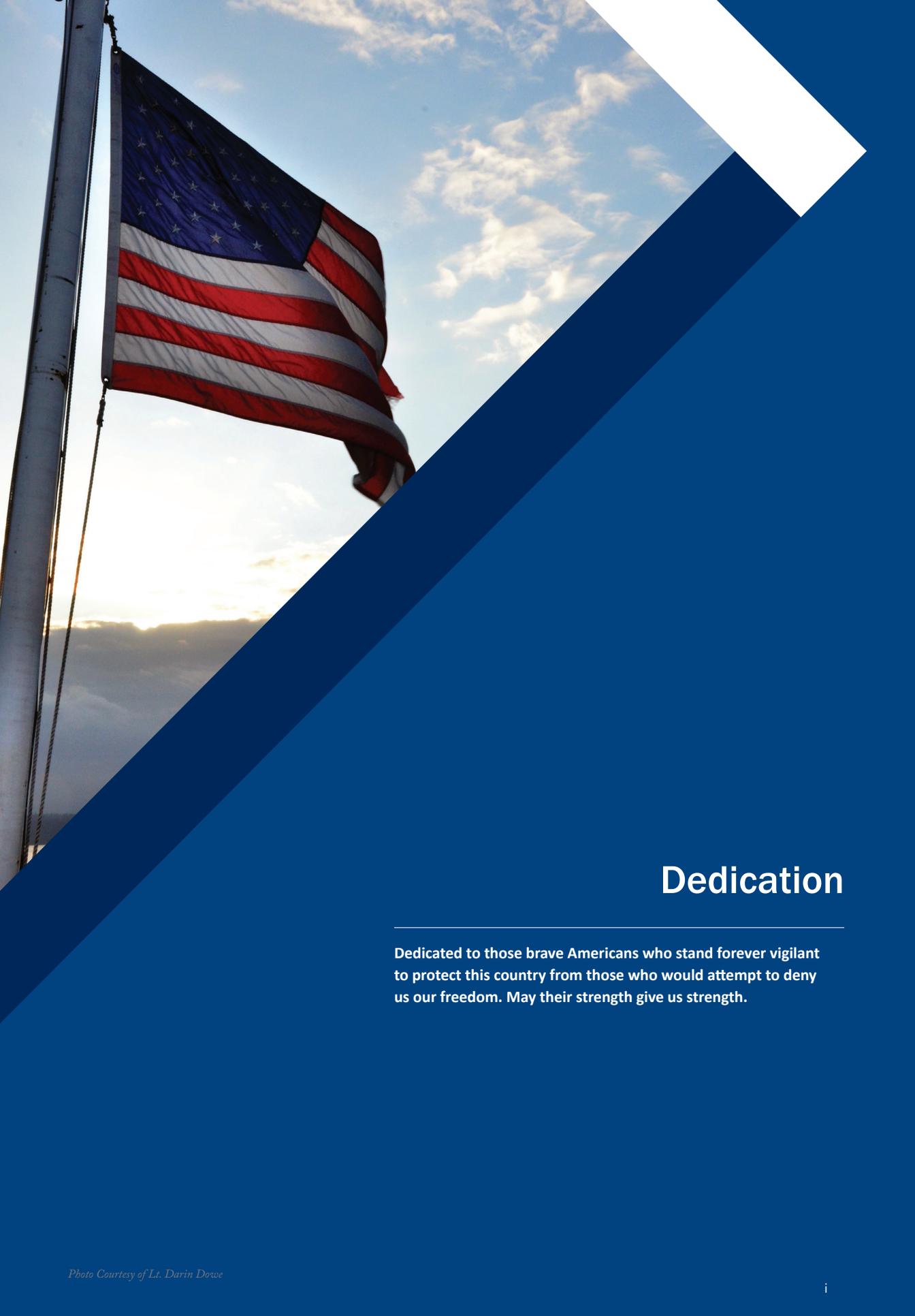




“OUT OF MANY, ONE”

THE INTERAGENCY BOARD
FY 2012 ANNUAL REPORT

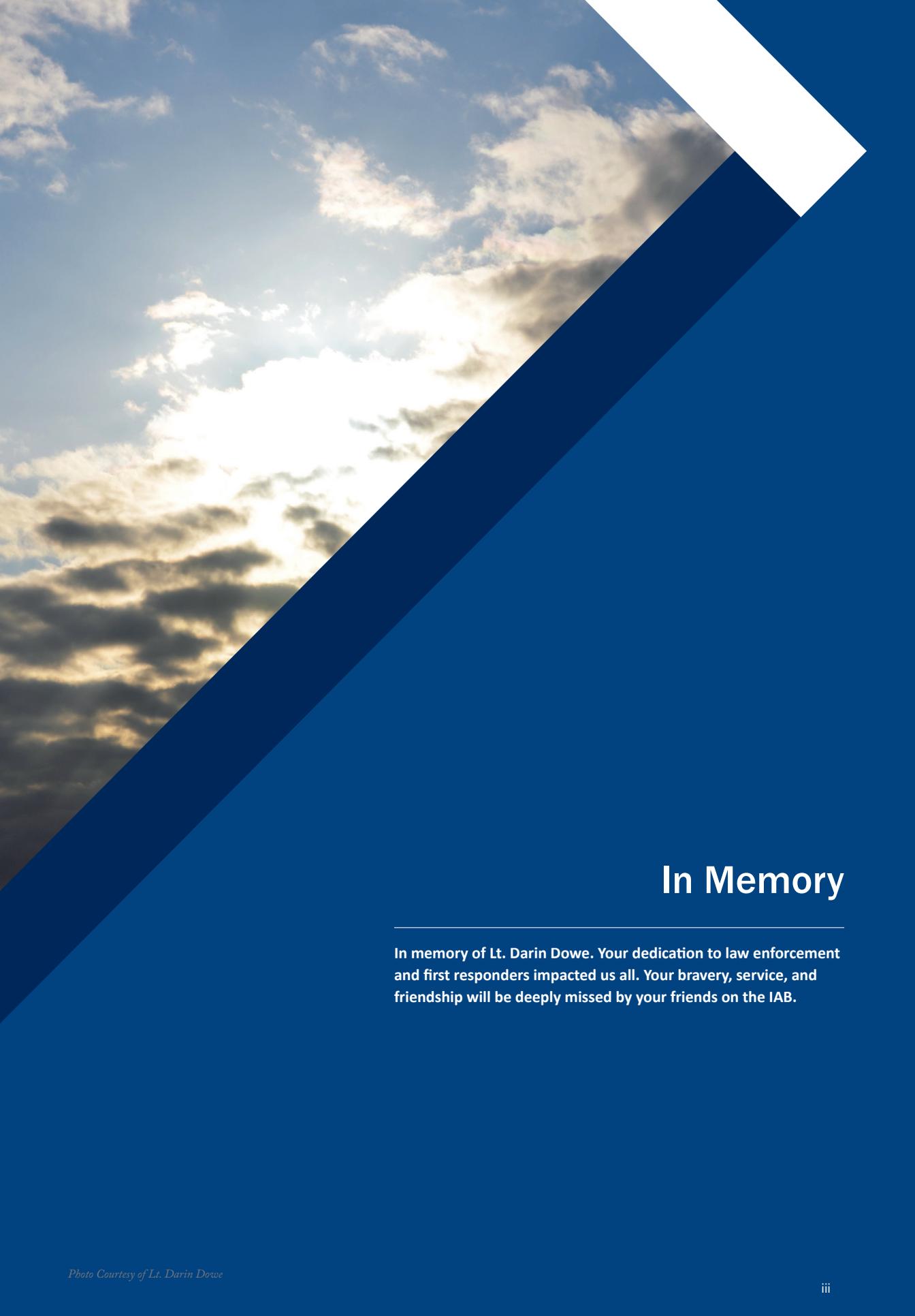


Dedication

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

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In Memory

In memory of Lt. Darin Dowe. Your dedication to law enforcement and first responders impacted us all. Your bravery, service, and friendship will be deeply missed by your friends on the IAB.

IAB Champions



Arizona State Police, Department of Public Safety - Bomb Squad
 Arlington County (VA) Fire Department
 ASTM International
 Avon (MT) Fire Department
 Bellevue (WA) Fire Department
 Branford (CT) Fire Department
 Boca Raton (FL) Police Department
 Boston (MA) Fire Department
 Broward County (FL) Sheriff's Office SWAT
 Canadian Police Research Centre
 Cecil County (MD) Department of Emergency Services
 Charleston County (SC) Sheriff's Office
 Charlotte (NC) Fire Department
 Chicago (IL) Fire Department
 Chicago (IL) Police Department
 City of Troy (MI) Police Department
 City of Tulsa (OK) Security
 Cincinnati (OH) Fire Department
 Cook County (IL) DHS Emergency Management
 Contra Costa County (CA) Office of the Sheriff, Office of Emergency Services
 Cuyahoga County (OH) Department of Justice Affairs
 Dartmouth College
 Delaware Emergency Management Agency

Department of Defense, Joint Program Executive Office for Chemical and Biological Defense
 Department of Defense, Joint Program Executive Office for Chemical and Biological Defense, Joint Program Manager Guardian
 Department of Defense, Office of the Assistant Secretary for Defense, Domestic Preparedness Support Initiative
 Department of Defense, Research, Development and Engineering Command, Edgewood Chemical and Biological Center
 Department of Health & Human Services, Assistant Secretary for Preparedness & Response, Emergency Care Coordination Center
 Department of Health & Human Services, Centers for Disease Control and Prevention
 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, Domestic Nuclear Detection Office
 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, Office of Policy & Program Analysis
 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, National Protection and Programs Directorate, Office of Infrastructure Protection, Emergency Services Sector
 Department of Homeland Security, Office of Intelligence and Analysis
 Department of Homeland Security, Science & Technology Directorate, Broadband Standards and Technology
 Department of Homeland Security, Science & Technology Directorate, Homeland Security Enterprise and First Responder Group
 Department of Homeland Security, Science & Technology Directorate, First Responder Technology Program
 Department of Homeland Security, Science & Technology Directorate, Interagency & First Responder Programs
 Department of Homeland Security, Science & Technology Directorate, Interoperability Device Standards and Technology
 Department of Homeland Security, Science & Technology Directorate, Test & Evaluation and Standards Division
 Department of Homeland Security, Transportation Security Administration



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

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

Department of Justice, Savannah River National Laboratory

Department of Labor, Occupational Safety and Health Administration

Department of Veterans Affairs

DeWitt (NY) Fire District

District of Columbia Fire and Emergency Medical Services

Environmental Protection Agency, Emergency Response

Fairfax County (VA) SWAT

Fairfax County (VA) Fire and Rescue Department

Fairfax County (VA) Police Department

Federal Bureau of Investigation, Hazardous Materials Response Unit

Georgetown University, Edmund A. Walsh School of Foreign Service

George Washington University, Department of Emergency Medicine, Emergency Health Services Program

George Washington University, Office of Homeland Security

Grand Rapids (MI) Fire Department

Homeland Security Studies and Analysis Institute

Huntingdon County (PA) Emergency Management Agency

International Association of Chiefs of Police

International Association of Emergency Medical Services Chiefs

International Association of Emergency Managers

International Association of Fire Fighters Intertek

Kent (WA) Fire Department, Kent Fire Training Academy

Lake County (FL) Fire Academy

Lawrence Livermore National Laboratory

Las Vegas (NV) Office of Emergency Management

Los Angeles County (CA) Fire Department

Los Angeles County (CA) Sheriff's Department

Los Angeles (CA) Police Department

Louisiana Poison Center

Maryland State Police, Emergency Operations Section, Special Operations Command

Massachusetts Department of Fire Services

Massachusetts Department of Public Health, Bioterrorism Response Laboratory

Merriquette Park (IL) Fire Department

Miami-Dade (FL) County Police Department

Montclair (NJ) Police Department

Montgomery County (MD) Fire and Rescue Service

Mount Erie (WA) Fire Department

Mount Weather (VA) Fire Department

National Bomb Squad Commanders Advisory Board

National Defense University

National Emergency Management Association

National Fire Protection Association

National Guard Bureau

National Guard Bureau, Civil Support Team

National Guard Bureau, Combating WMD Division

National Institutes of Health, National Institute of Environmental Health Services

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

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

National Institute of Standards and Technology, Law Enforcement Standards Office

National Sheriff's Association

Naval Postgraduate School, Center for Homeland Defense and Security

Naval Surface Warfare Center, Dahlgren Division, Mission Assurance Division

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

New York City (NY) Fire Department

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

New York City (NY) Office of Emergency Management

New York Police Department, Counterterrorism Bureau



New York State Department of Public Health, Wadsworth Center

New York State Police

Occupational Safety and Health Administration

Ohio Funeral Directors Association, Mortuary Response Team

Ohio Task Force 1, FEMA Urban Search & Rescue

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

Park County (CO) Sheriff's Office

Phoenix (AZ) Fire Department

Pineville (NC) Fire Department

Placer County (CA) Health and Human Services

Responder Knowledge Base (RKB)

Rhode Island Department of Health Laboratory

Sacramento County (CA) Sheriff's Department

Safety Equipment Institute

Salem (NY) Volunteer Fire Department

Santa Clara (CA) Sheriff's Office

Sarasota County (FL) Fire Department

Sarasota County (FL) Sheriff's Office

Savannah River National Laboratory

Seattle (WA) Fire Department

Seattle (WA) Police Department

Seattle (WA) Public Utilities

Snohomish County (WA) Fire District #7

South Carolina Law Enforcement Division

South Central (PA) Regional Task Force

Stephenson Disaster Management Institute

Technical Support Working Group, Combating Terrorism Technical Support Office

Terrorism Research Center

Underwriters Laboratories

United States Army 44th Civil Support Team

United States Army Chemical Materials Agency

United States Army Headquarters

United States Army Maneuver Support Center of Excellence (MSCoE) Joint, Interagency, Intergovernmental, Multi-National, Industry, and Academia (JIIM-IA)

United States Army Natick Soldier Center RDEC

United States Army Institute of Public Health

United States Army Research Laboratory

United States Capitol Police

United States Coast Guard

United States Department of Agriculture

United States Environmental Protection Agency

United States Fire Administration, National Fire Academy

United States Forest Service, National Interagency Incident Communications Division

United States Marine Corps System Command

United States Marshals Service

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

United States Navy, Emergency Preparedness Directorate, Bureau of Navy Medicine and Surgery

United States Northern Command, North America Aerospace Defense Command

University of Connecticut

University of Montana, College of Health Professions and Bio-Medical Science

University of Toledo, College of Medicine, Department of Public Health and Preventive Medicine

Walker County (GA) Emergency Services

Walter Reed National Military Medical Center Bethesda, Health Physics & Radiation Safety Service

Washington Metro Transit Police Department

Washington Regional Threat and Analysis Center

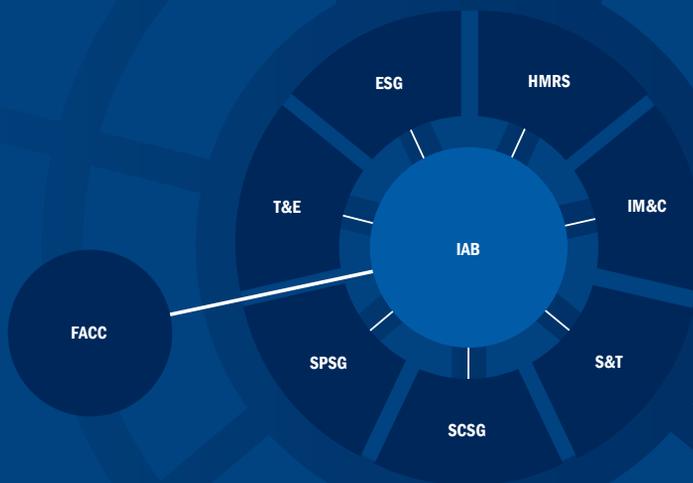
West County (MO) EMS & Fire Protection District

White House, Office of Science and Technology Policy

Yale Emergency Medicine

York County (VA) Emergency Management

Yale University, Yale New Haven Health System



The InterAgency Board

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



OUT OF MANY, ONE:

Background, Mission, Vision, Values, and Focus

Adopted by the IAB October 2008

This section articulates the background, mission, vision, values, and focus of the InterAgency Board (IAB). It serves as the basis for the IAB's ongoing strategic planning effort. This information is not static, but will evolve as the IAB's work progresses.

Background

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

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 will accomplish 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:



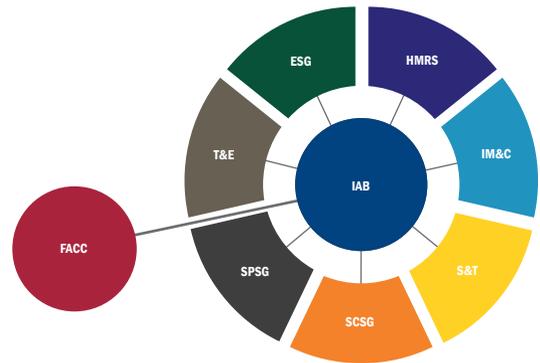
The InterAgency Board

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. It is, therefore, broad in scope and able to voice the perspectives, views, and concerns of responders nationwide without undue influence from the particular interests of any one discipline, organization, or professional association.

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

Diversity The IAB is broadly representative of professional response disciplines, sectors, and levels of government, explicitly shunning parochialism in favor of a true multidisciplinary perspective. The IAB is also wide-ranging in the size, type, and geographic location of organizations represented. This enables the diverse array of public safety professionals to come together as a unified and integrated emergency preparedness and response system.



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

IAB Organizational Chart

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 will pursue the following areas of emphasis:

1. Equipment

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

2. Health, Medical, and Responder Safety

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

3. Information Management and Communications

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

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

4. Science and Technology

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

5. Standards Coordination

- a. Identify and document applicable standards, from internal (IAB) and external sources.
- b. Recommend potential solutions in terms of standards, equipment development, training, practices, or policies.
- c. Prioritize standards requirements and related interoperability and compatibility issues.
- d. Identify existing standards, performance requirements, and test methods that could streamline the development of new standards or be modified to meet the needs of responders.
- e. Identify potential conflicting requirements and facilitate reconciliation of these issues.
- f. Participate in standards development and revision processes.
- g. Inform emergency responders about appropriate application of standards.
- h. Draft and disseminate studies, white papers, and other reports on standards, interoperability issues, and compatibility issues.
- i. Recommend and promote the adoption and use of standards.



- j. Identify and inform responders about relevant standards activities, comment periods, and programs that are addressing interoperability and compatibility issues.

6. Strategic Planning

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

7. Training and Exercises

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



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

David McBath, New York (NY) State Police

State & Local Deputy Chairs

John Delaney, Arlington (VA) Fire Department

Jay Hagen, Seattle (WA) Fire Department

Federal Agency Coordinating Committee

The FACC 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

Michael Walter, Department of Homeland Security, Office of Health Affairs, BioWatch

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 the maintenance and publication of the IAB SEL, the development of equipment-driven priorities for research and development and standards development, and the coordination with other SubGroups to ensure proper use of equipment in various mission environments.

State & Local Co-Chair

Douglas Wolfe, Sarasota County (FL) Fire Department

Federal Co-Chair

William Haskell, 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 on needs for new or modified equipment performance and operational standards.

State & Local Co-Chair

Jeff Race, City of New York (NY) Fire Department

Federal Co-Chair

Dr. Duane Caneva, Navy Bureau of Medicine and Surgery, Emergency Preparedness Directorate, Department of Defense

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 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

Leonard Edling, Merrionette Park (IL) Fire Department

Federal Co-Chair

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

The IAB is organized into a Leadership Team, one committee, and seven SubGroups. The Federal Agency Coordinating Committee is chaired by a federal representative and composed of all supporting Federal Government partner representatives. Each SubGroup is co-chaired by a state and local first responder and a federal representative, and staffed with Members and 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 2012. Elections are conducted during the summer meeting, every May/June. For the current list of IAB Leadership Team and Co-Chairs, please visit the IAB public website at www.iab.gov.

The InterAgency Board Structure

Science & Technology SubGroup

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

State & Local Co-Chair

Douglas Carley, Grand Rapids (MI) Fire Department

Federal Co-Chair

Gabe Ramos, Technical Support Working Group

Standards Coordination SubGroup

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

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

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 IAB's position, and maintains a prioritized list of organizations of interest to IAB to develop a strategic engagement plan.

State & Local Co-Chair

Mark Anderson, Bellevue (WA) Fire Department

Federal Co-Chair

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

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. T&E is responsible for identifying performance improvement needs related to operational, training, and exercise activities, and facilitating the implementation of training and exercise programs that support individual competencies and organizational capabilities.

State & Local Co-Chair

Gregory Noll, South Central (PA) Regional Task Force

Federal Co-Chair

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



DAVID MCBATH

New York (NY) State Police

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

IAB Chair and Letter from the Chair

This letter ends my two year term as the Chair of this great organization. I want to thank the membership for their trust in allowing me this opportunity, and the Deputy Chairs and Program Staff for their invaluable support. With such a great group of people to work with, success was guaranteed.

The IAB annual work-plan cycle for 2012 is complete, and this closes the second annual work-plan cycle since the revision of our by laws. The accomplishments of the past year are too numerous to list here, and are expanded upon in each of the respective SubGroup sections of this report. And while the process appears to be working well, it was again “fine-tuned” at the Executive Committee Meeting in held in Arlington, Virginia, this past September. This cycle continues to be a flexible process to insure that the changing needs of the IAB and FACC membership are being met.

As I write this letter, I look back at my two years as Chair of the InterAgency Board with a sense of satisfaction and relief. Two years ago, the federal government had started to feel the economic downturn, and the ability of the federal partners to continue their support of the IAB was in question.

Based in part on this issue, the leadership team began a series of external outreach sessions in the National Capitol Region. Many federal agencies were visited to discuss the work of the IAB and reiterate to our federal partners the importance of this work, and its impact on the first responder community across the nation. These outreach efforts proved to be a fruitful exchange of information. Through these meetings, we were able to foster new relationships and engage federal agencies who had not previously participated in the work of the IAB.

Today the IAB is strong, energized, and moving forward on their work-plan items for the new fiscal year under the capable leadership of the new IAB Chair, Deputy Chief Jay Hagen, Seattle Fire Department.

Thank you again for the opportunity to lead this great organization.

The many voices of the IAB continue to speak as one.

Sincerely,

David McBath, IAB Chair

Deputy Chair Biographies



JOHN DELANEY

Arlington (VA) Fire Department

Captain II John Delaney, Jr. has been a member of the Arlington (VA) County Fire Department (ACFD) for 14 years. Currently, his primary responsibility is team leader of the National Medical Response Team-National Capital Region (NMRT-NCR). The NMRT-NCR is a federally funded weapons of mass destruction response team comprised of over 150 fire fighters, paramedics, hazardous material specialists, law enforcement officers, doctors, and nurses from within the Washington metropolitan region.

Captain Delaney has participated in several large scale emergencies; including the 1998 Florida Wildfires, 2004 Hurricane Charley, 2001 Anthrax Attack at the Senate Office Buildings, and the September 11, 2001 attack on the Pentagon. His education and training in weapons of mass destruction, hazardous materials, and technical rescue response has allowed for contribution on numerous 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 Masters Degree in Homeland Security from the Naval Postgraduate School.



JAY HAGEN

Seattle (WA) Fire Department

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

Day to day, Chief Hagen coordinates the 7 on duty Battalion Chiefs who oversee the 1100 firefighters spread throughout the city. Also, DC Hagen oversees the administration of the highly trained and specialized Technical Teams including the Marine Emergency Response Team, the Hazardous Materials Response Team and the Technical Rescue Team.

When the President, world leaders or other dignitaries visit Seattle, Chief Hagen manages the Department's deployment of fire resources for the dignitary trips. With more than 300 special events a year, DC Hagen also supervises the largest Special Events that are attended by tens of thousands of people annually.

In 2002, Hagen graduated from the University of Montana with a dual major of organizational communications and business management. In 2006, he earned a Master's degree in Homeland Security and Defense at the Naval Post Graduate School in Monterey, California. The following year, he was selected for a Senior Fellowship at the DHS Office of Grants and Training in Washington, DC.

During his 25-year fire career, DC Hagen has served as a training division instructor, Fire Inspector, and as the Emergency Preparedness Officer. Chief Hagen also serves as the Chair of the Infrastructure Security Subcommittee for the Area Maritime Security Committee. He is currently the Chair of the Interagency Board.



IAB FY 2012 Highlights

(October 2011–September 2012)

- Published the IAB Annual Report, Research & Development Priority List, Standards Development Priority List, and the Standardized Equipment List (SEL), a voluntary guideline of equipment recommended by the IAB for preparing and responding to CBRNE and all-hazards events, linked to the DHS Approved Equipment List (AEL). The Equipment SubGroup also developed mission specific sublists for the SEL, designed to support critical responder mission areas, to include Law Enforcement (Aviation, Bomb Squad, Mobile Field Force, Dive Team, and Forensic), Medical (Point of Dispensing, Basic Life Support, Advanced Life Support, Pre-Hospital, Hospital, Public Health and Disaster Stockpile), Mortuary Operations, and Mass Care/Shelter.
- Continued to support the Canadian Police Research Center (CPRC) with the Canadian Recommended Equipment List (REL). IAB provides system and subject matter assistance in creating a parallel SEL tailored to the needs of the Canadian emergency response community.
- Produced several position papers, white papers, and briefs on pertinent first responder issues:
 - > Guidance: Recommendations for Manufacturer-/Vender-Provided Training (March 2012)
 - > Evaluation of Hazards in the Post-Fire Environment (September 2012)
- Developed the mechanisms for soliciting Standards requirements and revised process for adopting Standards. A total of 32 standards were adopted by the IAB in FY12. View the full list of adopted standards in the Standards Coordination SubGroup (SCSG) section of this report (page 59).
- IAB Leadership Team conducted outreach to current and potential federal partners to include, DHS Domestic Nuclear Detection Office (DNDO), DHS Office of Infrastructure Protection (IP), DHS S&T First Responders Group (FRG), FEMA Grant Programs Directorate (GPD), FEMA National Preparedness Directorate (NPD), DOD Office of the Assistant Secretary of Defense (OASD), DOJ National Institute of Justice (NIJ), DOT Pipeline and Hazardous Materials Safety Administration (PHMSA), Transportation Security Administration (TSA), and the U.S. Environmental Protection Agency (EPA).
- Provided support in the DHS S&T FRG Solution Development Process by identifying first responder capability gaps, ranking gaps into prioritized list, defining functional requirements for top-ranked gaps, and providing feedback and other support throughout entire technology lifecycle. Also provided virtual training SME assistance with input on virtual environment, scenario, training objectives, as well as appropriate Learning Management Systems (LMS) for FRG Virtual Training Simulation Program and Pilot.
- Provided feedback on the Presidential Policy Directive-8 (PPD-8) implementation plan.
- Contributed to the revision of American Society of Testing and Methods (ASTM) Chemical Detection and Equipment Certification Standard. Continued National Institute for Occupational Safety and Health (NIOSH), Edgewood Chemical



The InterAgency Board

- Biological Center (ECBC), and National Institute of Standards and Technology (NIST) development of standards and test procedures for all classes of CBRN respirators and continued support of standard development activities in ASTM for urban search and rescue robots. Supported work by NIST on the Vehicle Borne Improvised Explosive Device (VBIED) Robotic Standard Test Methods.
- Participated in the DHS Science and Technology Directorate market survey to gather information on the purchase potential of chemical vapor detectors (February 2012).
 - Delivered an IAB briefing focused on the Training & Exercises SubGroup mission, roles, and resources at the annual FEMA Training and Exercise Conference attended by Regional Training Managers and Regional Exercise Officers (April 2012).
 - Conducted a Training Survey to determine emergency services needs for annual hazardous materials (HazMat) and Weapons of Mass Destruction (WMD) competency testing/ refresher training provided by the fire service (April 2012).
 - Produced literature search in the functional area of information exchange and information management across civil-military domains for DOD Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD).
 - Facilitated the allowance of energetic materials for training purposes for state and local bomb squads into the FEMA Homeland Security Grant Program (HSGP) (July 2012).
 - Participated in the Joint Counter Terrorism Workshop Series (JCTAWS), a FEMA NCTC and FBI project to disseminate lessons learned from complex coordinated attacks, and provided a review document to FEMA NPD with observations, feedback, and recommendations (August/ September 2012).
 - Participated with the Emergency Services Sector (ESS) to create a cybersecurity roadmap for the sector. Also worked with the National Cyber Security Division (NCSA) on a Cybersecurity Assessment and Risk Management Approach (CARMA) assessment tool to identify common risks in the ESS.
 - Assisted with the National Institute of Occupational Safety and Health (NIOSH) CBRN Respirator Guidance Development Project.
 - Provided support to DOJ NIJ by reviewing documents and providing SME assistance for emerging issues.
 - Membership or SME participation at various conferences and working groups:
 - > Centers for Disease Control and Prevention WMD meetings
 - > DHS S&T First Responder Resource Group
 - > Emergency Response Interoperability Council Public Safety Advisory Committee (ERIC PSAC)
 - > FEMA Strategic Foresight Initiative (SFI)
 - > National Alliance of State Animal and Agriculture Emergency Programs Summit
 - > National Fire Protection Association (NFPA) Technical Committees
 - > National Homeland Security Conference
 - > NIJ Special Technical Committee
 - > NIOSH meetings
 - > Precision Personnel Indoor Location & Tracking for Emergency Responders Workshop
 - > SAFECOM Emergency Response Council
 - > Technical Support Working Group (TSWG) PPE Conference
 - > TSWG Explosives Detection Symposium and Workshop



Photo Courtesy of FDNY

National Strategy for CBRNE Standards

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

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

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

The Strategy concludes that achievement of the following goals will be key to ensuring technical

performance and interoperability of CBRNE technology, appropriate equipment deployment, and effective user training:

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

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

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



Photo Courtesy of Seattle Fire Department

The InterAgency Board Demographics

In August 2012, the IAB conducted its annual demographics survey to capture in depth information about FY12 participants. The results of the 2012 IAB Demographics Survey are show in this section.

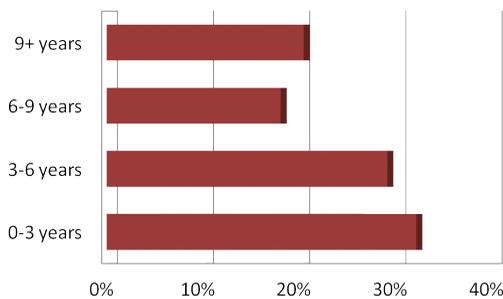
The IAB community comprises approximately 200 dedicated professionals. Roughly seventy percent of the IAB participants have first responder backgrounds. State, local, and federal responders from various disciplines, as defined by the Homeland Security Presidential Directives, are represented. These disciplines include fire service, law enforcement, medical/health, emergency management, emergency communications, military, and public

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

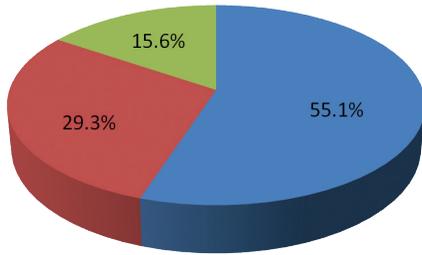
The remaining thirty percent of IAB participants provide invaluable knowledge and expertise in a wide array of disciplines. These participants represent government, academic, professional association, and information technology professional roles, among many others.

The graphics below show a detailed breakdown of the IAB community.

1. Length of Service with the IAB



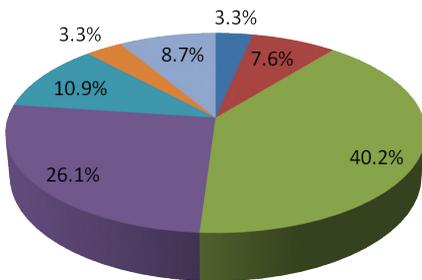
2. First Responder Status



- Active first responder.
- Not a first responder.
- Retired or discontinued service first responder.

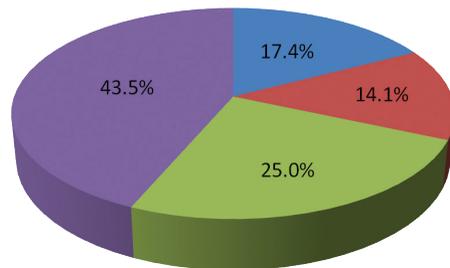
More than 2/3 of IAB participants are or have been first responders

3. Active First Responder Discipline Breakdown



- Emergency Communications
- Emergency Management
- Fire Services
- Law Enforcement
- Medical/Health
- Military
- Other

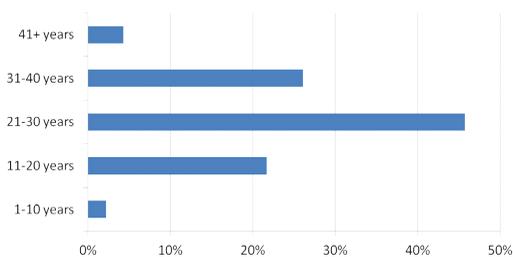
4. Active First Responder Operational Level



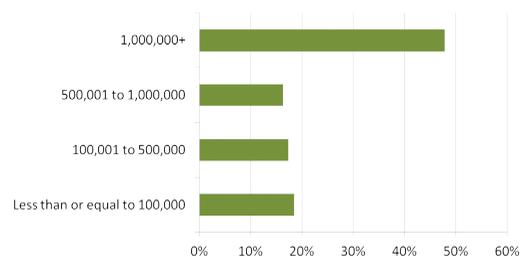
- Line Operations
- First-Line Supervisor
- Mid-Grade Supervisor
- Executive Level

*Other includes: Mortuary Services, Special Operations, Geospatial Management, Homeland Security Emergency Management

5. Active First Responder Length of Service

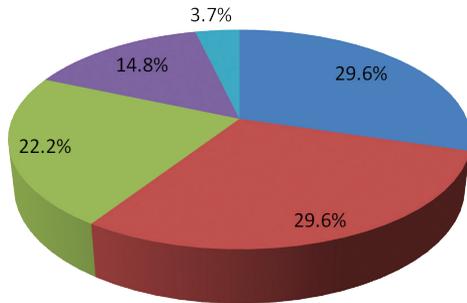


6. Active First Responder Represented Jurisdictional Size





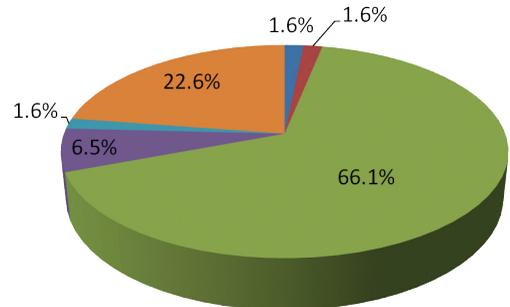
7. Retired/Discontinued First Responder Discipline Breakdown



- Fire Services
- Law Enforcement
- Medical/Health
- Military
- Other

*Other includes: Hazardous Materials and Weapons of Mass Destruction

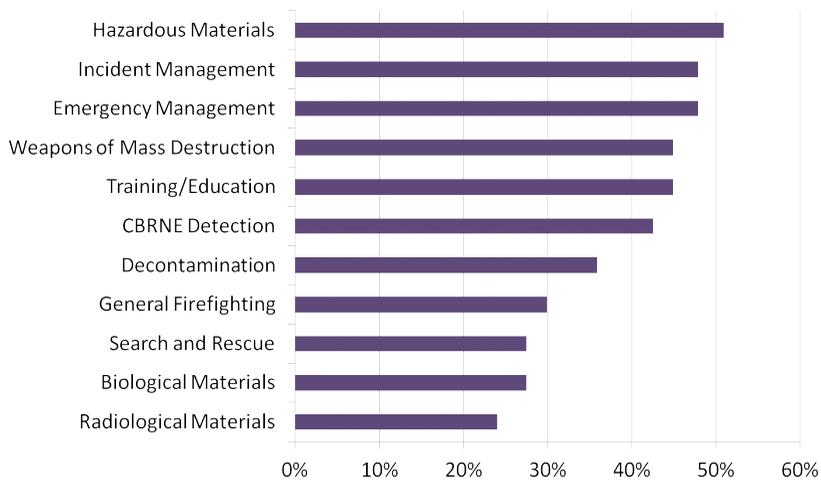
8. Non-first Responder Primary Professional Role Discipline Breakdown



- Academia
- Business and Industry
- Governmental
- Information Technology
- Professional Association
- Other

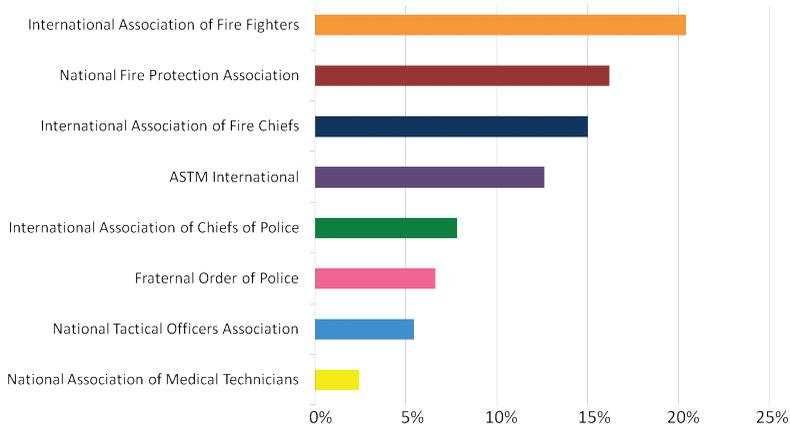
*Other includes: Biodefense, Poison Control, Counterterrorism, and Public Health Planning

9. General Areas of Expertise (Entire IAB Community)



*Others include: Pre-hospital emergency medical care, tactical operations, confined space rescue, communications, structural collapse rescue, public health, and force protection

10. Top Professional Organization Memberships



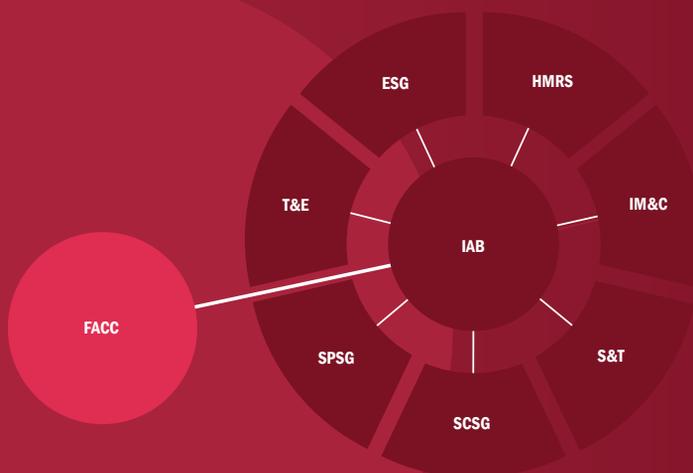
**Others include: National Sheriffs' Association, National Bomb Squad Commanders Advisory Board, American Industrial Hygiene Association, International Association of EMS Chiefs, International Association of Bomb Technicians and Investigators, and American Chemical Society*

11. IAB Participation (182 TOTAL) - State Representation (Members/SMEs)



Federal Agency Coordinating Committee

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.





Federal Agency Coordinating Committee (FACC)

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Role and Functions

The FACC provides the funding for operation of 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, DHS OHA BioWatch served as the FACC Chair of the IAB during FY 2012. The FACC Chair is elected on an annual basis.

The FACC leverages ongoing federal RDT&E efforts to meet the responder requirements as identified by the IAB. The IAB Chair, Deputy Chairs, and the FACC work together to prioritize initiatives within the IAB and the federal community. The FACC also coordinates ongoing IAB initiatives within the federal community to ensure task completion and to prevent duplication of efforts. This interagency relationship benefits both the IAB and the federal community by improving protection and response.

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

Review of FY 2012 Workplan

A critical component of the IAB strategic planning process is to set the agenda for the upcoming fiscal year. The final product of this process, referred to as the work plan, represents a formal approach to develop, plan, document, and prioritize a set of projects that meet the needs and mission of the IAB. The FACC is integral to this process. Each FACC sponsor submits a list of priorities that are vetted amongst all FACC sponsors and aligned with the SubGroup priorities, as appropriate.

For FY 2012, 17 FACC priorities were submitted by 9 member organizations of the FACC, and each was aligned with at least one SubGroup priority. Like the previous year, many of the priorities received substantial support and have moved forward as planned.



CHAIR

MICHAEL WALTER

Department of Homeland Security, Office of Health Affairs, BioWatch

Photo Courtesy of Seattle Fire Department

Ten of the priorities are considered successfully completed with the remainder categorized as medium to long term and will be carried over to next year. These successfully completed priorities include, but are not limited to, updating the list of adopted and referenced standards and the list of prioritized standards gaps; providing subject matter expertise for the First Responder Group Virtual Training Simulation Program and Pilot; contributing to a CBRNE respirator guidance development project; maintaining and advancing the alignment of the AEL and SEL and reviewing all first responder standards related to those products; and contributing to a literature search in the functional area of information exchange and information management across civil-military domains.

The federal priorities that were not completed have been carried over to the FY 2013 work plan. Reasons for priority 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.

Overall, the FACC was 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 2013.

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

As one of the founding organizations of the IAB, the DOD and the JPEO-CBD continue to support all facets and areas of the IAB. Personnel serve on the FACC, participate in the development of the overall IAB strategy, and attend IAB SubGroup and Committee sessions.

Department of Defense, Homeland Defense and Americas' Security Affairs

The Homeland Defense and Americas' Security Affairs (HD&ASA) office is responsible for policy guidance on homeland defense activities for the Department of Defense (DOD). The Assistant Secretary of Defense (ASD), HD&ASA, under the authority, direction, and control of the Under Secretary



Photo Courtesy of New Castle County Emergency Medical Services

of Defense for Policy (USD(P)), serves as the principal civilian advisor to the Secretary of Defense and the USD(P) on homeland defense activities, Defense Support of Civil Authorities (DSCA), and Western Hemisphere security matters. HD&ASA provides overall supervision of homeland defense activities of the DOD, to include the Defense Critical Infrastructure Program (DCIP); 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

The Joint Project Manager Guardian (JPMG) provides integrated capability to: vigilantly protect our homeland, deployed forces, and coalition partners; enable rapid response and mission execution; and to restore our way of life. They provide Army Installations with decision support tools to enable timely and accurate decision making, Automated Telephone Notification System, Network Alerting Systems, and Interface to Local & State Governments JPMG supports DOD WMD Response Units by providing advanced analytics, information management, communications, Commercial Off the Shelf Life Cycle Management across their portfolio, as well as protection, detection, identification, and survey and monitoring capabilities. JPMG also supports programs which field Integrated and Interoperable Physical Security/Force Protection/CBRN protection and response capability to Forward Operating Bases and

Deployable Units. As the mission space for JPMG's stakeholder community frequently intersects with the civilian responder community, support to and from the IAB are an important aspect of good business practice.

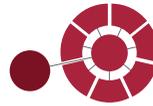
Department of Homeland Security, Federal Emergency Management Agency (FEMA)

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

Protection and National Preparedness (PNP) is comprised of the following offices and components:

- Office of the Deputy Administrator, PNP
- Office of Counterterrorism and Security Preparedness
- Office of Preparedness Integration and Coordination
- Strategic Resource Management Office
- Grant Programs Directorate
- Office of National Capital Region Coordination
- National Continuity Programs Directorate
- National Preparedness Directorate

Participation by PNP in the IAB's FACC is from both the Grants Program Directorate and the National Preparedness Directorate. FEMA's funding for the IAB in FY11 and FY12



Federal Agency Coordinating Committee

came from the National Integration Center (NIC) which is within the National Preparedness Directorate.

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

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

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

The Office of Infrastructure Protection 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 18 Critical Infrastructure Sectors. The ESS-SSA is responsible for implementing the National Infrastructure Protection Plan (NIPP), its sector partnership model and the risk management framework within the Emergency Services Sector.

Membership

DONALD C. BULEY

Department of Defense, Joint Project Manager Guardian

ELIZABETH HARMAN

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

WILLIAM HASKELL

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

SEBASTIAN HEATH

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

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 Americas' Security Affairs

PHILIP MATTSON

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

DANIEL SCHULTZ

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

MARGARET SOBEY

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

DEBRA STOE

Department of Justice, National Institute of Justice

RICHARD VANDAME

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

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

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

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

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

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

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

The DHS S&T Directorate serves as the primary R&D arm for the Department. The Directorate's mission is to improve homeland security by providing its customers—the operating components of DHS and state, local, tribal, and territorial emergency responders and officials—state-of-the-art technology that helps them accomplish their missions. DHS S&T manages an integrated program of science and technology, from basic research to product transition, guided by a risk-diverse, multitiered invested strategy based primarily on the stated needs of customers balanced with emerging technology opportunities. The Office of Standards within the Acquisition Support and Operations Analysis Group of S&T is the organization through which DHS adopts standards. It is important to note that the first standards adopted by DHS were those adopted by the IAB. The S&T Office of Standards provides the majority of the funds that support the standards development requirements identified by the IAB.

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

The Support to the Homeland Security Enterprise and First Responders Group, commonly referred to as the First Responders Group (FRG), was established in October 2010 to strengthen the first response community's ability to protect the homeland and respond to disasters. Through the engagement of first responders at every stage, FRG pursues a clear understanding of their needs and requirements, and develops innovative solutions to the most pressing challenges faced during both day-to-day incidents and large-scale emergencies. In close partnership with the emergency preparedness and response community, FRG identifies, validates, and facilitates the fulfillment of needs



through the use of existing and emerging technologies, knowledge products, and standards. Three divisions work together to carry out FRG's overall mission: the National Urban Security Technology Laboratory (NUSTL), the Office for Interoperability and Compatibility (OIC), and Responder Technologies (R-Tech). FRG's Communications, Outreach, and Responder Engagement (CORE) team partners with the three divisions to conduct communications and outreach activities with the first responder community.

FRG focus areas include enabling communications, increasing data sharing, increasing responder safety, and enhancing first responder effectiveness. Core FRG initiatives are aimed at making first responders safer; helping them share data and critical information; and enabling them to communicate successfully through interoperability and the development and acceleration of standards.

Department of Justice, National Institute of Justice (NIJ)

The NIJ is the research, development, testing, and evaluation arm of the Department of Justice. NIJ's principal authorities are derived from the Omnibus Crime Control and Safe Streets Act of 1968¹ 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. 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*.

NIJ's new standards development process is called the Special Technical Committee (STC). 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

¹ as amended (42 USC 3721–3723).

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

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

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

The NIOSH program portfolio is organized into 8 industrial sectors. Within these sectors, The Personal Protective Technology (PPT) cross-sector exists to prevent work-related illness and injury by advancing the state

of knowledge and application of PPTs. PPT includes technical methods, processes, techniques, tools, and materials that support the development and use of personal protective equipment worn to reduce occupational exposure to hazards.

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

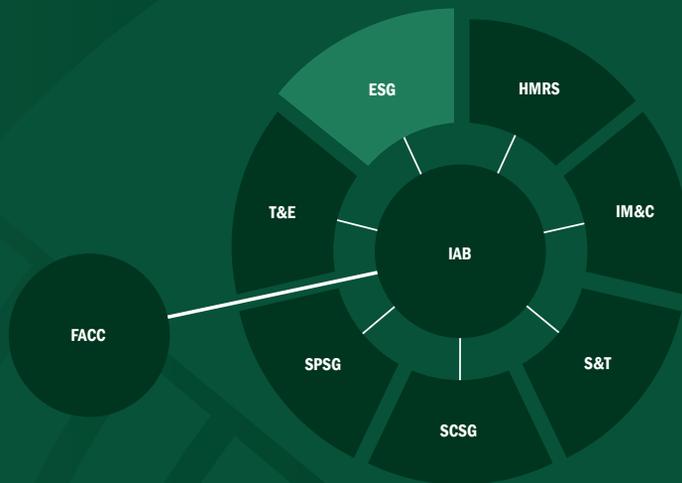
NPPTL applies state-of-the-art science to meet increasingly complex occupational safety and health challenges. Our strategic research programs help to ensure that the development of new personal protective technologies keep pace with the changing needs and requirements of employers and workers.

MICHAEL WALTER

Department of Homeland Security, Office of Health Affairs, BioWatch

Dr. Michael V. Walter joined the U.S. Department of Homeland Security's Office of Health Affairs as the BioWatch Program Manager in September 2009. Prior to joining the BioWatch Program, Dr. Walter was Staff Senior Scientist and headed the Technology Special Project Team for the U.S. Department of Defense Joint Program Executive Office for Chemical and Biological Defense. He has also held positions with Central Intelligence Agency, the Naval Surface Warfare Center, and Texaco, Inc. Dr. Walter possesses more than twenty years of experience in

microbiology/biological warfare research. He has an extensive background in sampling and detection for aerosolized microorganisms, as well as in the management and development of design, test, evaluation, and quality assurance for related systems and programs. He also has significant experience in laboratory assay development and testing. Dr. Walter is the recipient of eight publication and innovation awards, author of numerous scientific articles, abstracts, and patents. He received his Ph.D. in Microbiology from the University of North Dakota.



Equipment SubGroup

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



Equipment SubGroup (ESG)

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Roles and Functions

The Equipment SubGroup (ESG), the largest of the IAB SubGroups, addresses standardization and interoperability issues relating directly to protective, operational, and support equipment for emergency responders. ESG responsibilities include the maintenance and periodic publication of the IAB Standardized Equipment List (SEL) [including the designation of example products and identification/incorporation of new technologies]; the development of equipment-driven priorities for R&D and standards development; and coordination with other SubGroups such as Training & Exercises 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 DHS FEMA Grant Programs Directorate.

ESG SEL EQUIPMENT OVERSIGHT AREAS

- 1 Personal Protective Equipment
- 2 Explosive Device Mitigation and Remediation Equipment
- 3 CBRN Operational and Search & Rescue Equipment
- 4 Information Technology
- 5 Cyber Security Enhancement Equipment
- 6 Interoperable Communications Equipment
- 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 Equipment



Photo Courtesy of U.S. Army Staff Sgt. Brad Staggs

STATE & LOCAL CO-CHAIR

DOUGLAS E. WOLFE
Sarasota County (FL) Fire Department

FEDERAL CO-CHAIR

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

- 19 CBRNE Logistical Support Equipment
- 20 Intervention Equipment
- 21 Other Authorized Equipment

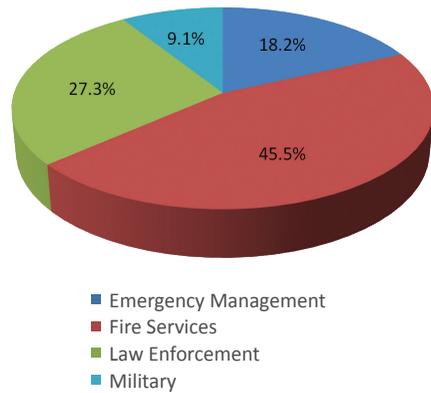
Membership

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

- State and Local Organizations (50%)—Representing the fire service, law enforcement, emergency medical service, 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 (USCG), Environmental Protection Agency (EPA), Federal Bureau of Investigation (FBI), National Guard Bureau, U.S. Department of Agriculture Animal Plant Health Inspection Service, Department of Defense (DOD), and U.S. Army Public Health Command.

The ESG has wide representation from standards development, labor, and professional organizations, such as the National Fire Protection Association (NFPA), ASTM International, International Association

ESG Active First Responder Primary Roles



ESG Professional Roles for non-First Responders

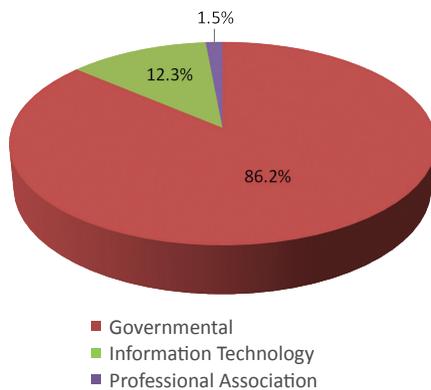




Photo Courtesy of Seattle Fire Department

of Fire Fighters (IAFF), National Tactical Officers Association (NTOA), and the National Bomb Squad Commander’s Advisory Board (NBCSAB). These organizations have membership or SME status on the ESG.

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

FY 2012 Highlights

Equipment SubGroup Initiatives and Activities (October 2011–September 2012)

- The ESG continued to serve as the IAB lead SubGroup for the maintenance and update to the Standard Equipment List (SEL) and supporting the DHS/FEMA Preparedness Grants Office and the Responder Knowledge Base (RKB) staff with the Authorized Equipment List (AEL).

In addition to multiple edits and updates throughout the SEL, new equipment item categories added during this time frame include:

01AR-02-APRW	Respirator, Air-Purifying, Negative Pressure, Wildland Fire Fighting
01AR-03-PAPW	Respirator, Powered Air-Purifying (PAPR), Wildland Fire Fighting
01WA-06-OBRD	Man Overboard Safety/ Marine Personnel Tracking System
03OE-07-ROVL	Vehicles, Remotely Operated, Land
03OE-07-ROVS	Vehicles, Remotely Operated, Submersible
03SR-04-ALRM	Alarm, Heat, Canine Transport

- In order to make the SEL more user friendly and intuitive, the ESG continued its development of mission-specific sub-lists (MSSLs) designed to support critical responder mission areas. MSSLs are compiled by ESG members and subject matter experts who draw appropriate items from all 21 sections of the SEL as needed. Each MSSL thus provides a “tailored SEL” for responders in a specific mission area. MSSLs can be selected and viewed via a pull-down menu on the IAB web site’s interactive SEL (<https://iab.gov/SELint.aspx>).

- MSSL’s completed to date are:

Law Enforcement: Aviation, Bomb Squad, Dive Team, Forensics Technician, and Mobile Field Force

Medical: Point of Dispensing, Basic Life Support, Advanced Life Support, Pre-Hospital, Hospital, Public Health and Disaster Stockpile

Mortuary Operations

Mass Care/Shelter



Equipment SubGroup

Canadian Recommended Equipment List (see below)

- The ESG continued to support the Canadian Police Research Center (CPRC) in developing the Canadian Recommended Equipment List (REL). Under an agreement with CPRC, the IAB is providing system and subject matter assistance in creating a parallel SEL tailored to the needs of the Canadian emergency response community. Canadian representatives participate on the ESG to facilitate communication. This effort will exploit the many commonalities of the Canadian and U.S. communities, while providing a venue for future coordination. One product of this collaboration is a set of MSSLS that reflect the REL Levels of Service (LOS):

LOS-1 Multi-Agency Intervention

LOS-2 Scout/Reconnaissance Mission

LOS-3 Suspicious Powder Response

LOS-4 Evacuation and Perimeter Control

LOS-5 Emergency Washdown

- The ESG received a presentation by representatives from the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Emergency Management

Membership

ERIC ASHBURN

Walker County (GA) Emergency Services

TAUSEEF BADAR

Naval Forces Pacific

CHARLIE BRANNON

National Naval Medical Center

RICHARD BYTNER

New York State Police

TIM DORSEY

West County (MO) EMS & Fire District

THOMAS GROEL

Federal Bureau of Investigation, Hazardous Material Response Unit

ERIC IMHOF

Contra Costa County (CA) Office of the Sheriff

LISA LANHAM

Sarasota (FL) County Sheriff's Office

JAMIE LESINSKI

Los Angeles (CA) Fire Department

ANDRZEJ MIZIOLEK

United States Army Research Laboratory

IRENE RICHARDSON

United States Army Chemical Materials Agency

AXEL RODRIGUEZ

United States Army Natick Soldier, Research, Development & Engineering Center

PETER STEVENSON

Environmental Protection Agency

RON WATSON

Los Angeles County (CA) Fire Department

FOREST WILLIS

United States Coast Guard, National Strike Force

JOHN WILSON

National Guard Bureau, 44th Civil Support Team

Subject Matter Experts

JEREME ALTENDORF

United States Coast Guard

ED BAILOR

United States Capital Police (Retired)

JOHANNA "JELEEN" BRISCOE

United States Department of Agriculture

JERRY DIEHL

Arizona DPS State Police, Bomb Squad

RICHARD DUFFY

International Association of Fire Fighters

DON HEWITT

Proconsul, Inc,

JEFF MARCUS

Los Angeles (CA) Fire Department (Retired)

JERRAL RIPPETOE

DHS/FEMA Propositioned Equipment Program

JEFFREY STULL

International Personnel Protection

DAVID TREBISACCI

National Fire Protection Association

and Diagnostics Branch on the National Veterinary Stockpile.

- The ESG received a presentation from representatives from the U.S. Department of Justice, National Institute of Justice Aviation Technology Program. The focus of this presentation was Small Unmanned Aircraft Systems (SUAS) available to local/state emergency response agencies and departments. As a result, a new SEL item for SUAS was created to bring the SEL in line with current technology and policies, and the CBRN Aircraft item was updated.
- The ESG and S&T SubGroups received a presentation from a company named NovemberKiloEcho on the practical application of enhanced reality equipment technology for applications such as structural fire fighting. New SEL equipment item categories will be added if this technology becomes available for procurement and use by emergency responders.
- The ESG completed the IAB-ESG position paper entitled: Evaluation of Hazards in the Post-Fire Environment. Today's emergency responders, including fire service, law enforcement, EMS, and other disciplines, spend a considerable amount of time in the "post-fire" environment. Work in this environment includes, but is not limited to victim recovery, salvage and overhaul, origin and cause investigation, and criminal investigations. Current research suggests that the airborne hazards associated with the post-fire environment are likely much greater than previously understood. The ESG had been asked to respond to questions regarding the use of multi-gas detection instrumentation to drive decisions on selection of Personal Protective Equipment (PPE) for protection of fire fighters and other personnel from airborne hazards in the post-fire environment. This position pa-

per also includes sections on Background, Discussion, and Recommendations.

- The following individuals participated in a special ESG breakout session at the November 2011 IAB Board Meeting. Their participation was requested as part of the ESG's information gathering effort in support of the development of this position paper.

NIOSH Health Hazard Evaluations in the Fire Service – LCDR Kenneth Fent, PhD, National Institute for Occupational Safety and Health

NIST Fire Fighting Research and Overhaul – Dr. Anthony Putorti, PhD, National Institute of Standards and Technology, Fire Research Division

Fire Exposure Studies – Dr. Michael Logan, Chief Superintendent, Queensland (AU) Fire and Rescue, Scientific Branch

- The ESG facilitated a meeting with representatives from the DHS/FEMA Grants Program Directorate (GPD) to address the topic of accredited bomb squads and certified bomb technicians being authorized to purchase energetic materials for use in operational training with federal grant funding. Issues discussed included the safe handling and storage of explosive materials by these bomb squads. As a result, GPD has issued guidance to the State Authorizing Agents that facilitate such purchases.
- Members and SMEs from the ESG continued to participate on the National Fire Protection Association (NFPA) Project on Emergency Services Protective Clothing and Equipment (FAE-AAC) and on numerous NFPA Technical Committees revising existing equipment standards and developing new standards. The NFPA Staff Liaison for this project and its standards development committees is a Subject Matter Expert (SME) on the ESG. This ensures that the ESG has direct input into the NFPA standards development and revision process. Additionally, it enables the ESG to update related SEL



equipment items as new editions and NFPA product standards are released.

- ESG Members and SMEs participated on the National Institute of Justice (NIJ) Special Technical Committee conducting review and revision to the first edition of the NIJ Standard 0116.00—CBRN Protective Ensemble Standard for Law Enforcement (November 2010).
- ESG members participated on the NIJ Special Technical Committee responsible for the development of the Public Safety Bomb Suit Standard (NIJ Standard-0117.00) and Public Safety Bomb Suit Certification Program Requirements (NIJ CR-0117.00) released in March 2012.
- Members and SMEs from the ESG visited the W. L. Gore & Associates facility in Elkton, MD. This visit included presentations and discussions on barrier fabric

and selectively permeable fabric technologies and products, permeation testing methods and performance requirements, and technical challenges manufacturers face in developing CBRN protective ensembles meeting NIJ CBRN ensemble standard requirements.

- The ESG also advocated improvements in existing performance requirements and test methods for measuring chemical permeation resistance of ensembles. As a result, the ESG is closely monitoring the activities of the NFPA Technical Committee on Hazardous Materials Protective Clothing and Equipment during the revision process for *NFPA 1991 Standard on Vapor-Protective Ensembles for Hazardous Materials Emergencies*. The ESG intends to submit written public comment in support of this revision process.

DOUGLAS E. WOLFE

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

Douglas Wolfe has served in the hazardous materials emergency response field for 27 years with the Sarasota County Fire Department, and coordinates its Special Operations and Domestic Security programs. During his tenure in the field, Mr. Wolfe has instructed on a national basis for numerous organizations, including the National Fire Academy, where he has served as subject matter expert and co-authored numerous programs, including, “Advanced Life Support Response to Hazardous Materials Incidents,” “EMS: Special Operations,” “Emergency Response to Terrorism: Tactical Considerations,” and “Chemistry for Emergency Response.” In addition to the IAB, Mr. Wolfe served on the Florida SERC and Hazardous Materials Training Task Force, as well as the Florida State Working Group for Domestic Security Equipment Subcommittee.

WILLIAM E. HASKELL

*National Institute for Occupational Safety and Health;
National Personal Protective Technology Laboratory;
Centers for Disease Control and Prevention*

Bill Haskell is a member of the Policy & Standards Branch at the NIOSH National Personal Protective Technology Laboratory (NPPTL). Mr. Haskell is the Coordinator for the NIOSH Public Safety Sector Program and Co-Chair of the National Occupational Research Agenda (NORA) Public Safety Sector Council. Mr. Haskell serves as the Chairman of the NFPA Technical Correlating Committee (TCC) for Fire and Emergency Services Protective Clothing and Equipment, and NFPA technical committees for hazard materials, electronic safety, structural/proximity, special operations, and emergency medical service protective clothing and equipment. Mr. Haskell is a member of the ASTM International F23 Protective Clothing and E54 Homeland Security Committees, and the IACP Homeland Security Committee. Mr. Haskell holds a B.S. in civil engineering and an M.S. in plastics engineering from the University of Massachusetts at Lowell.



Health, Medical, & Responder Safety SubGroup

The mission of the Health, Medical, & Responder Safety (HMRS) SubGroup is to provide guidance to the IAB on medical issues, responder and public health and safety including equipment, supplies, and pharmaceuticals needed to respond to all-hazards events with a focus on CBRNE events.



Health, Medical, & Responder Safety (HMRS) SubGroup

The mission of the Health, Medical, & Responder Safety (HMRS) SubGroup is to provide guidance to the InterAgency Board (IAB) on medical issues. The guidance includes first responder/receiver public health, safety, and performance optimization, development of best practices, and standards for certification of equipment, supplies, and pharmaceuticals needed to respond to all-hazards events with a focus on Chemical, Biological, Radiological, Nuclear, and High Explosive (CBRNE) incidents. This guidance is developed from member knowledge, experience, review, and discussion of relevant material. The HMRS SubGroup reviews and makes recommendations to the IAB on needs for new or modified equipment and the performance and operational standards relative to the SubGroup qualifications and expertise. Recommendations are presented as position papers, letters of support, or member representation through appropriate workgroup or committee participation. Efforts are also captured through updates to the Standardized Equipment List (SEL) and Responder Knowledge Base (RKB) in order to support first responders and receivers preparing for all-hazards events with focus on CBRNE incidents.

Membership

The HMRS SubGroup consists of representatives from local, state, and federal responder agencies and institutions engaged in public health, medical response, and responder safety. HMRS members engage all of the response disciplines as defined by the Department of Homeland Security Federal Emergency Management Agency (DHS FEMA) National Preparedness Directorate (NPD). HMRS also draws upon a wide range of Subject Matter Experts (SMEs), both from within and outside the IAB, to provide input into the HMRS workplan projects, goals, and objectives.

Roles and Functions

- Identify gaps and needs for providing safe and effective medical care under emergency conditions.
- Evaluate the efficacy and appropriateness of existing and proposed health and safety-related products, processes, practices, and information.
- Serve on working groups that address emergency public health, medical, performance, and responder safety.
- Develop recommendations about how to identify, mitigate, or eliminate emergency



Photo Courtesy of New Castle County Emergency Medical Services

STATE & LOCAL CO-CHAIR

JEFF RACE

City of New York (NY) Fire Department

FEDERAL CO-CHAIR

DR. DUANE CANEVA

Navy Bureau of Medicine and Surgery, Emergency Preparedness Directorate, Department of Defense

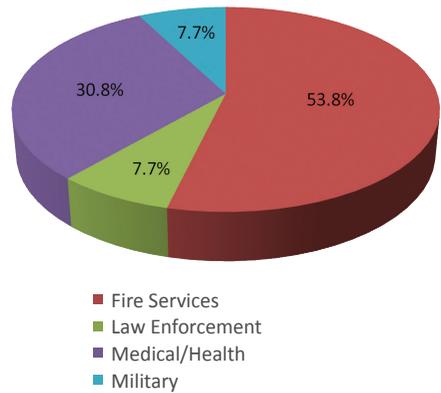
responder safety hazards, prevent injuries, and reduce disability and mortality.

- Identify and address factors in emergency response that cause physical, physiological, or psychological harm.
- Analyze threat scenarios and make recommendations about how to protect public health, medical, and responder personnel, and victims safely and effectively.

Initiatives

- HMRS organized into workgroups focused specifically on the annual work-plan objectives, identifying long-term goals and short-term projects to work towards them.
- HMRS continued to advocate through an IAB Position Paper for the establishment of a single federal government office for EMS oversight and governance of emergency medical service (EMS) issues that need federal action and national coordination.
- HMRS promoted an increased focus on health monitoring of first responders during incident response, which included exploring novel technologies to identify physiological parameters that correlate with performance, safety, and health.
- It is also considering the role of EMS providers in monitoring the health and safety of first responders during incident response, and advocates for development of national standards and best practices.

HMRS Active First Responder Primary Roles



HMRS Professional Roles for non-First Responders

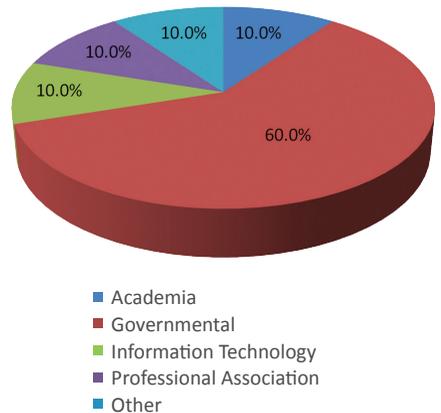




Photo Courtesy of New Castle County Emergency Medical Services

- HMRS continued to explore the long-term effects of low-level exposure to hazardous materials on incident sites, potential cumulative effects over the span of a career, and what mitigation actions might be employed.
- HMRS evaluated new technological breakthroughs linked to improved performance, safety, and health for incorporation into the SEL or the formal research and development process.

Accomplishments

- Developed a Position Paper advocating for Food and Drug Administration (FDA) approval of a home medical kit that would allow emergency services and medical/public health sector personnel to have a contingency supply of medical countermeasures kept at home in the event of a biological attack.
- Developed a position paper for a more structured review of stress management programs and processes for emergency services sector personnel.
- Established a prioritized list of research and development issues impacting the health and safety of our nation's first responders.
- Continued efforts to establish effective long-term health monitoring processes and techniques for first responders.
- Completed a review of SEL and Authorized Equipment List (AEL) items.
- Submitted a letter of concern to Secretary of Health and Human Services advocacy resolution of crXXX drug shortages impacting emergency medical services nationwide.



Health, Medical, & Responder Safety SubGroup

Membership

KNOX ANDRESS

Louisiana Poison Center

CHRISTINA BAXTER

Technical Support Working Group

SANDY BOGUCKI

Branford (CT) Fire Department

KELLY BURKHOLDER-ALLEN

University of Toledo

RICHARD BURTON

Placer County (CA) Health and Human Services

CAOIMHÍN CONNELL

Park County (CO) Sheriff's Office

NEAL DOLAN

South Carolina Law Enforcement Division

RENEE FUNK

National Institute for Occupational Safety and Health

DARIO GONZALEZ

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

RANDY GRIFFIN

DeWitt (NY) Fire District

EARL HALL

Avon (MT) Fire Department, University of Montana, College of Health Professions and Biomedical Science

DAN HANFLING

Arlington Country (VA) Urban Search and Rescue

DR. KENNETH MILLER

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

REED SMITH

Arlington County (VA) Fire Department

LAWRENCE TAN

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

TOM WALSH

Mt. Erie (WA) Fire Department

HERBERT WOLFE

United States Navy, Navy Medicine

Subject Matter Experts

SUSAN JONES-HARD

Center for Homeland Defense and Security

LUIS KUN

National Defense University

DR. ROBERTA LAVIN

United States Public Health Service

GREGG LORD

George Washington University

PAUL MANISCALCO

International Association of Emergency Medical Services Chiefs

CHRISTY MUSIC

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

RICK PATRICK

Department of Homeland Security, Office of Health Affairs

FRANK PRATT

Los Angeles (CA) County Fire Department

DR. KARI SCANTLEBURY

The George Washington University, Department of Emergency Medicine, Emergency Health Services Program

MICHAEL SCOTT

Kent (WA) Fire Department, Kent Fire Training Academy

BOB SHANK, JR.

National Disaster Medical System, Disaster Mortuary Operational Response Team

DR. REED SMITH

Arlington County (VA) Fire Department

STEVE SKOWRONSKI

Centers for Disease Control and Prevention

TIM STEPHENS

National Sheriffs' Association

ANTHONY TOMASSONI

Yale University School of Medicine

BARRY WANTE

Brigham and Women's Hospital

JEFF RACE

*Captain, Commanding Officer
City of New York (NY) Fire Department*

Captain Jeffrey D. Race is a 27-year veteran with the New York City Fire Department EMS Command. Assigned as the Commanding Officer of EMS Special Operations, Captain Race has developed, managed, and trained the department's EMS resources in Haz Mat Operations, EMS Haz Mat Medical Technician, and Paramedic Rescue Medical Programs. He supported the department's unique capabilities to manage and mitigate pre-hospital care needs to the public and responders during Haz Mat and Technical Rescue situations with a focus on CBRN and weapons of mass destruction (WMD) events.

Receiving numerous awards throughout his profession, Captain Race received the Medal of Honor for his work at the Avianca aircraft disaster in the 1990s. A World Trade Center survivor and operations officer, he also has operated and managed many other high-profile NYC disasters during his career, including Anthrax attacks and many Haz Mat and Rescue operations.

Captain Race is a graduate from the EMS Systems Management program at Davenport University in Grand Rapids, Michigan. He also continues to serve as a local first responder as a firefighter/EMT. Captain Race contributes to many national and international organizations and currently Co-Chairs the IAB Health, Medical, & Responder Safety SubGroup as the State and Local Representative, as well as several others.

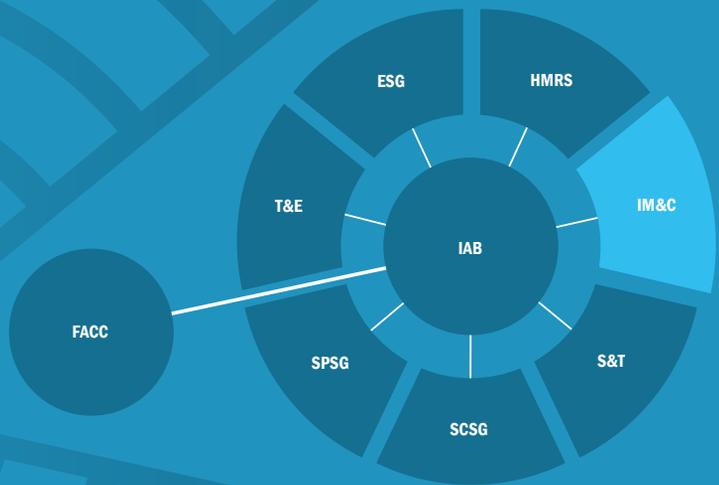
DUANE CANEVA

*Director, Emergency Preparedness
Navy Bureau of Medicine and Surgery
Department of Defense*

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

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

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



IM&C

Information Management & Communications SubGroup

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



Information Management and Communications (IM&C) SubGroup

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

Roles and Functions

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

- System and strategy improvements for intelligence and decision support, including the collection, administration, sharing, analysis, and protection of information
- Gaps and challenges related to information collection, sharing, classification, categorization, storage, security, and dissemination that affect incident prevention and emergency preparedness and response
- Decision support materials and interoperable communications technologies, policies, and strategies
- Effective development and integration of interoperable communications and decision support technologies and practices

to provide indications and warnings, and information/intelligence support for operations.

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

Perhaps the greatest strength of the InterAgency Board (IAB) is the emphasis on the practitioner. The majority of the membership consists of current first responders from emergency medical service (EMS), emergency management, fire, and law enforcement agencies. The standards and equipment guides are developed by first responders, for first responders. In this work,



Photo Courtesy of Seattle Fire Department

STATE & LOCAL CO-CHAIR

LEN EDLING

Merrionette Park (IL) Fire Department

FEDERAL CO-CHAIR

MIKE TUOMINEN

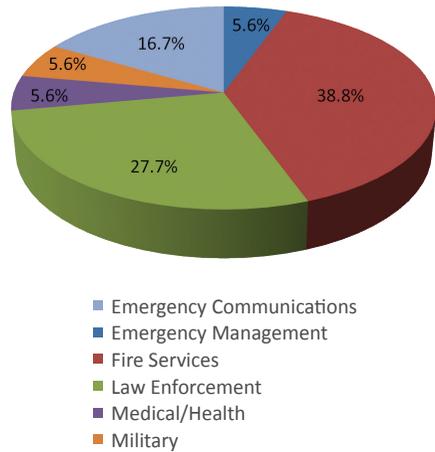
National Interagency Fire Center, National Interagency Incident Communications Division

“responder” members are fortunate to have the support and input from the rest of the membership, comprised of representatives from state and federal government, academia, industry, and others. While working with the other IAB SubGroups, the IM&C SubGroup’s role has always been one of developing a common or standardized operating picture for all the essential components of an emergency incident response. The unique quality of this effort is providing the information from the responder’s perspective.

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

The two-way information flow is beneficial to all involved. Through this process, our federal partners are able to rapidly obtain feedback essential to improving the safety and security of our nation. First responders are rewarded through the timely dissemination of information regarding such issues as grant programs, technology trends, resources, and ongoing research and development. It

IM&C Active First Responder Primary Roles



IM&C Professional Roles for non-First Responders

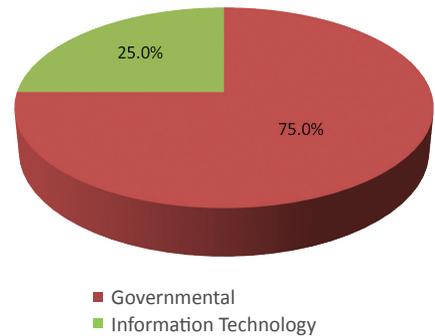




Photo Courtesy of Fairfax County Police S.W.A.T. Team

is our goal to provide yet another means to get information out to those who may not otherwise receive it.

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

- Computer aided dispatch (CAD)-to-CAD interfaces
- Records management systems (RMS)-to-RMS interfaces
- CAD-to-RMS interfaces
- Skills and training of communications support personnel
- Cybersecurity
- Intelligence sharing and exchange
- Common Operating Picture.

SubGroup Accomplishments:

Communications Unit Leader (COML)/ Communications Unit Technician (COMT)

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

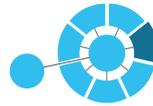
To that end, and in keeping with the mission of the IAB, the IM&C SubGroup continues working toward these by:

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

Two programs having the most impact in this area were courses developed by the Department of Homeland Security's Office of Emergency Communications (DHS OEC). COML and COMT courses have been giving those in the responder community the knowledge, skills, and abilities to address the dynamic communications challenges presented in various incident environments.

DHS courses have been ongoing with more than 4,000 individuals trained nationwide. The course calls for students to meet some prerequisites, to take a 3-day, 24-hour course for COML (5-day, 40-hour course for COMT), to go through a field practicum, and finally, to go through some as yet-to-be-defined process for final certification.

Responsibility for the course has transitioned from the DHS OEC to the Federal Emergency Management Administration (FEMA) instructional group, the Emergency Management Institute (EMI). The National Consortium for Justice Information and Statistics (SEARCH) has, and will continue, to administer the course.



Information Management & Communications SubGroup

One challenge of the program is that students are completing the task book portion of the course, but there continues to be hesitation on the part of the state and federal government to become the certifying entity. Further, because of budget cuts, many states are losing those agencies (State Interoperability Offices) that would have potentially issued the certification.

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

C4ISR/Common Operating Picture/Cyber Security

The IM&C SubGroup has fostered a working relationship with Emergency Services Sector (ESS) to provide direct input for a number of development programs. Mark Hogan (IM&C member) is

Membership

- LEIF ANDERSON**
Phoenix (AZ) Fire Department
- JOSEPH BOOTH**
Louisiana State University
- DON BOWERS**
Fairfax County (VA) Fire and Rescue
- THOMAS CHIRHART**
Department of Homeland Security
- JAMES CRONKHITE**
United States Northern Command
- JOHN FREEBURGER**
Montgomery County (MD) Fire & Rescue
- MARK HOGAN**
City of Tulsa (OK) Security
- WALT KAPLAN**
United States Department of Health and Human Services, National Veterinary Response Team-2
- JEFFREY KING**
Department of Homeland Security
- CHRIS LOMBARD**
Seattle (WA) Fire Department
- GEORGE PERERA**
Miami-Dade (FL) Police Department
- MARTY RYCZEK**
Chicago (IL) Police Department
- MARK SAXELBY**
Los Angeles (CA) City Fire Department
- WILLIAM SNELSON**
United States Marshals Service
- JOHN SULLIVAN**
Los Angeles County (CA) Sheriff's Department

Subject Matter Experts

- MATTHEW DEVOST**
FusionX LLC
- ROBERT HORNE**
Washington Regional Threat and Analysis Center
- SUSAN MCGRATH**
Dartmouth College
- CHRIS PITTMAN**
Sacramento County (CA) Sheriff's Department
- NEAL A. POLLARD**
Georgetown University
- JEFF RODRIGUES**
Cook County (IL) DHS Emergency Management
- GREG SACKMAN**
Seattle (WA) Police Department
- LEROY SISLEY**
Seattle (WA) Fire Department, Federal Emergency Management Agency Urban Search and Rescue
- KEELEY TOWNSEND**
Department of Homeland Security
- DAVID TRITCH**
Kettering Fire Department/Ohio Task Force 1, Federal Emergency Management Agency Urban Search and Rescue
- PAULA YOUNG**
Cuyahoga County (OH) Department of Justice Affairs

leading an effort by chairing a cyber security advisory group tasked with the creation of a cyber security roadmap for the sector. The final draft of the roadmap is in peer review. The advisory group also worked with the National Cyber Security Division (NCSD) on a second project (CARMA, explained below) that identified common risks in the ESS. That project was a tremendous aid in the completion of the roadmap. Mark relied heavily on the SubGroup, as they were instrumental in the creation of these documents.

Several SubGroup members worked with the ESS and NCSD on a Cybersecurity Assessment and Risk Management Approach (CARMA) assessment tool for the ESS. This working group drafted the scenarios for CARMA that enabled the working group and NCSD to provide a final document (ESS-CRA, or Cyber Risk Assessment) with realistic issues for departments to check their cyber security against. The ESS-CRA will be a value to small and large departments and of great assistance to the sector. The ESS-CRA provides sector management with information that provides a baseline report for the sector cyber security. The ESS-CRA was posted on the Homeland Security Information Network (HSIN) in the ESS portal on August 1, 2012.

Additionally, the SubGroup has been gathering information on all the portals and networks currently available to responders. At the request of the ESS-SSA (Sector-Specific Agency), the SubGroup is assembling a spreadsheet as to what value each portal offers, locating duplicity, and offering suggestions for consolidation. The SubGroup has also looked at single sign-on versus linked portals, which often require a second login to actually access the portal. An early conclusion is that until we get one government entity in

charge of all the different portals to be the final on security clearance needs, we will never have single sign-on.

The IM&C SubGroup has continued its work with the DHS Science and Technology (S&T) Command, Control and Interoperability Division during its launch of Virtual USA (vUSA), an end-user driven and federally supported initiative focusing on cross-jurisdictional information sharing and collaboration among the homeland security and emergency management community. vUSA is developing a technical system and operational guidelines to share incident response information through existing systems and geospatial platforms, in partnership with local, tribal, state, and federal officials, as well as the vendor community. Through vUSA, homeland security and emergency management stakeholders have the capability to quickly access critical information from relevant sources and customize the display of that information based upon the end-user's unique needs to save lives, protect property, and realize operational efficiencies through improved situational awareness. The SubGroup also has provided valuable input into the development of the national vUSA program.

Other Activities:

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

LEN EDLING

Chief, Merrionette Park (IL) Fire Department

Chief Edling has 20 years of emergency response experience, including serving as a Firefighter, Paramedic, HazMat Technician, and HazMat Response Chief. He is Chief of the Volunteer Merrionette Park Fire Department. He serves as Administrative Assistant for the Deputy Fire Commissioner of Operations with the Chicago Fire Department, where his responsibilities include working on various federal, state, and local committees and programs in the areas of hazardous materials, incident management teams, communications, and major incident response. In addition to serving as the state and local Co-Chair of the IAB IM&C SubGroup, Mr. Edling co-chaired the Chicago and Cook County Interoperable Communications Committee.

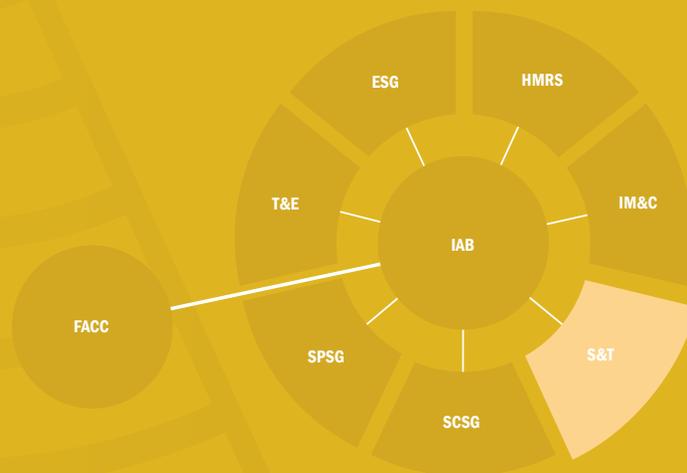
MIKE TUOMINEN

Branch Chief, Incident Communications Operations, 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 the management of all facets of emergency communications systems utilizing low-power, very-high-frequency, and ultra-high-frequency land mobile radio; high-frequency and satellite radio and telephone; and frequencies equipment and personnel resources for areas involved in severe multi-incident emergencies. He also is involved in training through the National Wildfire Coordinating Group for Incident Communications Technician S-258, Communications Unit Leader S-358, and Communications Coordinator, and was involved in the development of all-risk Communications Unit Leader and Communications Technician courses. Some of his recent assignments include Hurricanes Katrina and Rita, 2005; Alaska, Northern California, Northern Rockies, Northwest, Southern, and Southwest Fires, 2005 through 2010; Haiti Earthquake, 2010; North Dakota Flooding, 2010; and technical assistance to the Republic of Ghana, 2005.

Science & Technology SubGroup

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





Science & Technology (S&T) SubGroup

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

Roles and Functions

The primary functions of the S&T SubGroup are to develop and update the InterAgency Board (IAB) S&T Requirements Matrix for inclusion in the Standardized Equipment List (SEL), 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 IAB S&T Requirements Matrix (included in the appendix) identifies future technology needs for detection, individual protection, collective protection, medical support, decontamination, communications systems, information technology, and operational equipment.

Initiatives and Progress

During 2011-2012, the S&T SubGroup accomplished the following:

- Followed up on detailed review and prioritization of S&T needs and projects

(with designated SubGroup Chairs serving as mission area leaders)

- Administered the web-based survey to prioritize research and development (R&D) requirements from SubGroups
- Conducted a statistical analysis of the IAB R&D requirements survey results and delivered a Prioritized R&D Requirements List (PRL) for official publication
- Reviewed the 2011-2012 SEL Categories and updated the Summary of Current R&D Projects Matrix (also known as the S&T Matrix)
- Coordinated input into federal R&D agencies to leverage IAB-prioritized requirements.
- Developed a BioWatch Ad-Hoc Working Group to review response protocols for the Gen 3 BioWatch program
- Worked toward the development of a graphic training aid (GTA) in conjunction with DHS Transportation Security Administration (TSA)



Photo Courtesy of FDNY

STATE & LOCAL CO-CHAIR

DOUGLAS CARLEY
Grand Rapids (MI) Fire Department

FEDERAL CO-CHAIR

GABRIEL RAMOS
Technical Support Working Group

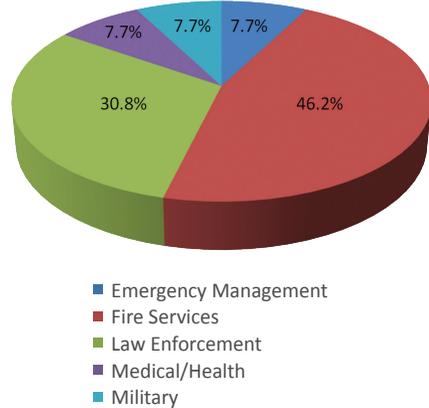
- Attended the following events:
 - > Chemical Release Emergency Response Strategy Session/ DHS Chemical Surety Analysis Center (CSAC)/TSA at Edgewood Chemical Biological Center (ECBC)
 - > Technical Support Working Group (TSWG) Personal Protection Equipment (PPE) Conference
 - > TSWG Explosives Detection Symposium and Workshop
 - > Explosive Ordnance Disposal/ Homemade Explosives (EOD/HME) Working Group
 - > Technologies for Critical Incident Preparedness (TCIP) Conference

Ongoing Initiatives in 2011-2012

The S&T SubGroup has established a formal process to collect and prioritize IAB R&D requirements. This work continued in 2012 and involved a new requirements collection survey from all IAB SubGroups, followed by statistical analysis and prioritization based on results of the survey.

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

S&T Active First Responder Primary Roles



S&T Professional Roles for non-First Responders

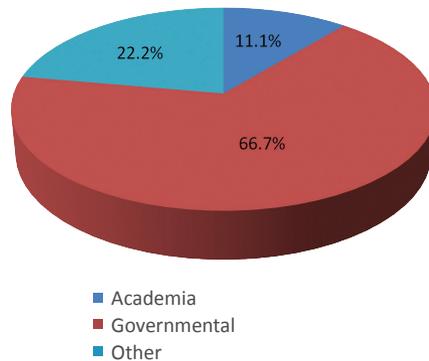




Photo Courtesy of Seattle Fire Department

The S&T SubGroup will continue work to support a demographic database and analysis of the IAB membership. New demographic data was gathered in 2012.

As federal agencies' programs address prioritized IAB R&D requirements, the S&T Matrix will be updated to reflect the project name, managing agency/participants, and status of availability. A "Technology Readiness Level (TRL)" column was included in the S&T Matrix.

Identified Requirements

The following prioritized R&D requirements were identified by the SubGroups in 2012 as capability gaps that should receive special consideration by R&D initiatives.

2012 IAB Research and Development Priority List*

1. Emergency Responder Body Worn Integrated Electronics System Development
2. Enhance Communications in Environments that Interfere with Radio Transmissions
3. 3-D Tracking of Personnel
4. Hands-Free Radio Intercom
5. Handheld Standoff Chemical and Explosive Identifier
6. Noise-Filtering Digital Speaker/Microphone for SCBA Facepiece
7. Detection of Airborne Hazards at Fire Scenes
8. Rapid System(s) to Decontaminate Vehicle Interiors
9. Vehicle-Borne Improvised Explosive Device (VBIED) Render Safe Tool

10. Air Purifying Respirator (APR) and Powered Air Purifying Respirator (PAPR) Applicability in the Post Fire Environment
11. Incident Management Accountability System
12. Equipment/Procedures for Interim Field Decon of Firefighting Personnel and Equipment After Structure Fire Fighting
13. Device for Standoff Casualty Triage
14. Guide for Increasing Patient Transport Capability
15. Unknown Substance Field Screening Skills Proficiency Evaluation Program
16. Radio and Battery Usage Rating Standardization
17. Conops Analysis for Robotic Applications within the Fire Service
18. Modeling, Simulation, and Gaming Software Evaluation Tool
19. Proactive Training Resource (PTR) Initiative
20. Equipment/Supply Guide for Relocating Special Needs Evacuees
21. Enhanced Decontamination Capability for Special Needs Victims
22. Weapons Contamination/Decontamination Study

*See Appendix for a detailed description of each priority.

2012 IAB Research and Development Priorities: Breakdown by SubGroup

Equipment SubGroup (ESG)

1. Handheld Standoff Chemical and Explosive Identifier
2. Detection of Airborne Hazards at Fire Scenes



Science & Technology SubGroup

3. Vehicle-Borne Improvised Explosive Device (VBIED) Render Safe Tool
4. APR and PAPER Applicability in the Post Fire Environment
5. Equipment/Procedures for Interim Field Decon of Firefighting Personnel and Equipment After Structure Fire Fighting
6. Weapons Contamination/Decontamination Study

Health, Medical, & Responder Safety (HMRS) SubGroup

1. Emergency Responder Body Worn Integrated Electronics System Development
2. Rapid System(s) to Decontaminate Vehicle Interiors
3. Device for Standoff Casualty Triage
4. Guide for Increasing Patient Transport Capability
5. Equipment/Supply Guide for Relocating Special Needs Evacuees
6. Enhanced Decontamination Capability for Special Needs Victims

Information Management & Communications (IM&C) SubGroup

1. Enhance Communications in Environments that Interfere with Radio Transmissions
2. 3-D Tracking of Personnel
3. Hands-Free Radio Intercom
4. Noise-Filtering Digital Speaker/Microphone for SCBA Facepiece
5. Radio and Battery Usage Rating Standardization

Science & Technology (S&T) SubGroup

1. Incident Management Accountability System
2. Conops Analysis for Robotic Applications within the Fire Service

Training & Exercises (T&E) SubGroup

1. Unknown Substance Field Screening Skills Proficiency Evaluation Program
2. Modeling, Simulation, & Gaming Software Evaluation Tool
3. Proactive Training Resource (PTR) Initiative

Membership

CRAIG ADAMS

Los Angeles (CA) Police Department, Counter Terrorism Training Unit

KENNETH BRENNAN

Fairfax County (VA) Police Department

BRYAN COOKE

Fairfax County (VA) Explosives Ordnance Disposal

DEAN COX

Fairfax County (VA) Fire Department

TECARIE CZARNECKI

Civil Support Team

BILL DESO

Department of Homeland Security

VINCENT J. DOHERTY

Long Island University/Naval Postgraduate School

JOHN DONNELLY

DC Fire and Emergency Medical Services

CHRISTINA EGAN

New York State Department of Public Health

GERARD FONTANA

Boston (MA) Fire Department

DAVID LADD

Massachusetts Department of Fire Services

ADAM MILLER

Huntingdon County (PA) Emergency Management Agency

MILT NENNEMAN

Department of Homeland Security

DON OSTROWSKI

Troy (MI) Police Department

TOM RICHARDSON

Seattle (WA) Fire Department

DAVID TAFAOA

South Carolina Law Enforcement Division

Subject Matter Experts

MATTHEW DAVENPORT

Department of Homeland Security

ANGELA ERVIN

Department of Homeland Security

NEIL HOLLORAN

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

SEAN POLSTER

Mount Weather (VA) Fire Department

RON SHAFFER

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

NANCY SUSKI

Lawrence Livermore National Laboratory

DARREN WHEELER

Department of Defense, JPEO-CBD

DOUGLAS CARLEY

Grand Rapids (MI) Fire Department

I am a Fire Lieutenant with the Grand Rapids Fire Department. I joined the Fire Department in August 1985 and am currently assigned to Ladder Company #2. Prior to working with the Fire Service I spent 4 years as a Hull Maintenance Tech in the US Navy serving on the Aircraft Carrier Carl Vinson. In 1987, I was assigned as Radiological Officer for the City of Grand Rapids. In 1987, I was certified as a HazMat Technician and also attained HazMat Specialist in 1993. I ran our HazMat Team from 1994–2009. I have sat on a variety of Local and State Homeland Security boards helping to provide direction and expertise on HazMat related issues. I served as a Team Leader for one of Michigan's Regional Response Teams where I also served as the equipment chair for all the State's Regional Response Teams. I have been a member of the IAB since 2007.

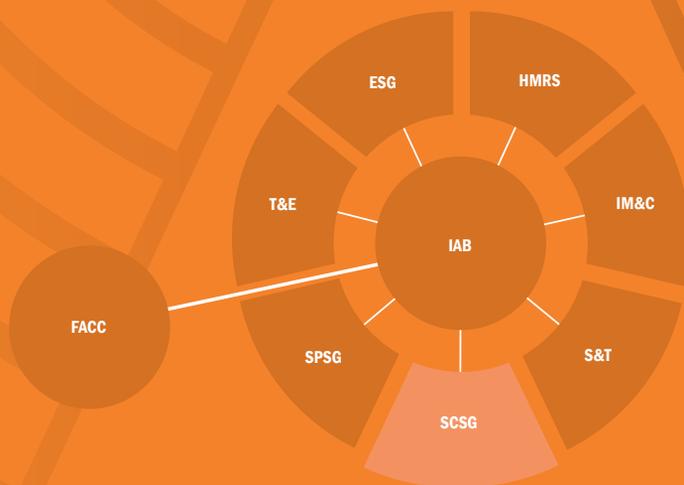
GABRIEL RAMOS

*Deputy Director, Technology Division
Combating Terrorism Technical Support Office
(CTTSO)*

Gabriel Ramos is the Deputy Director, Technology Division at the CTTSO, providing management and technical oversight for the execution of the Technical Support Working Group (TSWG) rapid R&D program. He has 25 years of experience developing and evaluating Combating Terrorism (CT) capabilities for Department of Defense (DOD) and the federal interagency community. Mr. Ramos has a B.S. in chemical engineering from the Polytechnic University, Brooklyn, N.Y. and is also a graduate of the U.S. Army School of Engineering Logistics Product/Production Engineering Program. Mr. Ramos is a member of the InterAgency Board (IAB) for Equipment Standardization and Interoperability and has served as the IAB federal co-chair of the S&T SubGroup since February 2003.

Standards Coordination SubGroup

The mission of the Standards Coordination SubGroup (SCSG) is to identify and coordinate standards development needs and activities within the InterAgency Board (IAB), with external organizations, and with the emergency responder community.





Standards Coordination SubGroup (SCSG)

The mission of the Standards Coordination SubGroup (SCSG) is to identify and coordinate standards development needs and activities within the InterAgency Board (IAB), with external organizations, and with the emergency responder community. The objective is to promote local, tribal, state, and federal preparedness through the development and implementation of standards for emergency responder needs associated with all-hazards incidents, especially those involving Chemical, Biological, Radiological, Nuclear, and Explosive (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.

Membership

The SCSG includes representatives from federal, state, and local agencies, as well as subject matter experts from private standards development and testing organizations.

Roles and Functions

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

- Identifying and prioritizing standards requirements and related interoperability and compatibility issues
- Identifying existing standards, performance requirements, and test methods that could streamline the development of

new standards or be modified to meet the needs of emergency responders

- Identifying potential conflicting requirements and facilitate reconciliation of these issues
- Participating in standards development and revision processes
- Drafting and disseminating studies, white papers, and other reports on standards, interoperability issues, and compatibility issues
- Recommending and promoting the adoption and use of standards and conformity assessment requirements
- Identifying and informing emergency responders about relevant standards activities, comment periods, and programs
- Tracking and reviewing the progress of standards activities of interest to the IAB



Photo Courtesy of Sacramento County Sheriff's Office

STATE & LOCAL CO-CHAIR

MARTIN HUTCHINGS
 Sacramento California (CA) Sheriff's Department

FEDERAL CO-CHAIR

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

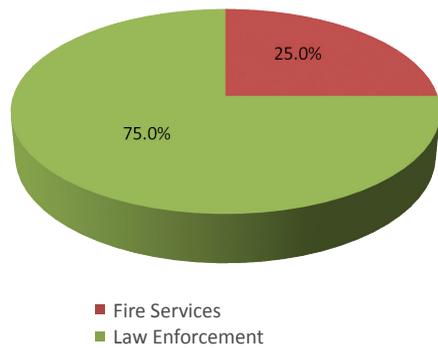
and serving as a feedback loop to the IAB to ensure collaboration and prevent duplication of efforts.

Partnerships

The success of the IAB's standards efforts relies on its partnerships with regulatory agencies, federal agencies funding standards development, and standards development organizations. For example, with regard to equipment, the SCSG serves as the IAB's liaison to these partners in matters relating to performance requirements, test methods, certification requirements, and selection, use, care, and application guides. The SCSG also has initiated working relationships with many federal, nonprofit, and private agencies, including, but not limited to, the following:

- American National Standards Institute (ANSI)
- ASTM International
- International Association of Chiefs of Police (IACP)
- International Association of Fire Chiefs (IAFC)
- International Association of Fire Fighters (IAFF)
- Department of Defense (DOD)
- Department of Homeland Security (DHS)
- Environmental Protection Agency (EPA)
- Institute of Electrical and Electronics Engineers (IEEE)

SCSG Active First Responder Primary Roles



SCSG Professional Roles for non-First Responders

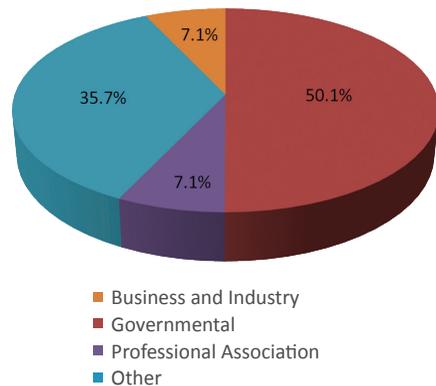




Photo Courtesy of Santa Clara County Sheriff's Office

- National Bomb Squad Commanders Advisory Board (NBSCAB)
- National Fire Protection Association (NFPA)
- National Institute for Occupational Safety and Health, National Personal Protective Technology Laboratory (NIOSH NPPTL)
- National Institute of Justice (NIJ)
- National Institute of Standards and Technology, Law Enforcement Standards Office (NIST/OLES)
- Occupational Safety and Health Administration (OSHA)
- Safety Equipment Institute (SEI)
- Underwriters Laboratories (UL)

IAB Standards Development Priorities and Adopted or Referenced Standards

The SCSG maintains a list of standards that have been adopted or referenced by the IAB. In addition, the SCSG supports and coordinates the IAB's efforts to identify and prioritize standards requirements derived from the emergency responder community.

The SCSG conducts a survey of the IAB membership to identify and prioritize the standards requirements and gaps. The survey responses are statistically analyzed, and a prioritized list is established and vetted by IAB membership to establish the IAB Standards Priorities. This list is published on the IAB website found at www.iab.gov.

FY12 IAB Standards Development Priorities

Tier 1

- All-Hazard Core Competencies for Responders
- Test Method for Mask Leak/Fit Testing Machines
- Standard for Dermal Exposure to Toxic Industrial Chemicals
- Standard (Recommended Practice) for Equipment Training Programs
- Revision to NIJ Standard 0108.00, Ballistic-resistant Protective Materials (1985)
- Blast/Shrapnel Standard for Portable Tactical/Bomb Squad Shields
- Bomb Suit Standard – additional requirements and test methods needed
- Nonstructural fire fighting respiratory protection: open-circuit SCBA and compressed breathing air combination open-circuit SCBA/supplied air respirators (SARs)

Tier 2

- Standard for Personal Decontamination Kits
- Explosive Containment Vessel Standard
- Mass Personnel Decontamination System
- Guidance for Decontamination of Law Enforcement and Emergency Response Vehicle Interiors
- Portable Explosive Detector Standard

Tier 3

- Standard for Responder Credentialing During Emergency Response
- Robot Operator Self Evaluation/Training Program



Standards Coordination SubGroup

- Facial Recognition System Standard
- License Plate Reader System Standard

FY12 IAB Adopted Standards

- **ASTM E2270-10:** Operational Guidelines for Initial Response to a Suspected Biothreat Agent
- **ASTM E2458-10:** Standard Practices for Bulk Sample Collection and Swab Sample Collection of Visible Powders Suspected of Being Biothreat Agents from Nonporous Surfaces
- **ASTM E2639-12:** Standard Test Method for Blast Resistance of Trash Receptacles
- **ASTM E2740-12:** Standard Specification for Trash Receptacles Subjected to Blast Resistance Testing
- **ASTM E2831/E2831M-11:** Standard Guide for Deployment of Blast Resistant Trash Receptacles in Crowded Places
- **Weapons Technical Intelligence (WTI) Improvised Explosive Device (IED) Lexicon**
- **ASTM F792-08:** Standard Practice for Evaluating the Imaging Performance of Security X-Ray Systems
- **NIJ Standard-0117.00:** Public Safety Bomb Suit Standard
- **Suite of 15 ASTM E54.08 Robotic Standard Test Methods as listed below:**
 - > **ASTM E2521-07a** Standard Terminology for Urban Search and Rescue Robotic Operations
 - > **ASTM E2566-08** Standard Test Method for Determining Visual Acuity and Field of View of On-Board Video Systems for Teleoperation of Robots for Urban Search and Rescue Applications
 - > **ASTM E2592-07** Standard Practice for Evaluating Cache Packaged Weight and Volume of Robots for Urban Search and Rescue
 - > **ASTM E2801-11** Standard Test Method for Evaluating Emergency Response Robot Capabilities: Mobility: Confined Area Obstacles: Gaps

Membership

CHARLES CORDOVA

Seattle (WA) Fire Department

ALIM FATAH

National Institute of Standards and Technology

JEFF FINN

Fairfax County (VA) Police Department

KATHLEEN HIGGINS

*Department of Homeland Security,
Science and Technology Directorate,
First Responder Group*

KAREN HOUSE

*Department of Defense, Joint Project
Manager Guardian*

LISA LYON

*United States Army-Joint, Interagency,
Intergovernmental & Multinational
Program*

TIM REHAK

*Centers for Disease Control and
Prevention, National Institute for
Occupational Safety and Health*

DEBRA STOE

National Institute of Justice

MARK STOLOROW

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

JONATHAN SZALAJDA

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

BRIAN WASHBURN

*Santa Clara County (CA) Sheriff
Department*

Subject Matter Experts

JASON ALLEN

Intertek Testing Labs

GREGORY CADE

National Fire Protection Association

STEVEN CORRADO

Underwriters Laboratories

MATTHEW DUGGAN

Boca Raton (FL) Police Department

PAT GLEASON

Safety Equipment Institute

RICK LAKE

ASTM International

CASSY ROBINSON

Savannah River National Lab

- > **ASTM E2802-11** Standard Test Method for Evaluating Emergency Response Robot Capabilities: Mobility: Confined Area Obstacles: Hurdles
- > **ASTM E2803-11** Standard Test Method for Evaluating Emergency Response Robot Capabilities: Mobility: Confined Area Obstacles: Inclined Planes
- > **ASTM E2804-11** Standard Test Method for Evaluating Emergency Response Robot Capabilities: Mobility: Confined Area Obstacles: Stairs/Landings
- > **ASTM E2826-11** Standard Test Method for Evaluating Emergency Response Robot Capabilities: Mobility: Confined Area Terrains: Continuous Pitch/Roll Ramps
- > **ASTM E2827-11** Standard Test Method for Evaluating Emergency Response Robot Capabilities: Mobility: Confined Area Terrains: Crossing Pitch/Roll Ramps
- > **ASTM E2828-11** Standard Test Method for Evaluating Emergency Response Robot Capabilities: Mobility: Confined Area Terrains: Symmetric Stepfields
- > **ASTM E2829-11** Standard Test Method for Evaluating Emergency Response Robot Capabilities: Mobility: Maneuvering Tasks: Sustained Speed
- > **ASTM E2830-11** Standard Test Method for Evaluating the Mobility Capabilities of Emergency Response Robots Using Towing Tasks: Grasped Sleds
- > **ASTM E2853-12** Standard Test Method for Evaluating Emergency Response Robot Capabilities: Human-System Interaction (HSI): Search Tasks: Random Mazes with Complex Terrain
- > **ASTM E2854-12** Standard Test Method for Evaluating Emergency Response Robot Capabilities: Radio Communication: Line-of-Sight Range
- > **ASTM E2855-12** Standard Test Method for Evaluating Emergency

Response Robot Capabilities: Radio Communication: Non-Line-of-Sight Range

- **NFPA 1801:** Standard on Thermal Imagers for the Fire Service
- **NFPA 1977:** Standard on Protective Clothing and Equipment for Wildland Fire Fighting
- **NFPA 1983:** Standard on Life Safety Rope and Equipment for Emergency Services
- **NFPA 1984:** Standard on Respirators for Wildland Fire Fighting Operations
- **NFPA 1992:** Standard on Liquid Splash-Protective Ensembles and Clothing for Hazards Materials Emergencies
- **NFPA 1994:** Standard on Protective Ensembles for First Responders to CBRN Terrorism Incidents
- **NFPA 2112:** Standard on Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire
- **NFPA 2113:** Standard on Selection, Care, Use, and Maintenance of Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire
- **NFPA 1600:** Disaster/Emergency Management and Business Continuity Programs

The adopted Standards List located at the end of the Standardized Equipment List (SEL) includes standards officially adopted by the IAB.

Accomplishments

During the past year, the IAB has successfully influenced the development of priorities for standards, as well as the revision of several CBRN and all-hazards related standards, specifically the following:

- Continued to expand its membership and, as a result, was able to make great progress on a number of critical initiatives.
- Continued to serve as the IAB's liaison on the joint Association of Analytical



Communities (AOAC)/ANSI/ASTM working groups responsible for the revision of several relevant explosive and biological sampling standards.

- Continued to serve as the IAB's liaison to numerous NFPA technical committees, including the NFPA Protective Clothing and Equipment Technical Correlating Committee and the NFPA Hazardous Materials Protective Clothing and Equipment Committee.
- Continued to promote the DHS program requirement that funds used specifically for the purchase of CBRNE equipment meet DHS established or adopted performance standards.
- Participated in ASTM standards development activities in the areas of chemical detector standards, response robot test methods, and decontamination equipment standards.
- Implemented new procedures for the identification of standards for adoption and ultimate adoption of standards by the IAB, and for the identification and prioritization of new standards development requirements.
- Used processes developed by SCSG last year, which accelerated the adoption of standards. The list of currently adopted standards can be found at the IAB website, www.iab.gov.

Current Initiatives

The following are among the equipment performance standards activities to which the SCSG is currently contributing:

- Revision of ASTM Chemical Detection and Equipment Certification Standard
- Continued NIOSH, Edgewood Biological Chemical Center (ECBC), and NIST development of standards and test procedures for all classes of CBRN respirators, including CBRN combination self-contained breathing apparatus (SCBA) units, CBRN supplied-air respirators, and closed-circuit SCBAs
- Continued support of standards development activities in ASTM for urban search and rescue robots
- Support of work being done by NIST on the Vehicle Borne Improvised Explosive Device (VBIED) Robotic Standard Test Methods
- Continued support of the revision and update to the NIJ Law Enforcement CBRN Ensemble suite of standards.

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.

MARTIN HUTCHINGS

Sacramento County (CA) Sheriff's Department

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

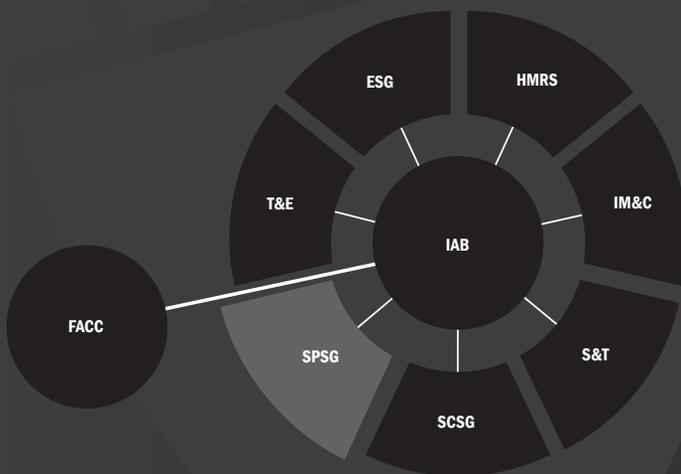
PHILIP J. MATTSON

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

Philip Mattson serves as the Acting Director of the Office of Standards, and Acting Standards Executive for the DHS within the Office of Standards, Acquisition Support and Operations Analysis Group, at the DHS Science and Technology Directorate. As part of his duties, he coordinates and manages the broad portfolio of standards development projects executed through the Office of Standards. Prior to coming to DHS, he served as the Program Manager for Critical Incident Technologies at the Office of Law Enforcement Standards at the National Institute of Standards and Technology, where he managed programs to develop a suite of first responder related standards. He is the federal Co-chair of the Standards Coordination SubGroup of the IAB for Equipment Standardization and Interoperability, and is the Vice Chair of the ASTM E54 Homeland Security Applications Committee and United States Public Sector representative to the ISO Special Advisory Group for Security. He holds a Bachelor's Degree in Nuclear Engineering Technology from Oregon State University, and a Master's Degree in Physics from the Naval Postgraduate School. He has received extensive training in nuclear weapons and radiological incident management, and is a registered Professional Engineer. He is a retired Army officer, serving 20 years as a nuclear physicist and in the Corps of Engineers.

Strategic Planning SubGroup

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





Strategic Planning SubGroup (SPSG)

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

Roles and Functions

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

Ongoing Projects

- Coordinate IAB feedback to the National Security Staff on interagency policy development and review

- Identify existing and future plans, policies, and doctrinal initiatives that would benefit from IAB input
- Build relationships with associated emergency services policymakers and organizations

FY2012 Projects and Accomplishments

- Provided stakeholder feedback to the Presidential Policy Directive-8 (PPD-8) implementation plan through interactive briefings from the Federal Emergency Management Agency (FEMA) PPD-8 Program Executive Office
<http://www.fema.gov/ppd8>
- Supported Department of Homeland Security (DHS) strategic planning efforts, primarily through workshop and focus group participation in the FEMA Strategic Foresight Initiative (SFI)
<http://www.fema.gov/strategic-planning-analysis-spa-division/strategic-foresight-initiative>
- Supported the review and interagency coordination of risk assessment policy, including review of the Emergency Services Self Assessment Tool prototype developed by the DHS Office of Infrastructure Protection—Emergency Service Sector



Photo Courtesy of Seattle Fire Department

STATE & LOCAL CO-CHAIR

MARK ANDERSON
Bellevue (WA) Fire Department

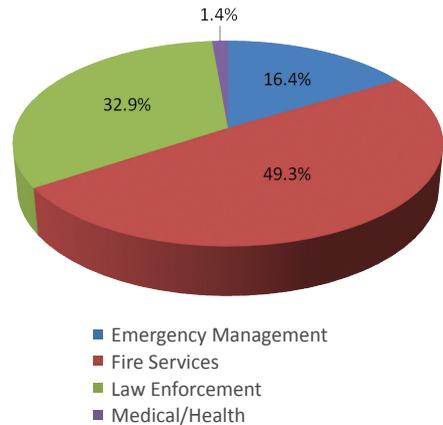
FEDERAL CO-CHAIR

ROBERT JOHNS
*Department of Homeland Security,
 Domestic Nuclear Detection Office*

<http://www.dhs.gov/emergency-services-sector>

- Promoted Department of Defense (DOD) Homeland Defense (HLD) and Defense Support to Civil Authorities (DSCA) policy integration with civilian stakeholders by engaging with National Guard Bureau representatives on Homeland Response Force (HRF) and Chemical, Biological, Radiological, Nuclear, and High Explosive (CBRNE) Response Force Package (CERFP) organization and doctrine
<http://www.ng.mil/features/HomelandDefense/index.html>
- Engaged with FEMA Response Directorate—CBRNE Branch on need for national doctrine to guide public safety response to improvised nuclear device (IND) response
- Initiated IAB support for the Joint Counter Terrorism Workshop Series (JCTAWS)—a FEMA, National Counterterrorism Center (NCTC) and Federal Bureau of Investigation (FBI) project to disseminate lessons learned from complex coordinated (Mumbai-style) attacks
- Participated in Project Responder 3—a DHS Science and Technology (S&T) initiative to determine the future technological needs of emergency responders
<http://firstresponder.gov/Miscellaneous%20PDFs/ProjectResponder3Report.pdf>

SPSG Active First Responder Primary Roles



SPSG Professional Roles for non-First Responders

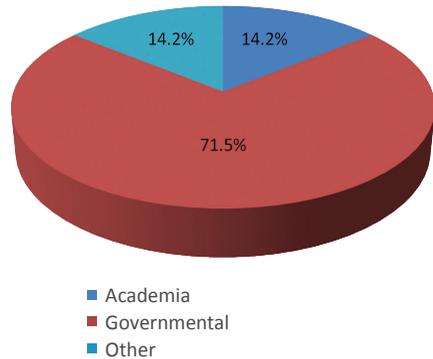




Photo Courtesy of Seattle Fire Department

Membership

AMY DONAHUE

University of Connecticut

JEFFREY DULIN

Charlotte (NC) Fire Department

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

JOHN KOERNER

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

CAROLYN LEVERING

Las Vegas (NV) Office of Emergency Management

J. CLAY MCGUYER

National Guard Bureau, J-3/7

RAYMON MOLLERS

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

DANIEL O'CONNELL

Chicago (IL) Fire Department

MICHAEL SANFORD

Seattle (WA) Police Department

JAMES SCHWARTZ

Arlington County (VA) Fire Department

THOMAS SHARKEY

National Bomb Squad Commanders Advisory Board

A.D. VICKERY

Seattle (WA) Fire Department

MICHAEL WALTER

Department of Homeland Security, Office of Health Affairs, BioWatch

Subject Matter Experts

ARTURO MENDEZ

New York Police Department, Counterterrorism Bureau

JEFF STERN

Homeland Security Studies and Analysis Institute

ROBERT TUOHY

Homeland Security Studies and Analysis Institute

ERIK WOZNIAK

Federal Emergency Management Agency, Office of Policy and Program Analysis

MARK ANDERSON

Bellevue (WA) Fire Department

Mark Anderson is a Firefighter/Paramedic with the Bellevue (WA) Fire Department and has 23 years of experience as a first responder in the Seattle metro area. He has been working at the local, regional, and state levels on homeland security planning and preparedness issues since 1998. His primary areas of focus are: fire service special operations (including mass casualty incident response, structural collapse rescue, hazardous materials response, and medical support to public safety special operations), intelligence fusion, information sharing, and risk assessment and strategic planning.

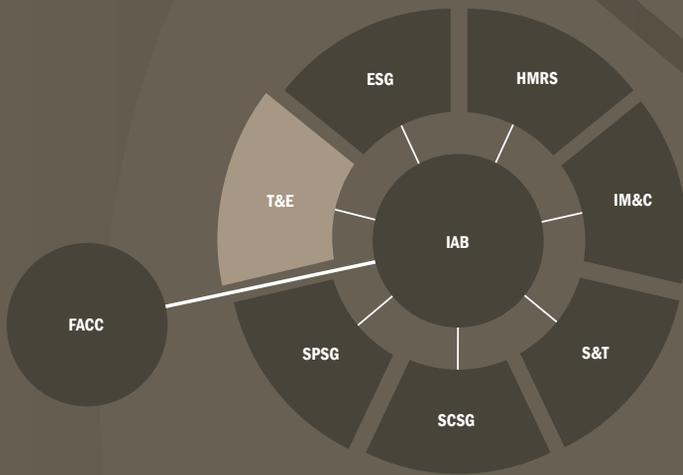
Mr. Anderson's homeland security service and experience includes: medical specialist and medical manager on a FEMA Urban Search & Rescue Task Force (including a deployment to the Hurricane Katrina response); development of regional response protocols for suspicious substances in the wake of the anthrax attacks of 2001; development of regional structural collapse rescue programs and training; management of local and regional homeland security grant programs training of regional first responders in CBRNE response tactics, techniques, and procedures; and development of regional plans for fire service integration in the Washington State Fusion Center.

Mr. Anderson holds a B.A. in Geo-Political History from the University of Washington, and served as a special operations officer in the United States Army for 15 years. He became a member of the IAB in 2009.

ROBERT JOHNS

*Department of Homeland Security,
Domestic Nuclear Detection Office*

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



Training and Exercises SubGroup

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

T&E



Training and Exercises (T&E) SubGroup

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

Membership

The T&E SubGroup consists of representatives from local, state, and federal responder agencies and institutions engaged in responder T&E development and delivery. A goal of the SubGroup is to engage all of the response disciplines, as defined by the Department of Homeland Security Federal Emergency Management Agency (DHS FEMA) National Preparedness Directorate. The T&E SubGroup also draws upon a wide range of subject matter experts (SMEs), both within and outside the InterAgency Board (IAB).

Roles and Functions

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

lessons learned to support T&E program development and improvements

- Facilitate the implementation of T&E programs and standards that support individual competencies and organizational capabilities.

Initiatives and Progress

The IAB membership and federal partners recognize that, in addition to the core mission of recommending appropriate responder equipment and performance standards for their equipment, a crucial need exists to provide guidance on the training required to effectively and safely use the equipment. The basis for this guidance is to enhance preparedness capabilities and to improve responder performance and safety.

The following initiatives were addressed by the T&E SubGroup in FY 2012:

- In cooperation with the Equipment SubGroup, published best practice documentation for the evaluation of manufacturer and vendor provided training that will effectively meet user needs. The best practice document is intended to assist purchasers in becoming educated



Photo Courtesy of Seattle Fire Department

STATE & LOCAL CO-CHAIR

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

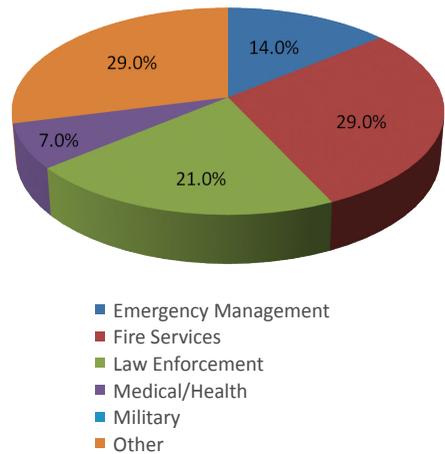
FEDERAL CO-CHAIR

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

consumers of manufacturer and vendor provided training for equipment acquired from the Authorized Equipment List or Standardized Equipment List (AEL/SEL). The document is posted on the IAB web site (www.iab.gov) and the Responder Knowledge Base.

- Published guidance documentation to assist response organizations in the selection of modeling, simulations, and simulators. This resource includes questions for purchasers to ask prospective vendors so that the purchasing agency can determine if a particular product meets its training and operational requirements. This document is posted on the IAB web site and the Responder Knowledge Base.
- Categorized and updated training requirements for equipment included in the SEL to assist in equipment procurement by providing guidelines on operator proficiency.
- Identified the training required (federal, state, local, and tribal) to successfully tie performance of tasks to overall capability development and sustainment.
- For each SEL item, maintained and updated core training required to operate the equipment and also categorized each item as having minimal, moderate, or extensive training requirements, for initial and sustainment training. This enables responders to consider total cost of ownership for equipment items by highlighting initial and sustainment training requirements in addition to procurement costs. The following definitions are

T&E Active First Responder Primary Roles



T&E Professional Roles for non-First Responders

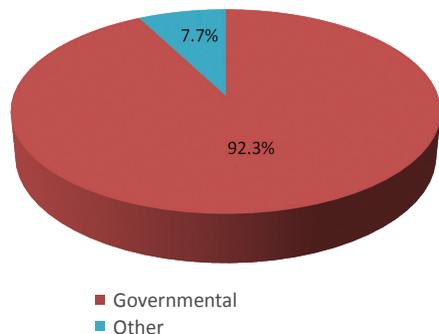




Photo Courtesy of Huntington County Emergency Management Agency

used to indicate training requirements for each item:

- > Core training is defined as the fundamental baseline knowledge, skills, and abilities required for mission specific assignments. For example, an Emergency Medical Technician—Intermediate or Law Enforcement Patrol Officer.
 - > Initial training is defined as the training required for a responder competent in a specialization to achieve competency-based knowledge, skills, and abilities beyond day-to-day duties. Initial training requirements for SEL items are presented as minimal (<1 day), moderate (1-2 days), or extensive (>2 days). For example, competency-based training reflects the use of:
 - » New detection equipment by a certified HazMat technician; or
 - » Specialized personal protective clothing and equipment (PPE) employed by Special Weapons and Tactics (SWAT) officers, Explosive Ordnance Detection (EOD) teams, or Crime Scene Technicians.
 - > Sustainment training is defined as training required to maintain competency-based knowledge, skills, and abilities. Sustainment training requirements for SEL items are presented as minimal (<1 day), moderate (1-2 days), or extensive (>2 days).
- Supported the efforts of federal agencies to explore modeling and simulation training technologies to identify viable, utilitarian applications, with the intent to advocate for more effective selection and implementation approaches that meet the needs of the response community.
 - Provided input to the Standards Coordination SubGroup on the development, adoption, and implementation of appropriate and relevant training standards.
 - Developed, implemented, and analyzed three surveys to identify gaps for current training in Chemical, Biological Radiological, and Nuclear (CBRN) response that address the concerns of the public health laboratories in the Laboratory Response Network (LRN), law enforcement, and hazardous materials response teams.
 - Developed, implemented, and analyzed results of a training survey on initial and sustainment hazardous materials response training provided by the fire service. A white paper relating the relevant outcomes is in development.
 - Delivered a briefing on the IAB focused on T&E SubGroup mission, roles, and resources at the annual FEMA Training and Exercise Conference attended by Regional Training Managers and Regional Exercise Officers.

Ongoing Commitments

- Continue to be a national, interdisciplinary sounding board for T&E needs, doctrines, and programs. This task is



essential in focusing funds and resources on relevant, operationally sound T&E programs.

- Provide input on the development, adoption, and implementation of appropriate and relevant T&E standards and requirements for the response community.
- Enhance responder safety through the sustainment of marketing and information programs pertaining to development and implementation of respiratory protection programs and PPE.
- Explore opportunities to improve the delivery of equipment-specific training through recommended instructional design measures.
- Identify critical performance-based T&E needs through engagement with the response community.
- Support the emergency preparedness community in the development of training standards, with an emphasis on matching training requirements to responder equipment.
- Review and provide input to improve the operational applicability of T&E doctrine and programs that impact the emergency preparedness community.
- Promote instructional systems design-based models, such as analysis, design, development, implementation, and evaluation (ADDIE) for T&E.
- Participate in governance board for the DHS Science and Technology First Responder Group Virtual Training Simulation Program and Pilot, and provide input to program development.
- Coordinate with the respective IAB SubGroups to identify in each equipment

Membership

ARMANDO BEVELACQUA
Orlando (FL) Fire Department

RICHARD BROOKS
Cecil County (MD) Department of Emergency Services

TERRENCE CLOONAN
Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, National Personal Protective Technology Laboratory

EDWARD DADOSKY
Cincinnati (OH) Fire Department, Homeland Security

MARK GIBBONS
Maryland State Police

BEN HAMILTON
Technical Support Working Group, Training Technology Development Subgroup

KAREN HECKMANN
United States Occupational Safety and Health Administration

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

JAMIE TURNER, III
Delaware Emergency Management Agency

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

ROY WAUGH
Snohomish County (WA) Fire District #7

BRIAN WHITE
Federal Bureau of Investigation Laboratory, Hazardous Materials Operations Unit

Subject Matter Experts

BARBARA WISNIEWSKI BIEHN
Homeland Security Training Consultant

TOM BRANDON
Department of Homeland Security, Domestic Nuclear Detection Office

TRACY FRAZZANO
Montclair (NJ) Police Department

JOHN INCONTRO
Los Angeles (CA) Police Department

JOEL LESON
International Association of Chiefs of Police

PAMELA L'HEUREUX
York County (ME) Emergency Management

CARL MAKINS, JR.
Charleston County (SC) Sheriffs Department

ANTHONY MUSSORFITI
Fire Department, City of New York (Retired)

JAMES REMINGTON
National Institutes of Health, National Institute of Environmental Health Sciences

GENE RYAN
Chicago (IL) Fire Department

category the minimal, moderate, or extensive training requirements based on initial and sustainment training required to operate the equipment.

- Develop a white paper based on the analysis of the three surveys regarding training gaps identified by the Public Health Laboratories, Law Enforcement, and Hazardous Materials Response Teams related to CBRN response.

Priorities for FY 2013

- Provide input and feedback to Nevada National Security Site (NNSS) Counter Terrorism Operations Support on the Improvised Nuclear Device (IND) Awareness, Incident Commander, and Key Leaders Training Programs currently under development
- Provide input into the development of training and lessons learned support materials related to the Operation Jack Rabbit catastrophic release project in support of Transportation Security Administration (TSA) and the Technical Support Working Group (TSWG)
- Support the Bomb Squad Maritime Response training program being developed by the National Bomb Squad Commanders Advisory Board (NBSCAB) and TSWG
- Assist FEMA in broadening the reach of their Joint Counter Terrorism Awareness Workshop (JCTAWS) series
- Participate in the development of the Law Enforcement Personal Protective Equipment Standards and Training process, as requested by the National Institute of Justice
- Address the requirements of the Federal Agency Coordination Committee (FACC) as they relate to the T&E mission
- Develop a method to gather emerging T&E needs from the broader response

community, including reviewing Naval Postgraduate School Center for Homeland Security and Defense thesis topics.

Future Initiatives

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

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

Summary

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

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

The IAB T&E SubGroup endorses the exercise cycle as cited in the Homeland Security Exercise Evaluation Program (HSEEP). Exercises serve to validate plans and training, and, as such, are a critical component in the cycle of preparedness.

GREGORY G. NOLL

*Program Manager
South Central (PA) Task Force*

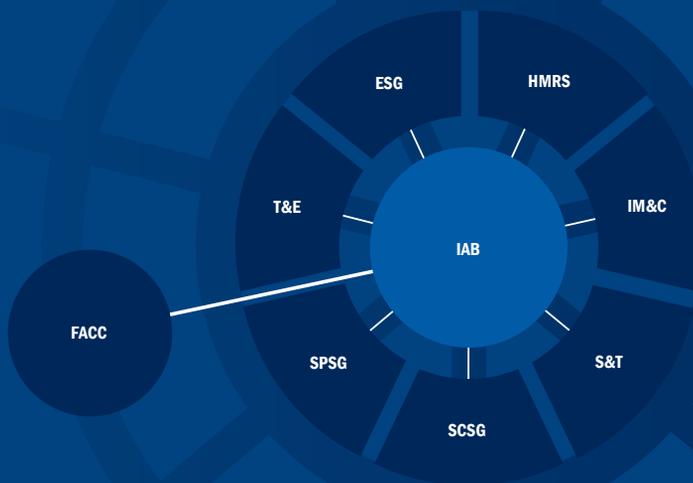
Greg Noll is the Program Manager for the South Central (PA) Regional Task Force, one of nine regional task forces established throughout Pennsylvania, as well as the HazMat and Weapons of Mass Destruction (WMD) Manager for the PA Task Force-1 federal urban search and rescue unit. A retired member of the U.S. Air Force Reserve with over 29 years of service, Mr. Noll has served as an SME for various DOD hazardous materials and counter terrorism response training programs.

Mr. Noll has 41 years of experience in the fire service and emergency response community, and is the co-author of nine textbooks on hazardous materials emergency response and management topics. In 2010, he received the William Patterson Lifetime Achievement Award from the California hazardous materials emergency response community for his significant contributions to the hazardous materials emergency response and training communities, and in 2011 was the recipient of the John M. Eversole Lifetime Achievement Award by the International Association of Fire Chiefs (IAFC), for his leadership and contributions to further and enhance the hazardous materials emergency response profession.

WAYNE E. YODER

*Training Specialist, Hazardous Materials Program
DHA/FEMA/U.S. Fire Administration,
National Fire Academy*

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



IAB SEL Summary

SEL Summary

FOREWORD

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

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

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

Alignment with the DHS Authorized Equipment List

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

the responder community could easily obtain grant allowability information from DHS alongside the features and operating consideration information contained in the SEL.

The SEL and AEL each contain 21 sections, as follows:

1. Personal Protective Equipment
2. Explosive Device Mitigation and Remediation Equipment
3. CBRNE Operational and Search and Rescue Equipment
4. Information Technology
5. Cyber Security Enhancement Equipment
6. Interoperable Communications Equipment
7. Detection
8. Decontamination
9. Medical
10. Power
11. CBRNE Reference Materials
12. CBRNE Incident Response Vehicles
13. Terrorism Incident Prevention Equipment
14. Physical Security Enhancement Equipment
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

Until last year, Section 16 of the DHS’s AEL was entitled “Agricultural Terrorism Prevention, Response, and Mitigation Equipment”, and was not included in the SEL. The IAB and DHS undertook a complete revision of this section in 2011, renaming it “Animals and Plants,” and the first eight items in this section were incorporated into the SEL. The IAB continues to work closely with FEMA’s Grant Programs Directorate

to ensure the closest possible correlation between the two lists.

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 on page 76).
- 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.”

IAB Equipment SubGroup

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

2012 Changes

The 2012 SEL includes 686 items, 38 of which have been changed or added in this edition. The only “deletion” in this edition was actually a replacement of the Remotely Piloted Vehicles item with three new Remotely Operated Vehicle items: land, submersible, and airborne. Seven new items were added: wildland fire fighting air purifying and powered air purify-

ing respirators in Section 1; a man-overboard and marine personnel tracking system, also in Section 1; the three previously-mentioned remotely operated vehicles in Section 3; and an alarm system for vehicles carrying canine resources to alert handlers of excessive heat conditions, also in Section 3. The net increase for 2012 is 6 items.

The impact by section is summarized in the following table:

2012 SEL Section Impact Summary

Section Title	Changes	Additions	Deletions
1. Personal Protective Equipment	3	3	
2. Explosive Device Mitigation and Remediation Equipment	2		
3. Operational and Search & Rescue Equipment	3	4	1
4. Information Technology	8		
5. Cyber Security Enhancement Equipment	5		
6. Interoperable Communications Equipment	1		
7. Detection	3		
8. Decontamination	0		
9. Medical	3		
10. Power	0		
11. Reference Materials	0		
12. Incident Response Vehicles	1		
13. Terrorism Incident Prevention Equipment	0		
14. Physical Security Enhancement Equipment	0		
15. Inspection and Screening Systems	1		
16. Animals and Plants	0		
17. CBRNE Prevention and Response Watercraft	0		
18. CBRNE Aviation Equipment	1		

19.	CBRNE Logistical Support Equipment	0		
20.	Intervention Equipment	0		
21.	Other Authorized Equipment	0		

Training Requirements

The inclusion of Training Requirements for each SEL item began in the 2008 Edition. These requirements were developed by the Training & Exercises 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.

Selection Factors and Mission-Specific SubLists

Early editions of the SEL included “selection factors” to provide an alternate method of referencing SEL items. The goal was to allow searches based upon a combination of mission factors, usually one threat/environment factor and one personnel-related factor. In 2009, the ESG began examining the efficacy of

these selection factors. They found that the use of unique factor definitions for different SEL sections was confusing to users, and that in some cases factors were defined merely to “force-fit” the selection scheme for a given section. Further, the apparent usage of these factors was too low to justify the effort involved in maintenance.

While reviewing the selection factors for 2010, the ESG noted that the list developed in 2008 for Medical Points of Dispensing (the POD-List) was relatively well understood and easy to use. Instead of requiring a matrix, the POD-List was a simple “sublist” in which any applicable SEL item from any section was checked for inclusion. A second sublist for Mortuary Operations was already being created by the Health, Medical, and Responder Safety SubGroup. This prompted a decision by the ESG to abandon the selection factor approach in the 2010 edition for all sections except Section 1, and to utilize “Mission Specific SubLists” to replace the selection factor process.

This edition more than doubles the previous number of Mission Specific SubLists, with the following 20 MSSLS now online:

- Law Enforcement: Aviation
- Law Enforcement: Bomb Squad
- Law Enforcement: Dive Team
- Law Enforcement: Forensics Technician
- Law Enforcement: Mobile Field Force
- Law Enforcement: SWAT/Tactical Team
- Medical: Point of Dispensing
- Medical: Basic Life Support
- Medical: Advanced Life Support
- Medical: Pre-Hospital
- Medical: Hospital
- Medical: Public Health
- Medical: Disaster Stockpile
- Mortuary Operations
- Mass Care/Shelter
- 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

Additional sublists are being developed for 2013, including a new set of MSSLS for the National Guard Bureau Homeland Response Force.

Elimination of Printed SEL in favor of CD-ROM

Since adding features and operating considerations information in 2004, the printed version of the SEL expanded steadily. As a result, the 2008 edition became the first to “streamline” the printed SEL to include only the SEL Number, Title, and Description of each item. With both size and costs increasing, the 2011 edition took the next logical step: rather than lay out and print a partial list, the entire SEL was stored on the CD-ROM located inside the back cover of the Annual Report document. This strategy continues with the inclusion of a 2012 SEL CD-ROM in this report. It contains both PDF versions of the printed document and a complete interactive version of the SEL. The SEL on the CD-ROM is formatted identically to the on-line SEL, contains complete information on every item, and is viewable offline on virtually any computer using a Web browser.

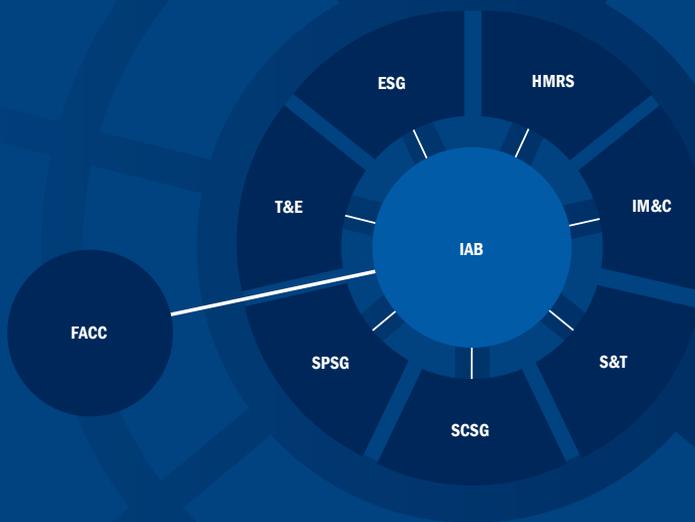
Online Versions of the SEL

The master, interactive version of the 2012 SEL is accessible on line at the IAB web site (www.iab.gov). As mentioned above, this version of the SEL will always contain the latest updates. The IAB site also allows users to download the IAB Annual Report in PDF format.

Another version of the SEL is available as part of the Responder Knowledge Base (RKB), at www.rkb.us. The RKB’s SEL display provides links to related standards, products, grants, and other equipment-related information, as well as an integrated display option that combines elements from the SEL and AEL.

Summary

The 2012 SEL represents the collective efforts of the InterAgency Board members and several related support organizations to provide recommendations for response to emergencies, disasters, and CBRNE incidents. Like all previous versions, it is intended to provide the best possible information in support of all emergency responders. Suggestions and comments are welcome.



Appendix

Summary of Current Research and Development by SEL Category

Project	Description	Managing Agency/ Participants	Availability/Status	TRL
SEL Category 01- Personnel Protective Equipment				
Enhanced Performance Tactical Chemical, Biological, and Radiological Boot	An enhanced performance CBR boot providing protection against chemical warfare agents, toxic industrial chemicals and materials, and flash fire. The boot is designed to meet the component requirements of National Fire Protection Association (NFPA) 1994, Standard on Protective Ensembles for First Responders to CBR Terrorism Incidents, and NFPA 1971, Standard on Protective Ensembles for Structural and Proximity Fire Fighting.	www.tswg.gov	Conducting operational field and service life testing. North Carolina State University Textile Protection and Comfort Center/ Globe Firefighter Suits, Falcon Performance Footwear/W. L. Gore & Associates.	8
Multi-purpose Threat Glove	A multipurpose glove that protects against cuts, punctures, and pathogen threats. The gloves are slip-resistant but are thin and pliable enough to retain manual dexterity.	www.tswg.gov/ TSWG/NIJ	Conducting operational testing. Warwick Mills, Inc.	8
Low Profile Escape Mask	Short-duration protective mask to escape from a contaminated area and meet requirements of the National Institute for Occupational Safety and Health Standard for Chemical, Biological, Radiological, and Nuclear—Self-Contained Escape Respirator (September 2003). Packaged mask is expected to approximate the size of a daily planner to make it easily portable.	www.tswg.gov	Ongoing development/testing.	5
CB/Smoke Escape Hood	Provides 15 minute escape capabilities from smoke and chem/bio incidents.	www.tswg.gov	Ongoing development/testing. Essex Inc.	5
End-of-Service-Life Indicator for Respirator Cartridges	System to indicate remaining service life of chemical filter cartridges.	NIOSH/NPPTL/ DOD	Ongoing development.	5
Land Warrior Project	Integrated protection, detection, and communications ensemble for soldiers.	www.natick. army.mil	Ongoing development.	6
Long Duration Tactical SCBA	A lightweight, low-cost, low-profile, long-duration closed-circuit SCBA (rebreather) for law enforcement tactical operations.	www.tswg.gov	Development performance testing completed. Vendor will seek NIOSH certification. www.technical-productsinc.us	8
Next-Generation Bomb Suit	Improved bomb suit with integrated chemical protection.	www.tswg.gov	Ongoing development.	6
Next Generation CB Garment	A garment that will provide NFPA 1994, Class 3 protection while providing a reduction in garment weight, bulk, and thermal burden and will be capable of being worn unobtrusively.	www.tswg.gov	Ongoing development.	6
Full Spectrum Ballistic Eyewear	Full-spectrum ballistic eyewear with an electrochromatic film to rapidly increase or decrease light transmission in response to the ambient light.	www.tswg.gov	Ongoing development.	6

Project	Description	Managing Agency/ Participants	Availability/Status	TRL
SEL Category 01- Personnel Protective Equipment - Continued				
Multi-Threat Concealable Body Armor	Design and development of a Multi-Threat Concealable Body Armor (MTCBA) system that will meet the performance standards for NIJ Level II ballistic protection and NIJ Level I Spike and P1 Knife protection while not compromising wearability, comfort, or maintainability.	www.tswg.gov	Ongoing development, test and evaluation.	6
SEL Category 02- Explosive Device Mitigation and Remediation				
Next-Generation Handheld Explosives Detector	Improved handheld explosive detector for residue, imaging, and personnel screening.	www.tswg.gov	Ongoing development.	5
Homemade Explosives Containment Guide	Standardized containment guidance for the clean-up of chemicals and materials that may be found in laboratories producing illicit explosive materials.	www.tswg.gov Air Force Research Lab (AFRL)	Ongoing development.	7
Dual-Energy X-Ray to Detect Vehicle-Borne Improvised Explosive Devices	Dual-energy X-ray system for the detection of bulk explosives that may be concealed in cars and trucks. Discriminates between organic and metallic objects.	www.tswg.gov	Commercial transition completed. Spectrum San Diego/SAIC	9
Backscatter Walk-through Portal	Ruggedized, modular, walkthrough backscatter system intended for military and civilian use in harsh environments, including severe weather and extreme temperatures.	www.tswg.gov	Ongoing testing/development. Rapiscan Systems Inc.	7
Automatic Target Recognition for Backscatter Portals	Software package for current backscatter X-ray portals to provide privacy filters and automatic target recognition.	www.tswg.gov	Project completed. Functional prototypes available. L3 Communications Service Division	8
X-Ray Explosive Detection System Image Quality Enhancement	Statistical studies to improve the performance of explosive detection system by determining the quantitative relationships between explosives detection, false alarm rates, image resolution, and dual-energy detection capability.	www.tswg.gov/ TSWG/DHS S&T	Ongoing testing/development. Reveal Imaging, GE Global Research Center, with GE Homeland Protection	6
Advanced X-Ray Imaging Single-Sided System	The Advanced X-Ray Imaging Single-Sided System (AXISS) is a non-invasive backscatter X-ray imaging system that can be deployed to the site of a suspected VBIED or suspicious package and used when only one side of the item is accessible to the bomb technician, security guard, or other force protection professional. The system can be manually or robotically employed to interrogate suspect packages.	www.tswg.gov	Operational test and evaluation.	7
SEL Category 03- CBRNE Operations & Search & Rescue Equipment				
Stand off Patient Triage	Device to identify viable patients in mass casualty incident.	www.tswg.gov/ TSWG/DHS S&T	Ongoing testing/development. Prototype available. Boeing	6
Vehicle Retrofit Kit for Mass Casualty Evacuation	An easy-to-install kit that rapidly transforms a transit or school bus into an evacuation vehicle following a large-scale CBRNE incident or natural disaster.	www.tswg.gov/ FDNY	Transitioned to commercial product. Raytheon	8
3-D Personnel Locator	Device to locate personnel in three dimensions.	www.tswg.gov DHS S&T	Ongoing development. TRX Systems Inc.	6

Project	Description	Managing Agency/ Participants	Availability/Status	TRL
SEL Category 04- Information Technology (Software)				
Tool Characterization Guide	Characterize the performance of disruptors against varying sizes of threat devices. This data will be incorporated into a Tool Characterization Guide, which will assist bomb technicians in determining which disruptor needs to be used based on an IED or VBIED threat.	www.tswg.com	Ongoing testing/ development. Battelle Memorial Institute and Sandia National Laboratories	6
SEL Category 05- Cyber Security Enhancement Equipment				
Detection of Novel Attacks Against Network Servers	Intrusion detection of network servers against viruses and cyber attacks.	www.tswg.com	Ongoing development.	6
Passive Network Mapping Tool	Rapidly assess cyber network performance.	www.tswg.com	Ongoing development.	6
SEL Category 06- Interoperable Communications Equipment				
Small, Portable Voice Radio Repeater System	Hockey puck-sized radio repeater system to maintain voice communications in collapsed buildings and tunnels.	www.tswg.com	Prototype available. Operational testing. DTC Inc.	7
Unified Incident Command and Decision Support (UICDS)	Develops a framework based on NIMS/Incident Command System (ICS) and NRP and develops compliant tools to manage and share incident information that will enhance Incident Command Systems and Multi-Agency Coordination common situational awareness and decision support during all types of incidents. UICDS framework will be based on an open-architecture to allow multiple responding organizations (using their own equipment) to jointly manage personnel, direct equipment, and seamlessly communicate, gather, store, redistribute, and secure any mission-critical information needed by incident commanders and emergency responders during an emergency situation.	DHS S&T	Ongoing testing/ development. FY10-FY11.	7
SEL Category 07 - Detection				
Biological Aerosol Mass Spec (BAMS)	Real-time detection, identification, and warning of hazardous biological agents in complex interferent backgrounds.	www.tswg.gov LLNL	Ongoing development.	6
Distributed Chemical Sensing and Transmission	A fiber optics-based distributed sensing system that rapidly detects, identifies, and alarms the presence of TICs and CWAs at or below IDLH levels.	www.tswg.gov	Operational testing. Functional prototype available. IOS http://www.intopsys.com/dicast.html	8
Handheld Biodetection for First Responders	A study to determine the feasibility of modifying existing Cellular Analysis and Notification of Antigen Risks and Yields (CANARY) equipment for the analysis of suspect powder, based on first responder requirements.	DHS S&T/ PFFPA/ ECBC	Ongoing testing/ development. MIT Lincoln Labs.	6
HME Precursor Wet Chemistry Identification	A simple, compact wet chemistry kit to identify classes of compounds that may be found in improvised laboratories. The steps for sampling to detection are minimized to improve ease of use. The kit will provide improved detection times and accuracy as opposed to available colorimetric systems.	www.tswg.gov	Prototype kits undergoing test and evaluation.	5

Project	Description	Managing Agency/ Participants	Availability/Status	TRL
SEL Category 07 - Detection - Continued				
Person Portable Gas Chromatograph–Mass Spectrometer	A person-portable GC-MS with 20 percent reduced size over currently fielded systems, lower power consumption, and extended battery life. A companion handheld air sampler for quantitative sampling and analysis in field operation environments is in development.	www.tswg.gov	Ongoing development.	7
Mini 1029 Raman Spectrometer	A hand-held spectrometer using a 1029 nanometer laser, with fewer fluorescence issues compared to the commonly used industry standard wavelengths such as 785 nanometers. Enhanced sensitivity and extended battery life due to advanced sensor technology have been included in the system.	www.tswg.gov	Ongoing development. Prototype undergoing operational test and evaluation.	7
SEL Category 08 - Decontamination				
Enzymatic Decontamination	Decontamination solution using enzymes to break down chemical and biological contaminants on equipment and in the environment.	www.sbccom.army.mil	Ongoing development.	5
SEL Category 09 - Medical				
SEL Category 10 - Power				
Fuel Cell for Continuity of Operations	Develop and demonstrate fuel cell technology to improve the logistical sustainment of critical response operations.	www.tswg.gov	Continued operational testing FY11.	8
Miscellaneous				
Nano-Material and Nanotechnology Research and Development	Application of nanotechnology materials for chemical-biological detection and protection.	www.raytheon.com	Ongoing development.	5
Camera Blinder	Enable law enforcement to neutralize surveillance cameras from a distance and ensure that their tactics, techniques, and procedures are not compromised.	www.tswg.gov	Operational field testing.	7
Noise Canceling SCBA	A wireless earpiece capable of providing in-ear voice pickup and communication delivery and the associated printed circuit board (PCB) for incorporation into the communication systems of SCBA manufacturers. The PCB will supplement the existing SCBA microphone signal with the in-ear microphone signal to provide the highest-intelligibility signal possible.	www.tswg.gov	Ongoing development.	6

Summary of Available Research and Development by SEL Category

Project	Description	Managing Agency/ Participants	Availability/Status
SEL Category 01- Personnel Protective Equipment			
Development of Computer-Aided Face Fit Evaluation Methods	Establish updated database of facial characteristics that can be used by respirator manufacturers to develop better products and by NIOSH for certification.	NIOSH/ NPPTL	Completed. Data available.
Improved Chemical Protective Ensemble (ICE)	ICE provides protection against chemical-biological agents with significantly enhanced operational ergonomics and performance. The ensemble provides protection at the NFPA 1994 level and is ideal for physically demanding missions in a chemical or CBRN hazardous environment.	www.tswg.gov/TSWG/CBIRF	Available. Lion Apparel: http://www.lionapparel.com
Risk-Based Protective Clothing Material Permeation Criteria	Develop realistic permeation end-point criteria and test methods for Toxic Industrial Chemicals (TICs) based on dermal toxicity data.	www.tswg.gov/TSWG	Completed. Final recommendations provided to national standards.
CB Tactical Boot	CBRN boot, fully deconable, designed to enhance user comfort and tactical response capabilities in a CBRN environment. Certified to meet CB Terrorism Footwear Element (Class 2) by the Safety Equipment Institute on June 1, 2011 in accordance with NFPA 1994 (2007 Ed.) Standard on Protective Ensembles for First Responders to CBRN Terrorism Incidents	www.tswg.gov/TSWG	Completed. Project team is evaluating the longevity of the new boot design to provide users with a realistic timeline for replacement. Available from Globe Firefighting and Falcon Footwear.
Next Generation Fire Fighter Ensemble	Fire fighter bunker gear with integrated chemical-biological protection. Meets NFPA standards for fire and CB protection.	www.tswg.gov/TSWG/DHS	Completed performance and operational testing. Commercialized versions available from Morning Pride/Total Fire and Globe, respectively, to meet users needs. http://www.totalfiregroup.com . http://www.globefiresuits.com
SEL Category 02- Explosive Device Mitigation and Remediation			
Radio Frequency Shielded Blackout Tent	Rapidly deployable, multi-configuration RF-shielded enclosures evaluated by TSWG. Isolate suspect RCIEDs from external influences. Use patented BEMA RF shielding technology.	www.tswg.gov/TSWG	Available through TEMI Support Services, LLC.
REBUS Enclosed RF Inhibition System	REBUS systems consist of an advanced ECM enclosure and a low-power, optimized modulation jammer. REBUS can effectively isolate an RCIED threat within the ECM enclosure and thereby avoid interference with “friendly” signals. REBUS systems are intended for public safety use at mass transit settings, building access checkpoints, any explosives detection/screening station, and venues without timely access to bomb squads or jamming equipment.	www.tswg.gov/TSWG	Available for purchased only by U.S. Federal, State, and local government agencies. Defense Life Sciences, LLC. www.DLSci.com
Power Hawk Integration for Robotic Platforms	Integrates the Power Hawk Rescue System as a remotely operated access tool onto the ANDROS F6A robotic platform. Both the Power Hawk Rescue System and the integration kit are available through Remotec.	www.tswg.gov/TSWG	Available. Remotec. Requests for additional information should be sent to iddsubgroup@tswg.gov .

Project	Description	Managing Agency/ Participants	Availability/Status
SEL Category 02- Explosive Device Mitigation and Remediation - Continued			
Pallet Charge Disruptor for Large Vehicle	Provides bomb technicians a means to disrupt the contents of vehicles containing large quantities of explosives in a controlled manner while producing minimal collateral effects. The system is supplied with a binary explosive to reduce the burden of explosives storage logistics and is configured to minimize response time and Time on Target.	www.tswg.gov/TSWG	Available. Mining Resource Engineering, Ltd.,
Tactical Timed Firing Device	Provides civilian bomb disposal technicians a small, reliable, multi-use, timed firing device to initiate energetic charges and tools. The device is capable of firing multi-sized shock tube, electrical blasting caps, or electrically primed cartridges.	www.tswg.gov/TSWG	Available. Requests for additional information should be sent to idds subgroup@tswg.gov.
IED Wire Attack Tools	For state and local bomb squads during render safe operations, the KUKRI monitors the electrical system and remotely severs the detonator leads if the IED attempts to function. The SABER provides the capability to determine the state of the switch or the threat from the detonator and provides the technician with the proper render-safe action to take.	www.tswg.gov/TSWG	Available as a kit through A-T Solutions at: http://www.atsolutions.com .
Scalable Disruptor	Scalable vehicle bomb disruptor based on commercial-off-the-shelf plastic containers of various sizes and commercial explosive materials readily available to state and local bomb squads. The tamped detonation wave-shaping device results in a reduction of explosive mass and, therefore, reduced collateral damage. Fabrication information and operational guidance is available on CD-ROM for distribution to accredited bomb squads.	www.tswg.gov/TSWG	Applied Research Associates, Inc. Requests for copies of the CD-ROM should be sent to idds subgroup@tswg.gov.
Protective Boots for Deployed Military Working Dogs	Evaluated canine boots for use in screening operations. Boots extend the working time of the canines and provide protection for the canines in environments where they could step on shattered glass and other debris.	www.tswg.gov/TSWG	Paw, Inc. at http://www.therapaw.net , and Ruff Wear, Inc. at http://www.ruffwear.com
Evaluation and Optimization of Explosives Trace Detection Portals	Transportation Security Administration (TSA) and TSWG study to evaluate and optimize the performance of two explosives trace detection systems, the Smiths Detection Ionscan® Sentinel II and the GE EntryScan3.	TSA and www.tswg.gov/TSWG	GE EntryScan3 portal is available at http://www.geindustrial.com/ge-interlogix/iontrack/prod_entriscan.html . Smiths Detection Ionscan® Sentinel II is available at http://www.smithsdetection.com/eng/1522.php
SEL Category 03- CBRNE Operations & Search & Rescue Equipment			
SEL Category 04- Information Technology (Guides)			
Best Practices Guide for Mail Screening and Handling	8 ½ X 11, 80 page publication for use by U.S. government agencies. Provides efficient and effective processes and procedures to handle and screen mail entering government facilities for biological, chemical, radiological, and explosive threats.	www.tswg.gov/TSWG	Available from the Government Printing Office. Send an e-mail request for quantity desired to pubs@cttso.gov.
Radiological Dispersion Device Recognition Guide	Clear, concise, and easy-to-use Radiological Dispersion Device Recognition Guide for training and operational use by hazardous materials, explosive ordnance disposal/bomb squad, and other public safety personnel. Electronic version available for field laptop use.	www.tswg.gov/TSWG	Available. To order this publication send and e-mail to pubs@cttso.gov.

Project	Description	Managing Agency/ Participants	Availability/Status
SEL Category 04- Information Technology (Software)			
Chemical Data and Hazard Assessment	The Chemical Companion system allows incident commanders to evaluate and select the best PPE ensemble given the chemical agent, concentration, and ambient conditions faced. Facilitates rapid, accurate decisions regarding isolation, protective action distances, and hot-zone stay times. Software tool incorporates initial symptoms of exposure, odor thresholds, PPE breakthrough times, and exposure guidelines.	www.tswg.gov/TSWG	Available. Free to government employees and first responders at: http://www.chemicalcompanion.org .
Personal Heat Stress Calculator	Provides a planning tool for first responders to assess and manage heat risk associated with wearing PPE. Personal digital assistant (PDA) allows users to input workload, PPE configuration, and environmental conditions to obtain optimal work/rest cycles for the first responder.	www.tswg.gov/TSWG	Available. GEOMET Technologies, Inc. at: http://heatcommander.net .
CB Building Protection Protocols	Software that assists engineers in the design/ retrofit of collective protection systems for buildings/critical facilities.	www.tswg.gov U.S. Army Corps of Engineers	Available. UTRC, www.utrc.utc.com
First Responder Radiation Assessment Tools (FRAT) Radiation Biological Dosimetry Tools for First Responders	A software program that contains a number of tools useful to first responders for the management and assessment of casualties of radiation exposure.	www.tswg.gov/TSWG/ Armed Forces Radiobiology Research Institute (AFRRI)	Available to State and Local Government organizations. AFRRI web site at: www.afrri.usuhs.mil .
SEL Category 05- Cyber Security Enhancement Equipment			
Computer Log Collector	A software tool to collect information from a computer hacking incident. A small thumb drive contains the software program and attaches to any USB port on a computer or server. The tool can extract data pertinent to the hacking and store it on the thumb drive, allowing easy downloading to other storage media. The software categorizes, analyzes, and formats the data to make it easy to use by investigators.	www.tswg.gov/TSWG	Available. ID Scientific. jwilkinson@idscientific.com
SEL Category 06- Interoperable Communications Equipment			
SEL Category 07 - Detection			
Hazardous Gas Detection System	Open path, line of sight, IR sensor used for continuous and real-time monitoring of facilities and perimeters at path length up to 100m for hazardous chemical gases/vapors. Uses optical IR spectral analysis and comparative library to rapidly detect and identify chemical agents.	www.tswg.gov/TSWG/ DHS	Available. Avir Sensors http://www.avirsensors.com
Fast Repetition Rate Fluorimeter	The Fast Repetition Rate Fluorimeter II (FRRF II), monitors chemical contamination in water supplies in near real-time by measuring the bio-fluorescence of naturally-occurring algae.	www.tswg.gov/TSWG	Available. http://www.chelsea.co.uk/FASTtrackaSystem.htm
Non-PCR Detection of Bio Agents	A gold nanoparticle- and antibody-based fieldportable assay for rapid detection and identification of biological agents, which is much simpler to use and operate than conventional PCR methods.	www.tswg.gov/TSWG	Available. www.nanosphere-inc.com

Project	Description	Managing Agency/ Participants	Availability/Status
SEL Category 07 - Detection - Continued			
Self-Indicating Radiation Dosimeter	A beta/gamma self-reading radiation dosimeter badge measuring cumulative dose for rapid assessment of radiation exposure so responders can quickly assign triage levels.	www.tswg.gov	Available. JP Labs http://www.jplabs.com/html/about_jp_labs.html
Hardened Benchtop and Handheld Trace Detectors	Assessed and modified design of GE Homeland Security and Smith Detection trace detection systems for operations in rugged and military austere environments.	www.tswg.gov/TSWG	Available.
Total Organic Carbon Detector	An inexpensive, online, total organic carbon detector to quantitatively measure all types of organic carbon dissolved or suspended in water. The system can be used in field water or domestic water supply systems to detect contamination with organic substances.	www.tswg.gov/TSWG/EPA	Completed. Available from OI Analytical
Handheld Explosive Detector Evaluation	Assessed commercial handheld detectors for trace explosives as a way to screen for vehicle-borne improvised explosive devices.	www.tswg.gov	Requests from government agencies for technical report should be sent to edsubgroup@tswg.gov
SEL Category 08 - Decontamination			
Electrostatic Decontamination System	A spray-on decontamination solution for rapid (UV light-activated) neutralization of chemical and biological agents.	www.tswg.gov	Available. www.cleanearthtech.com
Expedient Mitigation of a Radiological Release	Easily applied and removable adsorbent coating systems to mitigate the spread of radiological contamination.	www.tswg.gov Argonne National Labs DHS (S&T)	Available. Istron http://www.isotron.net/
Mass Personnel Decontamination Protocols	A handbook containing consensus-based best practices and procedures for CBR mass decontamination.	www.tswg.gov	Available. https://www.cbrniac.apgea.army.mil/Products/Catalog/Pages/default.aspx
Statistical Tool for Sampling Contaminated Buildings	Provides a statistically valid surface sampling plan for building decontamination following a CB event. Guides the sample collection and decontamination process. This is a software tool to efficiently and effectively focus the efforts of decontamination personnel.	www.tswg.gov/TSWG/Pacific Northwest National Laboratory (PNNL)	Available. Free download at http://dco.pnl.gov/index.htm .
Fibertect® Dry Decon Mitt	Fibertect® Mitt is a three-layer, inert, flexible, drapable, nonwoven composite substrate for absorbing and adsorbing CWAs and TICs. The Mitt design allows for easy clean-up of bulk chemicals on people, weapons and sensitive equipment and can be worn over gloves.	www.tswg.gov/TSWG/DHS	Available. First Line Technology, LLC www.firstlinetech.com
Sensor Web	Sensor Web pods that can be efficiently and cost-effectively deployed in a building to monitor the physical conditions and chemical concentrations in real-time over the Internet. The communication packages on the pods automatically organize themselves into a wireless network, providing a thinking infrastructure for the sensors they carry.	www.tswg.gov/TSWG	Available. SensorWare Systems http://www.SensorWareSystems.com .

Project	Description	Managing Agency/ Participants	Availability/Status
SEL Category 08 - Decontamination			
Wired/Wireless Multi Sensor Environmental Monitor	Distributed sensor system for real-time monitoring of chemical concentrations to ensure the effective gas-phase decontamination of large buildings. Portable sensor system has six interchangeable sensors and supports both wired and wireless internet connections for remote monitoring.	www.tswg.gov/TSWG	Available. Esensors at http://eesensors.com
Plant and Animal Tissue Gasifier	A transportable gasification system for large scale disposal of contaminated plant material and animal carcasses.	www.tswg.gov EPA USDA	Operational testing completed. Prototype available. BGP Inc. http://bgp-inc.com/index.html
SEL Category 09 - Medical			
Ocular Scanner for Chem/Bio Agents	Portable, handheld, and automated triage tool for noninvasive assessment of acute or chronic exposure to TICs, CWAs, and toxins.	www.tswg.gov/DHS S&T	Operational testing concluded. Prototype available. MD Biotech Inc.
SEL Category 10 - Power			
CBRNE Training Technologies			
Agricultural Bioterrorism Response Training	Accredited, modular, agricultural bioterrorism response training curriculum for classroom, CD-ROM, or Web-based distance learning applications.	www.tswg.gov www.aphis.usda.gov	Available.
Portable Chemical/Radiological Simulant Training Kit	Portable simulant training kit for use in decontamination exercises. Simulants are safe and non-toxic to the skin. Simulants mimic vapor pressure and solubility characteristics of G, H, and V agents. Black-light illumination makes a fluorescent taggant in the simulants visible to the trainer to effectively evaluate the trainee's performance in decon operations. The kit also includes a particulate simulant for radiological contamination.	www.tswg.gov/TSWG	Available. Clean Earth Technologies, www.trainsaf.com .
Enhanced CBR Simulant Kit	Non-hazardous visual and odor simulants kit designed to assist a wide range of security and emergency response personnel in recognizing low-purity chemical, biological, and radiological (CBR) materials that fall within plausible terrorist production capabilities. Includes user manual that provides additional information on the properties and possible variations of the materials simulated in the kit.	www.tswg.gov/TSWG	Available. Sales are restricted to federal, State, and local government users and their contractors. Any other sales must be approved by TSWG/CTTSO via an e-mail request to techtrans@tswg.gov .
Explosive Simulant Kit	Hands-on tool containing representative simulants of common commercial and improvised explosive materials, as well as common initiators. These simulants consist of both visual simulants (look) and tactile simulants (look and feel).	www.tswg.gov/TSWG	Available. Sales are restricted to federal, state, and local government users and their contractors. Any other sales must be approved by TSWG/CTTSO via an e-mail request to techtrans@tswg.gov .
IED, HME, and Narcotics Component and Operations Awareness Web-based Course	Web-based course to train law enforcement personnel to differentiate between and respond appropriately to improvised explosives, home-made explosives, and narcotics-related incidents.	www.tswg.gov/TSWG	Available. AT-Solutions. Contact ttdsubgroup@tswg.gov

2012 The InterAgency Board (IAB) *R&D Priority List*



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

Please visit www.iab.gov for more detailed information on the survey and priority items.

1. Emergency Responder Body Worn Integrated Electronics System Development
2. Enhance Communications in Environments that Interfere with Radio Transmissions
3. 3-D Tracking of Personnel
4. Hands-Free Radio Intercom
5. Handheld Standoff Chemical and Explosive Identifier
6. Noise-Filtering Digital Speaker/Microphone for SCBA Facepiece
7. Detection of Airborne Hazards at Fire Scenes
8. Rapid System(s) to Decontaminate Vehicle Interiors
9. Vehicle-Borne Improvised Explosive Device (VBIED) Render Safe Tool
10. APR and PAPER Applicability in the Post Fire Environment
11. Incident Management Accountability System
12. Equipment/Procedures for Interim Field Decon of Firefighting Personnel and Equipment After Structure Fire Fighting
13. Device for Standoff Casualty Triage
14. Guide for Increasing Patient Transport Capability
15. Unknown Substance Field Screening Skills Proficiency Evaluation Program
16. Radio and Battery Usage Rating Standardization
17. Conops Analysis for Robotic Applications within the Fire Service
18. Modeling, Simulation, & Gaming Software Evaluation Tool
19. Proactive Training Resource (PTR) Initiative
20. Equipment/Supply Guide for Relocating Special Needs Evacuees
21. Enhanced Decontamination Capability for Special Needs Victims
22. Weapons Contamination/Decontamination Study

2012 The InterAgency Board (IAB)

R&D Priority List Descriptions

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

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

1.	Emergency Responder Body Worn Integrated Electronics System Development	A body worn electronics system integrating enhanced communications capabilities, locations and tracking capabilities, situational awareness and environmental sensing capabilities, physiological status monitoring capabilities, and respiratory protective equipment status.
2.	Enhance Communications in Environments that Interfere with Radio Transmissions	Portable network extension of current radio capabilities into areas where coverage is prohibited by environment/terrain (e.g. tunnels, canyons, large structures, ships etc.).
3.	3-D Tracking of Personnel	Technology development for tracking operating personnel in a 3-D environment. The research and development of 3-D tracking systems needs to continue until these systems are fielded.
4.	Hands-Free Radio Intercom	Portable radio/accessory combination that allows for hands-free, intercom style communications via portable radios amongst a small group of persons in close proximity to each other ($\leq 30'$), simultaneous ability to listen to a command channel, and the ability to talk on the command channel when keying a microphone.
5.	Handheld Standoff Chemical and Explosive Identifier	Instrument capable of detecting and identifying chemical substances (e.g. CWAs and TICs) and explosives from outside of exposure or contamination zone, at standoff distances. This item must be intrinsically safe, able to withstand temperature and humidity changes, and must be ruggedized for field use.
6.	Noise-Filtering Digital Speaker/Microphone for SCBA Facepiece	Digital radio needs to clearly transmit spoken audio while a responder is wearing an SCBA facepiece. The breathing sounds from the SCBA and any other competing background noise need to be eliminated from the radio's transmission.
7.	Detection of Airborne Hazards at Fire Scenes	More research into advanced technologies for real time evaluation of airborne hazards at fire scenes. This technology must evaluate both gases and vapors which present with acute exposure hazards and well as chronic hazards posed by vapors, gases and airborne particulates.
8.	Rapid System(s) to Decontaminate Vehicle Interiors	Limited research indicates that current infection control and disinfection procedures for ambulance interiors may be ineffective, and are personnel and material extensive. Ambulance resources (crews and equipment) are key components of medical surge capacity. This requirement is essential for protection against contagious and infectious pathogens (capable of a pandemic spread).
9.	Vehicle-Borne Improvised Explosive Device (VBIED) Render Safe Tool	A method for and equipment that will effectively and quickly enter/examine/diagnose/render safe a potential vehicle borne improvised explosive device (VBIED).



10.	APR and PAPER Applicability in the Post Fire Environment	Investigate the potential feasibility to use existing industrial or CBRN APR and/or PAPER technologies for personal protection during the overhaul, origin, cause, investigation, and recovery phases of structure fire operations.
11.	Incident Management Accountability System	An accountability card that holds a radio frequency chip and relays that information to command automatically when you show up on scene.
12.	Equipment/Procedures for Interim Field Decon of Firefighting Personnel and Equipment After Structure Fire Fighting	Quantify the need for field expedient decontamination of firefighter PPE and personnel after structure firefighting operations. If data supports the need, then develop equipment, process, and procedures that can be used to facilitate these activities.
13.	Device for Standoff Casualty Triage	A portable device that provides the capability for stand-off casualty triage that is needed and that locates patients that are still viable.
14.	Guide for Increasing Patient Transport Capability	Written guide on equipment, procedures, and standards for converting non-medical transportation assets to patient transport assets would help to improve the federal, state and local patient and victim transport capability. It should focus on commonly available ground transportation assets but consideration should also be given to including air transportation assets).
15.	Unknown Substance Field Screening Skills Proficiency Evaluation Program	Development of a standardized national proficiency evaluation program and the provision of said program to personnel who have assigned responsibilities to conduct presumptive unknown substance field screening so that personnel can demonstrate proficiency.
16.	Radio and Battery Usage Rating Standardization	Create and adopt a national standard set by the user community for the life span of radios and batteries.
17.	Conops Analysis for Robotic Applications within the Fire Service	R&D is needed to determine how existing and developing robotics technologies can be leveraged for use in the fire service. The first step is a Conops Analysis to determine possible robotics uses in the fire service; this analysis would be used to guide funding for development of fire service oriented robotics technologies.
18.	Modeling, Simulation, & Gaming Software Evaluation Tool	Software tool that users to search for a model, simulation, or simulator appropriate for their particular requirement and receive recommendations based on the criteria developed, the user's constraints, and ranking of relative importance of those criteria.
19.	Proactive Training Resource (PTR) Initiative	A compendium or electronic resource that "proactively" accepts all types of emergency response debriefings, identifies training strengths and challenges from those debriefs, generates an output matrix that identifies trend indicators, and allows users to be directed to a PTR for use in developing training improvement programs.
20.	Equipment/Supply Guide for Relocating Special Needs Evacuees	An equipment and supply guide for the transport and relocation of individuals in nursing homes, homecare, or with special medical needs, with emphases on safety, performance & planning standards, and sources for collaboration & reference.
21.	Enhanced Decontamination Capability for Special Needs Victims	Equipment to decontamination special-needs populations: bariatric, pediatric, service animals, etc.
22.	Weapons Contamination/Decontamination Study	A comprehensive study needs to be conducted by researching weapon cleaning/decontamination policies at CBRIF, Military and weapon manufacturers on the effects of contamination and subsequent decontamination of weapons. A best practice guideline should then be created for the law enforcement agencies.

The InterAgency Board (IAB)

Each year, the IAB releases an Annual Report that highlights the accomplishments and plans of its SubGroups and Committees, as well as a new edition of the Standardized Equipment List (SEL). This CD-ROM contains the FY 2012 Annual Report in PDF format, the 2012 SEL in Excel format, and an interactive version of the 2012 SEL that includes supplemental information beyond that offered in the spreadsheet version. In addition, two PDF listings are provided: a master list of all references used in the SEL, and a list of all standards formally adopted by the IAB.

This CD-ROM contains five separate items:

- FY 2012 IAB Annual Report (PDF)
- 2012 Standardized Equipment List Spreadsheet (Microsoft Excel format)
- 2012 Standardized Equipment List (interactive copy for use by browser, including complete data and Mission Specific SubLists)
- 2012 SEL List of References
- 2012 List of IAB Adopted Standards

THE INTERAGENCY BOARD

1550 CRYSTAL DRIVE, SUITE 601

ARLINGTON, VIRGINIA 22202

WWW.IAB.GOV

