, ESG

PHOTO (C) MATT CHESIN
WWW.MATTCHESIN.COM



The purpose of the First Responder of the Future Project is to develop a single document that describes and explains the capabilities first responders—including fire fighters, police officers, and emergency medical technicians—should have 20–25 years in the future. The vision was developed within the IAB, by a cross section of field practitioners and subject matter experts in various first responder support fields. The vision details overarching capabilities that first responders should have, but does not try to determine, nor influence, how those capabilities are achieved. Ultimately, the IAB hopes to influence research and development such that, greater collaboration, coordination and prioritization toward a single vision occurs in all areas of emergency services capabilities development.

The DHS Science and Technology (S&T), Responder Technology Alliance, led by the Pacific Northwest National Laboratory, is working in partnership with the IAB to bridge the gap between vision, technology development, and transition of technology into the commercial market. Many IAB members have participated in Future Responder Visioning Workshops in Boston, Seattle, and San Francisco as well as technology prototyping workshops in Boston and New York City. Technology prototypes are being developed with input from IAB members to influence technology developers and industry to provide integrated, innovative technology. This partnership will ensure that first responder needs and challenges are driving the technology development and integration and ensures that technology developers and suppliers have access to responders for prompt testing and evaluation before moving to manufacturing solutions.

MASS FATALITY MANAGEMENT (MFM)

*Lead: **Michelle Royal**, Homeland Security Studies and Analysis Institute, SPSG*

The Defense Support of Civil Authorities, Office of the Assistant Secretary of Defense (OASD) [Homeland Defense & Global Security] requested support of the IAB in their efforts to develop a capabilities-based assessment for mass fatality management. Defense Support of Civil Authorities is the process by which U.S. military assets and personnel can be used to assist in missions normally carried out by civil authorities. A mass fatality incident is a likely example of where military assets might be called on to support emergency response operations. OASD requested IAB input on two documents: the Department of Health and Human Services (HHS) Fatality Management Concept of Operations (CONOPS) and a Performance Work Statement for the OASD's capabilities-based assessment. IAB members provided input on fatality management requirements, existing and needed response capabilities, and existing and needed legislation and policies. During the final meeting of the MFM Special Project group, members proposed two follow-on efforts to continue IAB support for this critical topic.

PARTICIPANTS

***Roy Boyd**, IM&C
Brent Boydston, SME
Kelly Burkholder-Allen, HMRS
Trent DePersia, IM&C
Renee Funk, HMRS
Randy Griffin, HMRS
Walt Kaplan, IM&C
Lisa Lanham, ESG
Matt McLaughlin, SCSG
Carol Mintz, T&E
Jamie Turner, T&E
Thomas Walsh, HMRS
Brian Washburn, SCSG
Herbert Wolfe, HMRS*

PHOTO COURTESY OF DC FIRE & EMS



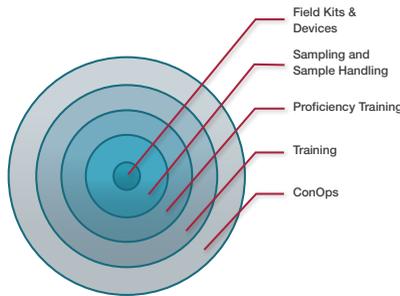
NATIONAL BIOTERRORISM EMERGENCY RESPONSE STRATEGY

Lead: **David Ladd**, Massachusetts Department of Fire Services, S&T

Out of a necessity to bring together various standards and align incomplete mission definitions, the National Bioterrorism Emergency Response Strategy Special Project was launched at the request of DHS' S&T Directorate. S&T continually provides funding for various standards development projects without seeing them result in a nationally accepted capability.

The objective of the Strategy project is to provide policy makers with a roadmap of how to: translate various projects into a consistent mission; provide a common response capability that is accepted by all stakeholders; and carry

out projects across the country using accepted standards. Years of deliberations have resulted in a common understanding of the elements of a bioterrorism strategy, but no previous project has had the breadth of objectives to describe how the elements come together. Such is the mission of the National Bioterrorism Emergency Response Strategy. By developing a deliberate document, the project will result in a series of recommendations to align standards and, meet currently unmet needs. Both IAB members and non-IAB participants are lending their wide and diverse experience and expertise to the effort, ensuring the maximum possible inclusivity in developing recommendations.



PARTICIPANTS

Rachel Bartholomew, SME
Cindy Bruckner-Lea, SME
Matthew Davenport, SME
Stephen Davis, SPSG
Bill Deso, S&T
Len Edling, IM&C
Cheryl Gauthier, SPSG
Karen House, SCSG
Bryon Marsh, S&T
Kenneth Mead, HMRS
Rich Ozanich, SME
Sherry Reichow, SME

PHOTO COURTESY OF SEATTLE (WA) FIRE DEPT.



GUIDANCE FOR NON-LAW ENFORCEMENT BALLISTIC PROTECTION

*Lead: **Ray Mollers**, DHS Office of Health Affairs Medical First Responder Coordination Branch, SPSG*

*Co-Lead: **Steven Townsend**, Carrollton (TX) Fire Rescue, ESG*

Various emergency response disciplines and distinctly different departments are integrating and operating together during expanded response activities like active shooter type events. With these types of expanded response activities, not only do law enforcement personnel require appropriate protection (which the National Institute of Justice has published) so too do all responders who enter high-risk areas. Across the US, jurisdictions are continuing to better prepare for and respond to such incidents, with Emergency Medical Services (EMS) and Fire Department personnel having a more defined role in the response. Now more than ever, many of these jurisdictions are considering using ballistic protection, especially in jurisdictions where first responders enter increased threat zones.

Therefore, the mission of the Ballistic Protection group is to author “Guidance for Non-Law Enforcement Use of Ballistic Protection,” which will provide recommendations regarding the appropriate ballistic protection, for the level of threat that non-law enforcement providers may face when responding to active shooter type events.

The “Guidance for Non-Law Enforcement Use of Ballistic Protection” Special Project group has drafted and continue to develop two documents:

1. A decision matrix on whether to use ballistic protection in active shooter type event response
2. Recommendations for selecting ballistic protection for non-law enforcement personnel



PARTICIPANTS

Eric Ashburn, ESG
Ken Brennan, S&T
Richard Brooks, T&E
Rich Bytner, ESG
Len Edling, IM&C
Eric Imhof, ESG
Robert Kinsler, SCSG
Arturo Mendez, SPSG
Adam Miller, S&T
David Otterson, SCSG
Nick Roberts, SCSG
Debra Stoe, FACC
Mike Witteveen, S&T

(C) MATT CHESIN | WWW.MATTCHESIN.COM

RESOURCE ALLOCATION FOR PUBLIC SAFETY IN THE 21ST CENTURY

Lead: **Thomas Nolan**, Upper Merion Township (PA) Police Department, SCSG

Co-Lead: **Cassandra Robinson**, National Institute of Standards and Technology, SCSG

PARTICIPANTS

Gary Backous, SCSG
Edward Bailor, ESG
Barbara Biehn, T&E
Sandy Bogucki, HMRS
Richard Brooks, T&E
Richard Burton, HMRS
Richard Bytner, ESG
Cris Caldwell, SCSG
Trent DePersia, IM&C
Craig Dickerson, SCSG
Jeff Finn, SCSG
James Furlo, FACC
John Incontro, T&E
Patricia Knudson, SCSG
David McBath, SPSE
Michelle Nuneville, SME
George Perera, IM&C
Chris Pittman, IM&C
Nicholas Roberts, SCSG
Kari Scantlebury, HMRS
Margaret Sobey-Santos, FACC
Dave Tafaoa, S&T
Marcie Wacker, SCSG
Brian Washburn, SCSG

In 2014, media began using the term “militarization of police,” negatively portraying law enforcement in terms of appearance, equipment, and professionalism. The IAB responded with a white paper to provide a balanced perspective to these assertions.

Since the 1960s, criminal incidents involving the use of high-powered weapons have increased across the U.S., resulting in law enforcement requiring specialized equipment to keep pace. The greatest challenge in obtaining specialized equipment is not availability; instead, it is cost. Funding for law enforcement is limited; therefore, much of their equipment is provided through federal grant funding and the Department of Defense 1033 Excess Property Program.

On January 16, 2015, Executive Order 13688 was issued calling for the establishment of a Law Enforcement Equipment Working Group to ensure that controlled equipment acquired by law enforcement is appropriate for the needs of the community and complies with civil rights requirements. The IAB contacted the working group and was able to provide the local law enforcement perspective and an offer of assistance.

The IAB white paper recommended that policies, procedures, best practices, and minimum training requirements be established to facilitate effective and safe utilization of equipment provided through federal programs.

PHOTO COURTESY OF JOHN STRICKLER,
THE MERCURY



UNMANNED AERIAL VEHICLES (UAVS)



*Lead: **Craig Adams**, Los Angeles (CA) Police Department, S&T
Co-Lead: **Michael Marino**, Prince George's County (MD) Fire/
EMS Department, ESG*

The UAVs Special Projects group has the objective of helping to facilitate rapid implementation of unmanned aerial technology into the national airspace in a timely manner to further the mission of first responders. The group's stated objectives and work flow are guided by the following:

- Support sensible policy that allows for the safe and timely integration of UAVs into the national airspace while balancing the interests of first responders and other stakeholders (Federal Aviation Administration, etc.)
- Highlight issues especially important to first responders, in the areas of unauthorized encroachment into first responder flight operations and counter UAV strategies.
- Facilitate targeted messaging about the effectiveness of UAVs and their ability to maintain mission success while decreasing line of duty deaths or injuries.
- Advocate an emergency services classification for UAV (micro) which is weight-based and tied to standard test methods used for optimization within the first responder environment.
- Emphasize that the emergency services environment for UAVs possesses special needs inherent to the first responder community as opposed to commercial or industrial usage.
- Be a repository for research and best practices for UAVs to support policy making and purchasing decisions by the first responder community.
- Ensure SEL aligns with current UAV platform/technology.

PARTICIPANTS

***Leif Anderson, IM&C**
Tom Brandon, T&E
Richard Bytner, ESG
Jerald Dawkins, IM&C
John Donnelly, S&T
Don Hewitt, ESG
Mark Hogan, IM&C
Carolyn Levering, SPSP
Christopher Lombard, IM&C
Carl Makins, Jr., T&E
Milt Nenneman, S&T
Pierre Poirier, SME
Robert Ricker, IM&C
Daniel Schultz, FACC
Michael Smith, SME
Robert Tuohy, SPSP
Doug Wiedman, IM&C*

PHOTO BY BEVERLY JENSEN

FIRE RETARDANT CHEMICALS AND FIREFIGHTER CANCER RATES

*Lead: **Joseph Booth**, LSU Stephenson Disaster Management Institute, IAB Deputy Chair*

After the IAB became aware of ongoing research building on first responder cancer rates, they formed a Special Projects group to initially examine the cancer rates of fire fighters, and the carcinogenic effects of exposure to flame retardant chemicals—particularly when they are burned. The scope of the group broadened to include all first responders and exposures to carcinogenic compounds of all types that responders may encounter at fire incidents.

The group has had several meetings and has collected a large amount of information, including recently released studies. The group has also heard from subject matter experts and enlisted their participation in building-up the body of research indicating a higher cancer rate in first responders.

The group will publish a report that notes the higher cancer rates of first responders as identified in the research by various university, government, and other credible entities. The report will also note and examine various programs already in place that manage detecting and mitigating exposure risks for cancer in first responder communities. The group expects to publish at least a first draft this calendar year.

This effort will likely not consist of a single publication as the risk is not one that has a simple solution, and the full measure of the threat is not yet known. This group may continue to monitor the research and implementation of detection and mitigation programs. The group also intends to compile a compendium of research and resources for the first responder community, and provide a cross disciplinary advocacy for effective measures to recognize and reduce the risks and incidence of cancer for the nations' first responder community.

PARTICIPANTS

Gary Backous, SCSG
Christina Baxter, FACC
David Bernzweig, ESG
Don Bowers, IM&C
Gregory Cade, SCSG
Caoimhín Connell, HMRS
Steven Corrado, SCSG
Vincent Doherty, S&T
Rich Duffy, ESG
Gerard Fontana, S&T
William Haskell, FACC
James Remington, T&E
Roy Waugh, T&E
Douglas Wolfe, ESG

PHOTO COURTESY OF DC FIRE & EMS





PHOTO COURTESY OF BEVERLY JENSEN | BEVERLYGAILJENSEN.COM



PHOTO COURTESY OF THOMAS BRANDON



PHOTO COURTESY OF DC FIRE & EMS

SEL

SUMMARY



PHOTO BY KATIE WOODRING | WWW.KATIEWOODRING.COM

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 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.interagencyboard.org. Until recently, the most current SEL was distributed on CD-ROM in conjunction with the IAB Annual Report. However, several factors led to the reevaluation of that strategy:

- The increasing reliance on, and almost universal availability of Internet-based reference
- The fact that due to the dynamic nature of SEL information, the CD-ROM version was almost always outdated by the time it was published
- Improvements to the interactive online SEL.

Using the online SEL as the sole reference copy not only provides the community with the latest information, but also decreases the production and distribution cost of this annual report. 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.

SEL SUMMARY

THE IAB EQUIPMENT SUBGROUP (ESG)

The IAB's ESG has sole responsibility for maintaining and publishing 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 the continuation of the SEL.

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 FEMA's Grant Programs Directorate (GPD). 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). 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. Content alignment is maintained by designated GPD representatives and the IAB ESG through a continuing collaborative process.

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. Cybersecurity 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
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, all items associated with the NFPA 1994 standard will have the category “CB”.

88 is the numeric subcategory. For example, within the Personal Protective Equipment 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 personal protective equipment section uses the item identifier “HHAT.”

2015 CHANGES

The 2015 SEL includes 727 items, 69 of which have been changed or added in this edition. There were two deletions in this edition, both in the Medical section. They were pharmaceutical items for which alternatives were available with fewer side effects.

Five new items were added, two of which were added to pick up items that were already on the FEMA AEL. Those two items are marked (*) below.

- 03SF-01-FOAM: Foam, Fire Fighting
- 03SF-01-FODS: System, Delivery, Fire Fighting Foam
- 09MS-01-BAG: Bag, Personal Belongings
- 13IT-00-FEES*: Fees, Usage, for Databases Containing Terrorist or Cyber Threat Information
- 14CI-00-COOP*: System, Information Technology Contingency Operations

The net increase for 2015 is three items. The 64 changes to existing items occurred mostly in the Information Technology, Communications, and Detection sections which were updated to reflect current technology. 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:

SEL SUMMARY

CONTINUED

2015 SEL Section Impact Summary				
Section Title		Changes	Additions	Deletions
1.	Personal Protective Equipment	6		
2.	Explosive Device Mitigation and Remediation Equipment			
3.	Operational and Search and Rescue Equipment	5	2	
4.	Information Technology	16		
5.	Cybersecurity Enhancement Equipment	3		
6.	Interoperable Communications Equipment	13		
7.	Detection	12		
8.	Decontamination	3		
9.	Medical	3	1	2
10.	Power			
11.	CBRNE Reference Materials			
12.	CBRNE Incident Response Vehicles			
13.	Terrorism Incident Prevention Equipment		1	
14.	Physical Security Enhancement Equipment	1	1	
15.	Inspection and Screening Systems			
16.	Animals and Plants			
17.	CBRNE Prevention and Response Watercraft	2		
18.	CBRNE Aviation Equipment			
19.	CBRNE Logistical Support Equipment			
20.	Intervention Equipment			
21.	Other Authorized Equipment			

TRAINING REQUIREMENTS

Including **Training Requirements** for each SEL item began in the 2008 Edition. These requirements were developed by the Training & Exercise 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 rqt" to remind users of the 3-year recertification requirement for FBI-accredited bomb squad members.

SEL SUMMARY

CONTINUED

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 “mini-SELS” tailored to specific mission areas. They are called “Mission-Specific SubLists” (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: HAZMAT Response Teams, Law Enforcement Preventive Rad/Nuc Detection, and Law Enforcement Maritime Operations. Development and updates will continue in 2016. Current SubLists include:

HazMat: Response Team*

Law Enforcement: Aviation

Law Enforcement: Bomb Squad

Law Enforcement: Dive Team

Law Enforcement: Forensics Technician

Law Enforcement: K9

Law Enforcement: Maritime*

Law Enforcement: Mobile Field Force

Law Enforcement: Mounted Patrol

Law Enforcement: Preventive Rad/Nuc Detection*

Law Enforcement: SWAT/Tactical Team

Mass Care / Shelter

Medical: Point of Dispensing

Medical: Basic Life Support

Medical: Advanced Life Support

Medical: Tactical Emergency Casualty Care

Medical: Pre-Hospital

Medical: Hospital

Medical: Public Health

Medical: Disaster Stockpile

Mortuary Operations

Responder Safety: Infectious Disease**

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 2015

** Formerly Medical: Patient Care, Infectious Disease

SUMMARY

The 2015 SEL represents the collective efforts of the IAB 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.



(C) MATT CHESNUT | WWW.MATTCHESNUT.COM



PHOTO COURTESY OF SAFETY EQUIPMENT INSTITUTE

IAB

APPENDIX

2015 IAB RESEARCH & DEVELOPMENT PRIORITY LIST

This R&D survey was vetted through the IAB membership. The research and development items were assessed based on the following criteria: mission performance, life safety of first responders and civilians, strengthening response systems, and anticipation of purchase by communities in need.

To learn more about the IAB and survey, please visit www.interagencyboard.org.

1.	USE OF UAV SYSTEMS BY LAW ENFORCEMENT	Research and development into specific uses of UAVs by law enforcement. Research into both conventional uses and possible uses by law enforcement.
2.	NATIONAL INCIDENT COLLABORATION SYSTEM	An open source, electronic platform that collects and displays need-to-know information for response decision and management support from any and all sources that impact the emergency services sector information sphere.
3.	HIGH FIDELITY, IMMERSIVE, VIRTUAL SIMULATION TRAINING SYSTEM (HF/IVS) FOR CIVILIAN FIRST RESPONDERS	A training system using virtual reality technology which completely “surrounds” all senses (vision, hearing, touch, smell, temperature perception, proprioception) of the trainee.
4.	AUTOMATED GPS TRACKING AND UNIVERSAL SYMBOLOGY FOR LARGE AREA SEARCH EVENTS AND WIDESPREAD DISASTERS	Automated GPS tracking and data logging via smartphone or other devices with the ability to input universal symbology and download into a master system to get data picture at a disaster.
5.	DEVELOP PERFORMANCE REQUIREMENTS & TEST METHODS FOR BALLISTIC-RESISTANT BODY ARMOR FOR WOMEN	Research is needed to support the development of performance requirements and test methods for shaped (non-planar) body armor worn by women.
6.	RESEARCH INTO THE EFFECTS OF BLAST OVERPRESSURE FROM AN EXPLOSIVE DEVICE	Research is needed to address protection of a bomb technician (wearing a bomb suit) from blast overpressure caused by an explosion to include the effects on the human body.
7.	MISSION CRITICAL SECURE COMMUNICATION OVER NON-LMR NETWORKS	As LTE, WiFi and other network technologies become more ubiquitous among first responders, collaborative devices will be used to proxy mission-critical voice traffic over non-LMR networks. There is a challenge in providing security, routing, and priority of voice packets over non-LMR networks.

8.	STRUCTURAL FIREFIGHTER PPE INTERFACE IMPROVEMENTS TO REDUCE CONTAMINATION	An effort to examine the interfaces between existing firefighter PPE, specifically the coat to hood, hood to SCBA facepiece, facepiece to helmet, coat to trouser, and trouser to boot. The effort should provide tangible, actionable recommendations to modify these interfaces for better protection.
9.	ISOLATING SPECIALIZED SYSTEMS TO IMPROVE SECURITY	This effort seeks tools and technology to harden first responder systems at the end-point and during transmission, develop detective devices to identify anomalous activity network and host-based, and evaluate techniques to assist first responder IT professionals to more effectively secure the system.
10.	RESEARCH INTO IMPROVED METHOD FOR ASSESSING HELMETS FOR PROTECTION AGAINST BALLISTIC BLUNT IMPACT	Research is needed to support development of a test method to assess the performance of law enforcement helmets against behind-helmet deformation caused when a bullet strikes the helmet but does not perforate.
11.	DECONTAMINATION OF LAW ENFORCEMENT AFTER A CRIME SCENE	Guidance on when/how law enforcement personnel should decontaminate after leaving a fire scene to decrease the level of contamination and long-term effects on their health.
12.	CHALLENGES OF FILTERING FACEPIECES	Provide a disposable air-purifying, filtering facepiece respirator that provides protection to the user from infectious disease.
13.	STANDARDIZED NATIONAL TRAINING PROGRAM FOR EMERGENCY MANAGEMENT	Develop a series of terminal and enabling objectives for audiences at all levels in response, recovery and mitigation of federal disaster programs.
14.	LESS HARMFUL / SAFER AND MORE EFFECTIVE HUMAN CAPTURE AND RESTRAINT DEVICES	Police and correction officers need more effective, safer yet less harmful technologies to capture fleeing individuals as well as restrain them for prolonged periods of time. New technologies must reduce physical and psychological harm potential while increasing the safety and efficiency of law enforcement operations.

2015 IAB RESEARCH & DEVELOPMENT
PRIORITY LIST
 CONTINUED

15.	NATIONAL STANDARDIZED SUITE OF RISK ASSESSMENT TOOLS	Develop common risk assessment criteria, policies, and protocols for conducting, analyzing and disseminating information.
16.	RESEARCH INTO TEST METHOD FOR ASSESSING FRAGMENTATION PROTECTION OF BALLISTIC SHIELDS	Research is needed to support development of a test method to assess the performance of ballistic shields against fragments from an improvised explosive device.
17.	WEARABLE INTRINSICALLY SAFE MINIATURIZED MULTI-DETECTOR SENSOR PLATFORM THAT TRANSMITS DATA THROUGH INTEGRATED WIRELESS OR ANY EXISTING COMMUNICATION SYSTEM	Multiple sensors that are preferably miniaturized and wearable that can be integrated into a single platform with wireless communication capability or that can transmit data through any existing communication system.
18.	AUTOMATED CBRNE EVENT ISOLATION AND EVACUATION	Portable device and V2V (vehicle to vehicle) network application that automatically isolates a CBRNE event from civilians and provides a clear path for first responders to incident.
19.	PORTABLE (HAND-HELD), RUGGEDIZED, RAPID BIODETECTION KIT	Rapid, advanced, field-grade PCR-based technology to deliver reliable and sensitive ID and detection of biological pathogens (biothreat, food/water, and environmental); FDA approved.
20.	META-ANALYSIS OF PREVENTABLE CAUSES OF DEATH OF LAW ENFORCEMENT	A comprehensive analysis of the preventable causes of death including death by weapons and vehicles as well as wellness issues such as cardiac and cancer.
21.	INTERACTIVE SIMULATOR FOR COMMAND CENTER TRAINING (VIRTUAL PLAYBOOK)	Develop a recommended process to allow disciplines to theoretically respond to and operate at major emergencies which allow for any decision making and infrastructure protection.
22.	ONE-TIME USE TORSO COOLING UNDERGARMENT FOR SHORT DURATION OPERATIONS	Development of a non-battery powered, non-refrigerant lightweight torso cooling garment to be worn under a bomb suit or heavy ballistic vest
23.	INEXPENSIVE, PORTABLE RUGGEDIZED POINT-OF-CARE LAB TESTING DEVICE	Develop a hand-held device for point-of-care testing of bloodwork. It must be inexpensive, rugged, rapid (results < 10 minutes) and have high sensitivity/specificity of lab-based blood tests.

24.	RAPID, UNIVERSAL, BATTERY CHARGER FOR PORTABLE IN-HOME MEDICAL DEVICES	A battery charger for portable in-home medical devices that rapidly charges the back-up batteries when electricity is unavailable in the home.
25.	REDACTION OF IMAGERY FROM BODY WORN, VEHICLE, OR SURVEILLANCE CAMERAS FOR PUBLIC RELEASE	Provide technology tool to assess imagery for information and images that contains personally identifiable information that cannot be shared publicly and redact the information for public release.
26.	EFFICACY OF FUSION CENTERS AT THE LOCAL/STATE/FEDERAL LEVEL	Fusion centers have grown in size and scope; however, metrics or assessment methodologies do not exist to determine efficacy of fusion operations of products. Assessment metrics of measurement tool based on common and established criteria is needed.
27.	BODY-WORN VIDEO ANALYTICS	Create video analytics for body-worn video devices to make the devices more useable/intuitive (i.e. automatic BOLO detection, plate/ID recognition and processing, and gesture deciphering).
28.	NON-BURNING TREATMENT SYSTEM FOR ILLEGAL FIREWORKS	Develop and EPA-approved mobile treatment unit for treatment, recycle/reuse, and destruction of fireworks, other explosives, and pyrotechnics that are safe and protective of human health and the environment.
29.	DEVELOP A FULLY INTEGRATED SCBA/SEATBELT SYSTEM FOR FIRE APPARATUS	A SCBA/seatbelt that allows the firefighter to securely and safely don the SCBA while being buckled into the apparatus.
30.	DATA INTERFACE BETWEEN NEMSIS COMPLAINT, PATIENT CARE REPORTS & HOSPITAL MEDICAL RECORDS	Technology to allow for bi-directional and data-sharing of record of EMS care to follow the patient to the hospital to allow for EMS patient care reports to be accessible by hospital staff.
31.	STANDARDIZED MODEL FOR POPULATION RESPONSE TO DISASTER EVENTS	This model will represent the reactions of various segments of the populace to inputs representing the unfolding of the disaster event and the response to the disaster.
32.	SMALL PORTABLE DECON KIT FOR VIP	An inexpensive, FDA-approved for skin decon kit for use on human skin.



PHOTO BY BEVERLY JENSEN | WWW.BEVERLYGAILJENSEN.COM

COVER PHOTO CREDITS

Front cover, top to bottom:

*Fairfax County (VA) Fire and Rescue
Department*

City of Plantation (FL) Fire Department

Sarasota County (FL) Sheriff's Office

DC Fire & EMS

Back cover, top to bottom:

*Fairfax County (VA) Fire and Rescue
Department*

Firstnet.gov

Avon Protection

Matt Chesin | www.mattchesin.com



THE INTERAGENCY BOARD
1550 CRYSTAL DRIVE, SUITE 601
ARLINGTON, VIRGINIA 22202
WWW.INTERAGENCYBOARD.ORG

