

**U.S. FIRE ADMINISTRATION AND
FIRE GRANT PROGRAMS REAUTHORIZATION:
EXAMINING EFFECTIVENESS AND PRIORITIES**

HEARING

BEFORE THE

SUBCOMMITTEE ON RESEARCH AND TECHNOLOGY
COMMITTEE ON SCIENCE, SPACE, AND
TECHNOLOGY

HOUSE OF REPRESENTATIVES

ONE HUNDRED FIFTEENTH CONGRESS

FIRST SESSION

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CONTENTS

July 12, 2017

Witness List	Page 2
Hearing Charter	3

Opening Statements

Statement by Representative Barbara Comstock, Chairwoman, Subcommittee on Research and Technology, Committee on Science, Space, and Technology, U.S. House of Representatives	4
Written Statement	6
Statement by Representative Daniel Lipinski, Ranking Member, Subcommittee on Research and Technology, Committee on Science, Space, and Technology, U.S. House of Representatives	8
Written Statement	10
Statement by Representative Eddie Bernice Johnson, Ranking Member, Committee on Science, Space, and Technology, U.S. House of Representatives	12
Written Statement	14

Witnesses

Dr. Denis Onieal, Acting Administrator, United States Fire Administration	
Oral Statement	17
Written Statement	20
Chief John Sinclair, President and Chair of the Board, International Association of Fire Chiefs; Fire Chief, Kittitas Valley Fire and Rescue (WA)	
Oral Statement	30
Written Statement	32
Captain John Niemiec, President, Fairfax County (VA) Professional Fire Fighters and Paramedics–International Association of Fire Fighters Local 2068	
Oral Statement	40
Written Statement	42
Mr. Steve Hirsch, First Vice Chair, National Volunteer Fire Council; Training Officer, Sheridan County Fire District #1, Thomas County Fire District #4, and Grinnell Fire Department (KS)	
Oral Statement	51
Written Statement	53
Dr. Gavin Horn, Research Program Director, Illinois Fire Service Institute	
Oral Statement	66
Written Statement	69
Chief H. “Butch” Browning, Jr., President, National Association of State Fire Marshals, Louisiana State Fire Marshal	
Oral Statement	84
Written Statement	86
Discussion	95

Appendix I: Answers to Post-Hearing Questions

Dr. Denis Onieal, Acting Administrator, United States Fire Administration	110
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Appendix II: Additional Material for the Record

Letters submitted by Representative Barbara Comstock, Chairwoman, Subcommittee on Research and Technology, Committee on Science, Space, and Technology, U.S. House of Representatives	114
Letter submitted by Representative Daniel Lipinski, Ranking Member, Subcommittee on Research and Technology, Committee on Science, Space, and Technology, U.S. House of Representatives	124

**U.S. FIRE ADMINISTRATION
AND FIRE GRANT PROGRAMS
REAUTHORIZATION:
EXAMINING EFFECTIVENESS AND PRIORITIES**

WEDNESDAY, JULY 12, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON RESEARCH AND TECHNOLOGY,
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,
Washington, D.C.

The Subcommittee met, pursuant to call, at 10:07 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Barbara Comstock [Chairwoman of the Subcommittee] presiding.

LAMAR S. SMITH, Texas
CHAIRMAN

EDDIE BERNICE JOHNSON, Texas
RANKING MEMBER

Congress of the United States
House of Representatives
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
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***U.S. Fire Administration and Fire Grant Programs
Reauthorization: Examining Effectiveness and Priorities***

Wednesday, July 12, 2017
10:00 a.m.
2318 Rayburn House Office Building

Witnesses

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Chief John Sinclair, President and Chair of the Board, International Association of Fire Chiefs; Fire Chief, Kittitas Valley Fire and Rescue (WA)

Captain John Niemiec, President, Fairfax County (VA) Professional Fire Fighters and Paramedics – International Association of Fire Fighters Local 2068

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Dr. Gavin Horn, Research Program Director, Illinois Fire Service Institute

Chief H. “Butch” Browning, Jr., President, National Association of State Fire Marshals, Louisiana State Fire Marshal

**U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
HEARING CHARTER**

Wednesday, July 12, 2017

TO: Members, Committee on Science, Space, and Technology

FROM: Majority Staff, Committee on Science, Space, and Technology

SUBJECT: Research and Technology Subcommittee hearing
"U.S. Fire Administration and Fire Grant Programs Reauthorization: Examining Effectiveness and Priorities"

The Subcommittee on Research and Technology of the Committee on Science, Space, and Technology will hold a hearing titled *U.S. Fire Administration and Fire Grant Programs Reauthorization: Examining Effectiveness and Priorities* on Wednesday, July 12, 2017 at 10:00 a.m. in Room 2318 of the Rayburn House Office Building.

Hearing Purpose:

The purpose of the hearing is to review the effectiveness and priorities of the United States Fire Administration and the Assistance to Firefighters (FIRE) and Staffing for Adequate Fire and Emergency Response (SAFER) grant programs. The hearing will help inform potential legislation to address current program authorizations that expire on September 30, 2017.

Witness List

- **Dr. Denis Onieal**, Acting Administrator, United States Fire Administration
- **Chief John Sinclair**, President and Chair of the Board, International Association of Fire Chiefs; Fire Chief, Kittitas Valley Fire and Rescue (WA)
- **Captain John Niemiec**, President, Fairfax County (VA) Professional Fire Fighters and Paramedics - International Association of Fire Fighters Local 2068
- **Mr. Steve Hirsch**, First Vice Chair, National Volunteer Fire Council; Training Officer, Sheridan County Fire District #1, Thomas County Fire District #4, and Grinnell Fire Department (KS)
- **Dr. Gavin Horn**, Research Program Director, Illinois Fire Service Institute
- **Chief H. "Butch" Browning, Jr.**, President, National Association of State Fire Marshals, Louisiana State Fire Marshal

Staff Contact

For questions related to the hearing, please contact Jenn Wickre of the Majority Staff at 202-225-6371.

Chairwoman COMSTOCK. The Committee on Science, Space, and Technology will come to order.

Without objection, the Chair is authorized to declare recesses of the Committee at any time.

Good morning, and welcome to today's hearing titled "U.S. Fire Administration and Fire Grant Programs Reauthorization: Examining Effectiveness and Priorities." I now recognize myself for five minutes for an opening statement.

The purpose of today's hearing is to review the United States Fire Administration and the Assistance to Firefighters (FIRE) and Staffing for Adequate Fire and Emergency Response (SAFER) grant programs. The hearing will help inform legislation to address current program authorizations that expire on September 30, 2017.

Fire prevention and safety is literally a matter of life and death. In 2015 there were 1.34 million fires reported in the United States, causing over 3,000 civilian deaths and over 15,000 injuries. In addition to this devastating human loss, fires caused \$14.3 billion in property damage.

As I travel throughout my district and visit with my firefighters and paramedics and first responders, I am constantly reminded of the sacrifices that these brave men and women make on a daily basis to protect their fellow citizens in our community. Last year, sadly, 69 of those brave men and women across the country lost their lives in the line of duty.

Fire prevention has improved dramatically in the last 40 years since Congress passed the Federal Fire Prevention and Control Act in 1974, which created the U.S. Fire Administration and the National Fire Academy, but these numbers are still too high.

USFA and NFA are tasked with data collection, public education, as well as research and training efforts, to help to reduce fire deaths and make our communities and residents safer.

We will hear from the Acting Administrator of the U.S. Fire Administration today about how the agency works to fulfill its mission and learn how we can enhance its efforts to improve fire safety in the United States.

Firefighting activities and funding are primarily the responsibility of states and local communities. However, for the last 15 years the Federal Government has awarded competitive federal grants directly to local fire departments and unaffiliated emergency medical services organizations to help address a variety of equipment, training, and other firefighter-related and EMS needs, and oftentimes those are dealing with new technologies too that we want to make sure you have the best and the latest.

FIRE Act awards provide funding for equipment and training to ensure the safety of our nation's first responders. SAFER Act awards help departments address hiring, recruiting and retaining firefighters to help maintain and increase the number of trained firefighters in local communities.

I know that many professional and volunteer departments in my district rely on these grants so they can continue to provide high-quality fire and emergency services both to their communities, and I know in the instance of my community, they often are helping people throughout the country as well as internationally acclaimed.

So a fine member of one of those departments is here today with us, Captain John Niemiec, from the Fairfax County Fire and Rescue Department. I look forward to hearing his testimony on the needs of the firefighters in his department and around the country.

We have a panel representing state and local fire departments and organizations from around the country: Washington State, Kansas, Louisiana and Illinois. All have different needs, and I look forward to their input on how we can improve the fire safety in all communities and support our nation's first responders.

Last month the horrific Grenfell Tower fire in London that killed over 80 people reminded us we cannot take fire safety for granted. Closer to home, it was just two years ago that a Metro fire injured 70 and killed a Virginia resident who was a grandmother of three. In each case, first responders ran towards the flames and prevented additional lives from being lost.

I look forward to working with my colleagues on both sides of the aisle to move this timely legislation to ensure our nation's firefighters and paramedics have the tools they need to fight and prevent fire.

And with that, I look forward to hearing the testimonies of our witnesses.

[The prepared statement of Chairwoman Comstock follows:]



COMMITTEE ON
SCIENCE, SPACE, & TECHNOLOGY
Lamar Smith, Chairman

For Immediate Release
July 12, 2017

Media Contact: Kristina Baum
(202) 225-6371

Statement of Research and Technology Subcommittee Chairwoman Barbara Comstock (R-Va.)

U.S. Fire Administration and Fire Grant Programs Reauthorization: Examining Effectiveness and Priorities

Chairwoman Comstock: The purpose of today's hearing is to review the United States Fire Administration and the Assistance to Firefighters (FIRE) and Staffing for Adequate Fire and Emergency Response (SAFER) grant programs.

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In addition to this devastating human loss, fires caused \$14.3 billion in property damage.

As I travel throughout my district and visit with firefighters and paramedics, I am constantly reminded of the sacrifices these brave men and women make on a daily basis to protect their fellow citizens in our community. Last year, sadly 69 of those brave men and women lost their lives in the line of duty.

Fire prevention has improved dramatically in the last 40 years since Congress passed the Federal Fire Prevention and Control Act in 1974, which created the U.S. Fire Administration (USFA) and the National Fire Academy (NFA), but these numbers are too high.

USFA and NFA are tasked with data collection, public education, as well as research and training efforts, to help to reduce fire deaths and make our communities and residents safer.

We will hear from the acting administrator of the U.S. Fire Administration today about how the agency works to fulfill its mission and learn how we can enhance its efforts to improve fire safety in the United States.

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Emergency Medical Services (EMS) organizations to help address a variety of equipment, training, and other firefighter-related and EMS needs.

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SAFER Act awards help departments address hiring, recruiting and retaining firefighters to help maintain and increase the number of trained firefighters in local communities.

I know that many professional and volunteer departments in my district rely on these grants so they can continue to provide high quality fire and emergency services to the community.

A fine member of one of those departments is here today, Captain John Niemiec, from the Fairfax County Fire and Rescue Department. I look forward to hearing his testimony on the needs of the firefighters in his department and around the country.

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I look forward to working with my colleagues on both sides of the aisle to move timely legislation to ensure our nation's firefighters and paramedics have the tools they need to fight and prevent fire.

And with that, I look forward to hearing the testimonies of our witnesses.

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Chairwoman COMSTOCK. And I now recognize the Ranking Member, the gentleman from Illinois, Mr. Lipinski, for his opening statement.

Mr. LIPINSKI. I thank you, Chairwoman Comstock.

The authorizations of the U.S. Fire Administration Assistance to Firefighters Grant, or AFG, program as well as the Staffing for Adequate Fire and Emergency Response, or SAFER grant program, expire in just 2 months. Without Congressional action, both programs will terminate on January 2, 2018, under sunset provisions included in the last reauthorization. I hope this Committee will work to get a bill to the President's desk before that time to reauthorize these programs.

I thank our distinguished panelists for being here today and for their service in keeping the American public safe from fire and from other hazardous threats.

In the early 1990s, fires claimed 12,000 Americans lives per year and caused \$11 billion in damage, making the U.S. the leader of all major industrialized countries in per capita deaths and property loss from fire. A 1973 report by the National Commission on Fire Prevention and Control, titled *America Burning*, recommended the establishment of the U.S. Fire Administration and the National Fire Academy.

Thanks in large part to the efforts of those institutions and all of our first responders, the Nation is making progress in lowering fire fatalities. Today's rate of just over 3,000 civilian fire deaths per year is significantly lower than in the 1970s, but it is still one of the highest in the industrialized world. Unfortunately, it will be difficult to reduce fire fatalities and property loss without adequate funding of the Fire Administration and fire grant programs. While appropriated funding levels have remained somewhat flat for the last few years, these levels are well below program authorizations. Critical areas such as firefighter safety, fire protection, and fire data collection and analysis, all of which assist fire service professionals in the field and help keep communities safe, are underfunded.

Career, volunteer, and combination fire departments all face challenges in meeting their day-to-day needs. Local fire departments are the boots on the ground for fire prevention and protection, but when state budgets do not allow for adequate funding to hire firefighters and ensure proper training and access to life-saving protective gear and equipment, there is a federal role in providing funding and technical assistance. The Fire Grants Reauthorization Act of 2012 made significant changes to the fire grant programs to address some of these funding and technical obstacles. Changes included the distribution of AFG fire funding among the various types of fire departments, reducing the cost share requirement for smaller departments, and waiving the matching requirements for less affluent communities.

Whether in a booming local economy or a struggling one, many of today's fire departments do more than fight fire. They respond to medical calls, hazardous materials calls, and calls about other hazardous situations, such as an active shooter. It is critical that the more than one million firefighters across the Nation have access to proper training to protect the public and themselves while

doing a very tough job. The National Fire Academy curriculum reflects current firefighter duties to help fire and emergency professionals prepare for all-hazards responses. Achieving successful outcomes in all-hazards responses often requires the use of advanced firefighting technologies. Federal agencies including the Department of Homeland Security, the National Institute of Standards and Technology, and the National Science Foundation along with the university research community, are investing in fire-related research, including first responder protective equipment, health and safety monitoring of emergency responders, and smart information and communications technologies for real-time situational awareness. I look forward to Dr. Horn's testimony on how these technologies help firefighters and what research needs and capability gaps require further investment.

I look forward to hearing from our panel—I look forward to hearing our panel discuss the effects of these changes and others to the fire service community, and what the Committee should consider as we look at reauthorizing these programs. Thank you for taking the time to appear before us today.

Chairwoman Comstock, before I yield back, I ask—I want to ask unanimous consent to introduce into the record a letter from the Property Casualty Insurance Association of America in support of the SAFER grants program.

Chairwoman COMSTOCK. Without objection.

[The information appears in Appendix II]

Mr. LIPINSKI. Thank you, Madam Chairwoman, and in the last few seconds, I just want to say I was just in my district on Monday at the Lagrange Fire Department, and they just have been awarded a grant and they're telling me about how important that these grants are for assuring community safety, and again, I want to thank everyone who is here today, and thank you for your service to our country and all of our communities.

I yield back.

[The prepared statement of Mr. Lipinski follows:]

OPENING STATMENT

Ranking Member Daniel W. Lipinski (D-IL)
of the Subcommittee on Research and Technology

House Committee on Science, Space, and Technology
 Subcommittee on Research and Technology
*“U.S. Fire Administration and Fire Grant Programs Reauthorization:
 Examining Effectiveness and Priorities”*
 July 12, 2017

Thank you Chairwoman Comstock. The authorizations for the U.S. Fire Administration Assistance to Firefighters Grant, or AFG, program as well as the Staffing for Adequate Fire and Emergency Response, or SAFER Grant program, expire in just two months; without Congressional action both programs will terminate on January 2, 2018, under sunset provisions included in the last reauthorization. I hope this Committee will work to get a bill to the President’s desk before that time to reauthorize these programs. I thank our distinguished panelists for being here today and for their service in keeping the American public safe from fire and other hazardous threats.

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Career, volunteer, and combination fire departments all face challenges in meeting their day-to-day needs. Local fire departments are the boots on the ground for fire prevention and protection, but when state budgets do not allow for adequate funding to hire firefighters and ensure proper training and access to life-saving protective gear and equipment, there is a Federal role in providing funding and technical assistance. The *Fire Grants Reauthorization Act of 2012* made significant changes to the fire grant programs to address some of these funding and technical obstacles. Changes included the distribution of AFG fire grant funding among the various types of fire departments, reducing the cost share requirement for smaller departments, and waiving the matching requirements for less affluent communities.

Whether in a booming local economy or a struggling one, many of today’s fire departments do more than fight fire – they respond to medical calls, hazardous materials calls, and calls about

other hazardous situations, such as an active shooter. It is critical that the more than one million firefighters across the nation have access to proper training to protect the public and themselves while doing a very tough job. The National Fire Academy curriculum reflects current firefighter duties to help fire and emergency professionals prepare for all-hazards responses. Achieving successful outcomes in all-hazards responses often requires the use of advanced firefighting technologies. Federal agencies including the Department of Homeland Security, the National Institute of Standards and Technology, and the National Science Foundation along with the university research community, are investing in fire-related research, including first responder protective equipment, health and safety monitoring of emergency responders, and smart information and communications technologies for real-time situational awareness. I look forward to Dr. Horn's testimony on how these technologies help firefighters and what research needs and capability gaps require further investment.

I look forward to hearing our panel discuss the effects of these changes and others to the fire service community, and what the Committee should consider as we look at reauthorizing these programs. Thank you for taking the time to appear before us today.

Thank you Chairwoman, I yield back.

Chairwoman COMSTOCK. Thank you, and I now recognize the Ranking Member of the full Committee for a statement, Ms. Johnson.

Ms. JOHNSON. Thank you very much, Chairwoman Comstock. Thank you for holding this hearing today.

As the Committee considers reauthorization, it is helpful to examine the effectiveness and priorities of the U.S. Fire Administration, the Assistance to Firefighters Grant Program, and the Staffing for Adequate Fire and Emergency Response Grant program. I want to welcome all of our witnesses, and I appreciate them being here to share insights today.

I'm pleased to announce earlier this year that the City of Duncanville, in my district, received a grant. As with other grant recipients, the award will help the Duncanville Fire Department in its efforts to protect the health and safety of the public and emergency response personnel.

The availability of these funds is critical to many communities. Local fire departments respond to a myriad of hazards, from structural fires and automobile accidents, to wildfires, other natural disasters, and even terrorist attacks.

Faring better than many other programs, the U.S. Fire Administration and the fire grants programs would remain flat funded under this Administration's fiscal year 2018 budget proposal. However, that budget request and the recent appropriations for these programs have fallen well below the authorized levels. In addition to providing fewer resources for training, purchasing life-saving equipment, and hiring enough firefighters to respond safely to emergencies, under-funding also affects Congress's ability to conduct oversight of these programs. When the agencies do not have proper funding to carry out the required studies and reports, we lack the data and feedback on the effectiveness of the programs. So I urge this Committee to continue to support authorization levels that acknowledge the significant demand for these important programs.

This hearing is also an opportunity for us to review changes made to the programs since the last authorization. In 2016, GAO reported that FEMA has incorporated a majority of the changes Congress required in 2012. However, GAO also recommended greater coordination between the Fire Administration and FEMA, as well as the establishment of clearer performance metrics for the grant programs.

The agencies still have work to do to meet those recommendations. Coordination and collaboration among relevant agencies is key. For example, while wildfires are handled by the U.S. Forest Service, wildfires often approach and even hit populated areas. I am interested in hearing more about collaboration between federal agencies, state, tribal, and local jurisdictions in addressing wildland-urban interface fires.

Finally, the fire service community relies on advances in fire-related scientific research and technological innovation, including communications technologies, protective gear and equipment, and firefighting tactics. I hope that Dr. Onieal and Dr. Horn, you will provide us with an update on fire-related research needs and any technology gaps that need addressing, as well as federal agency col-

laborations and university partnerships. The U.S. Fire Administration and the fire grants program provide critical resources to address the nation's emergency response challenges, and I look forward to hearing from the witnesses how Congress can ensure they have the support they need to assist the departments effectively across the nation. It is an important role that you play, and I hope to hear from you today.

Thank you, and I yield back.

[The prepared statement of Ms. Johnson follows:]

OPENING STATEMENT**Ranking Member Eddie Bernice Johnson (D-TX)**

House Committee on Science, Space, and Technology
Subcommittee on Research and Technology
*“U.S. Fire Administration and Fire Grant Programs Reauthorization:
Examining Effectiveness and Priorities”*
July 12, 2017

Thank you Chairwoman Comstock for holding this hearing. As the Committee considers reauthorization, it is helpful to exam the effectiveness and priorities of the U.S. Fire Administration (USFA), the Assistance to Firefighters Grant Program (AFG), and the Staffing for Adequate Fire and Emergency Response Grant Program (SAFER). I want to welcome all of the witnesses, and I appreciate them being here to share their insights with us.

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federal agency collaborations and university partnerships. USFA and the fire grants program provide critical resources to address the nation's emergency response challenges, and I look forward to hearing from the witnesses how Congress can ensure they have the support they need to assist fire departments effectively across the nation.

Thank you. I yield back.

Chairwoman COMSTOCK. We will introduce our witnesses. Our first today is Dr. Denis Onieal, Acting Administrator of the U.S. Fire Administration. He joined the Jersey City Fire Department in 1971 and rose through the ranks from firefighter to deputy chief, then acting chief in 1995, leading a uniformed force of 625 firefighter and officers. He was appointed Superintendent of the National Fire Academy in 1995. He holds a bachelor of science degree from New Jersey University, a master's degree in public administration from Fairleigh Dickinson University, and a doctor of education degree from NYU. He taught in the master and doctorate programs in education at NYU for five years, and has written numerous articles in the fire field.

Our second witness today is Chief John Sinclair, President and Chair of the Board for the International Association of Fire Chiefs. He also serves as Fire Chief of the Kittitas Valley Fire and Rescue in Washington State. Prior to this position, Chief Sinclair served on the emergency medical services section where he was involved with major issues facing fire-based EMS. He currently represents the fire service on the National EMS Advisory Council. He has also worked with the American College of Surgeons Hartford Consensus I and II, as well as assisted with the Department of Homeland Security and Centers for Disease Control with their Bystander Response Project.

Our third witness today is Captain John Niemiec, President of the Fairfax County, Virginia, Professional Fire Fighters and Paramedics, International Association of Fire Fighters. He is a 22-year veteran of the Fairfax County Fire and Rescue Department. He also serves as an Executive Board Member of the National Conference on Public Employee Retirement Systems, the largest trade association dedicated to nonprofit public pension advocating. He earned his bachelor's degree in occupational safety and health from the National Labor College as well as a certificate of completion from the George Washington University's EMT/paramedic program.

I now recognize Dr. Marshall to introduce our next witness.

Mr. MARSHALL. Thank you, Chairwoman Comstock. I'm very honored to introduce our fourth witness today, Mr. Steve Hirsch. Steve is the first Chair of the National Volunteer Fire Council and a resident of the largest agriculture producing district in the country, the 1st District of Kansas. Steve served as the Training Officer for Sheridan County, Thomas County, and the Grinnell Fire Department of Kansas, and that's about 2,000 square miles as I remember having just been out there this past week doing some town halls. These are all 100 percent volunteer fire departments. Mr. Hirsch served as the Secretary of the Kansas State Firefighters Association since 2000 and also serves as the County Attorney for Decatur County. He's a graduate of the one of the finest institutions in the land, Kansas State University, as well as Washburn Law School. I want to recognize his wife Anita, who's in the audience as well, and I'm very proud that I've delivered a couple of Anita's—I think they were both boys, weren't they nephews, or is it one of each? One of each. Okay. So it's been 20 years ago, but there was one of each, so very proud that she's here and certainly understand what a sacrifice it is to let your husband go play these games. He's got to do all these weekend chores. My dad was in charge of the

fire department in my hometown, and I trained many weekends with him training volunteers as well, and I hate to admit this, Steve, but I had to call on some of your friends' help one hot summer afternoon when I had a little prairie fire get out of control, and they sure saved my bacon, so I appreciate what you do, and of course, we just had 650,000 acres of wildfire in Kansas that destroyed over 5,000 head of cattle. So certainly saved hundreds from that fire and appreciate all that you guys do for us. Thanks.

Chairwoman COMSTOCK. Great. Now, our fifth witness today is Dr. Gavin Horn, Research Program Director for the Illinois Fire Service Institute. His research interests lie in the areas of firefighter health and safety research, first responder technology development, material testing and design, and non-destructive evaluation. He is a member of the Board of Trustees for the Fire Protection Research Foundation and currently serves as a Firefighter and Engineer with the Savoy Fire Department in Illinois. He received his Ph.D. in mechanical engineering from the University of Illinois at Urbana-Champaign.

Our sixth witness today is Chief Butch Browning, President of the National Association of State Fire Marshals as well as the Louisiana State Fire Marshal. Over the past seven years, he has led the reorganization of the State Fire Marshal's Office to include cross training of personnel and the development of a modern data management system. Over the past 29 years, he has served at all levels of the fire service. He entered public service as a Sheriff's Deputy for East Baton Rouge Parish and later served as Fire Chief for the District 6 Fire Department in Baton Rouge and for the City of Gonzalez. He is a graduate of the National Fire Academy's Executive Fire Office program and is a nationally registered emergency medical technician.

I now recognize Dr. Onieal for five minutes to present his testimony.

**TESTIMONY OF DR. DENIS ONIEAL,
ACTING ADMINISTRATOR,
UNITED STATES FIRE ADMINISTRATION**

Dr. ONIEAL. Good morning, Madam Chair and Members of the Committee. My name is Dennis Onieal. I serve as the Acting United States Fire Administrator, responsible for managing the USFA, our programs, training and facilities at the National Emergency Training Center, and I'm pleased to talk to you this morning about the USFA.

In a sentence, the USFA works to prevent local emergencies from becoming natural disasters, and to the extent that a community has a well-trained, well-led cadre of responders, that emergency stays local. Poorly handled or so large the local forces are overwhelmed, local emergencies become disasters, triggering state and federal response, assets and costs.

Sometimes the emergency is of such initial magnitude that the local responders are overwhelmed, and when that happens, it's important that the local forces integrate with state and local agencies under the National Incident Management System. Poorly prepared local forces won't integrate well, resulting in increased loss of life

and property, increased costs, and often criticism of federal response.

The USFA supports the DHS and FEMA missions in four ways. We train mid- to senior-level fire officers and specialists; we collect and analyze incident data and provide information about the 25 million fire department responses a year; we develop and distribute fire prevention and public education programs; and we assist in research.

There are several disturbing factors that I see affecting our nation and citizens over the next few decades. First, as you all pointed out, Americans are dying in fires, a little over 3,000 a year, and we work closely with all affected governments and groups to encourage the installation of sprinklers and smoke alarms, conduct inspections, and practice drills. But the methods and materials of construction are changing rapidly. Today's modern fire home is a perfect storm of conditions and outcomes—larger floor areas, increased fuel loads, and new construction materials. These result in faster spreads, shorter time to flashover, less time to escape, and more rapid collapse.

Secondly, the Baby Boomers are hitting the local fire and emergency services response system. We have more than 30 years of data to show that senior citizens are the high-risk group for fires, the high-risk group for accidents, and the high-demand group for emergency medical services. The beginning of the Boomers are turning 71 this past January, and the trailing end turning 53, and their life expectancy is 85 years. We anticipate 32 more years of high demand for emergency services by our most vulnerable population.

Thirdly, the wildland fire issue including the wildland-urban interface where civilization meets the forest is a growing problem. What once was seasonal is now perennial, beginning earlier and ending later each year. People are living in the WUI, and once a wildland fire starts within miles of their home, they're vulnerable. This is a nationwide issue from the East in Florida and Tennessee to the West in Utah, Arizona and California.

Fourthly, fire departments are now an essential element in the response to active shooters. As a recent example, Chief Tammy Kaya was the first arriving fire chief officer at the Dallas police shooting. She continues to publicly state that her success in managing the medical response was the training that she received at the National Fire Academy.

To address these four concerns, the NFA provides cutting-edge education and training to America's estimated 1.3 million firefighters. Courses are delivered in classrooms at the National Emergency Training Center in classrooms throughout the United States in cooperation with accredited state and local fire training agencies and colleges and universities. The NFA also has a robust system of online instructor-mediated and self-study courses.

Our National Fire Data Center continues to modernize the National Fire Incident Reporting System browsing tool along with other web tool applications to improve the overall reliability, performance, ease of data entry, and administration by fire departments and state users. This modernization will allow users to access the NFIRS data warehouse to access, share and compare data.

Finally, Madam Chair, I want to thank you and the Committee's generous gifts of time and interest, and I appreciate the opportunity to highlight the accomplishments of the Fire Administration and the hard work of our staff. Your continued support is instrumental as we work to make America fire safe. I'll be happy to answer any questions.

[The prepared statement of Dr. Onieal follows:]

STATEMENT
OF
DENIS ONIEAL, ED. D.
ACTING U.S. FIRE ADMINISTRATOR
FEDERAL EMERGENCY MANAGEMENT AGENCY
U.S. DEPARTMENT OF HOMELAND SECURITY
BEFORE
THE
COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY
SUBCOMMITTEE ON RESEARCH AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES
WASHINGTON, D.C.
“U.S. Fire Administration and Fire Grant Programs Reauthorization:
Examining Effectiveness and Priorities”

Submitted
By
Federal Emergency Management Agency
500 C Street, S.W.
Washington, D.C. 20472

July 12, 2017

Introduction

Good morning, Madam Chairman and Members of the Committee. My name is Denis Onieal, and I serve as Acting Assistant Administrator at the Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA) and Acting United States Fire Administrator responsible for managing the United States Fire Administration (USFA) at the National Emergency Training Center (NETC). It gives me great pleasure to be here today to discuss the functions of the USFA.

Background

In 1974, Congress passed the Federal Fire Prevention and Control Act that established the USFA and the National Fire Academy (NFA) to help decrease tragic loss due to fire and to promote the professional development of the fire and emergency medical services (EMS) community.

The USFA focuses on supplementing, not duplicating, existing programs of training, technology and research, data collection and analysis, and public education. Over the years, the USFA has adjusted to the constant changes and challenges facing the fire and EMS community - from all hazards to terrorism.

From the DHS/FEMA perspective, it's important to recognize that every emergency, every Federal disaster, starts with a local emergency response. The fire and emergency services responded to 25 million local emergencies last year. To the extent that a community has well-trained, well-led cadre of fire and emergency responders, the emergency stays local. During incidents so large that the local forces are overwhelmed, the emergency becomes a disaster, triggering State and Federal response, assets and costs. It is in the interest of both DHS and FEMA to keep local emergencies local through fire department data analysis, fire prevention, public education and response.

In the case where the local responders are overwhelmed, it is important that the local forces integrate seamlessly with outside help – State and Federal – using the National Incident Management System and the Incident Command System. Not properly prepared and trained, the local forces will not integrate well with State and Federal assets resulting in increased loss of life and property and increased criticism of DHS/FEMA efforts. Through its training, data collection and analysis, research, and public education/prevention programs, the USFA helps prepare local first responders to protect against, respond to, recover from and mitigate all hazards by partnering with State and local fire and emergency services and stakeholders to achieve the desired outcomes:

1. Reducing all-hazards risks through preparedness, prevention, and mitigation.

2. Promoting response, local planning, and preparedness for all hazards
3. Enhancing the fire and emergency services capability to respond to and recover from all hazards
4. Advancing the professional development of fire service personnel and other people engaged in fire prevention and control activities (Public Law 93-498).

Because of our collective efforts with fire and emergency services stakeholders in public safety education, fire prevention programs, inspections, fire and building code initiatives, and installation of smoke alarms and residential sprinkler systems, fire related deaths in the United States declined 11 percent from 2006-2015. In addition, the number of on-duty firefighter fatalities has decreased 28.9 percent during the same period. The USFA is committed to promoting health and safety for all of the Nation's firefighting and EMS communities.

Strategic Framework

The USFA identified five broad goals as a framework to implement our mission: to provide national leadership to foster a solid foundation for our fire and emergency services stakeholders in prevention, preparedness and response.

These goals provide strategic and operational direction:

1. Reduce Fire and Life Safety Risk through Preparedness, Prevention and Mitigation
2. Promote Response, Local Planning and Preparedness for All Hazards
3. Enhance the Fire and Emergency Services' Capability for Response to and Recovery from All Hazards
4. Advance the Professional Development of Fire Service Personnel and of Other People Engaged in Fire Prevention and Control Activities
5. Establish and Sustain USFA as a Dynamic Organization

The USFA actively supports these goals in partnership with the fire and EMS community. We continue to evaluate and institute new initiatives as needed based on the current climate and existing challenges.

Trends and Challenges

While we have made great strides, the analysis of international and domestic fire statistics show the United States fire problem remains among the worst in the industrial world. There are a number of factors that contribute to the Nation's fire problem beginning with the changing nature of the fire threat. Today, the intensity and severity of residential fires due to building construction, home design and furnishing materials, make safe evacuation more difficult than in the past.

The USFA works with partners to develop tactics and to update and revise curriculum and programs to effectively fight the evolving threat of residential fires.

Wildland Urban Interface (WUI)

There has been a rapid escalation of severe wildfire behavior over the past two decades. Consequently, there are increased risks to responders and citizens, greater home and property losses, higher costs, and larger threats to communities and landscapes. Drought contributes to these impacts. As communities continue to expand into wildland areas, the number of buildings damaged or destroyed in wildland fires increases. We must continue to assist communities in reducing risk and mitigating the impact of WUI fires.

The USFA plays an active leadership role in several intergovernmental and coordinating bodies including the Wildland Fire Leadership Council and provides subject matter expertise to the Mitigation Framework Leadership Group. Since the release of the National Strategy and the National Action Plan, the USFA works with WUI partners to continually promote and implement the National Cohesive Wildland Fire Management Strategy.

The NFA provides six different courses to help fire departments and local communities contend with the growing risk of fire in the WUI. The courses focus on mitigation through community awareness, land use planning, adoption and code enforcement, and preparation of evacuation plans.

The USFA also developed a toolkit to assist fire and EMS departments with educating themselves and their communities about wildland fire threat and risks along with mitigation strategies. The toolkit contains community risk assessment tools, information on Fire Adapted Communities, related codes and standards, outreach mitigation materials, specialized community planning, and land use resources. There is also access to current research articles, links to local training for citizens and responders, and wildfire safety tips and messages to share through social media. This collection of WUI resources assists fire departments, community organizations, local governments, emergency managers, and citizens alike to strengthen the way their city, town, or community prepares for a wildfire emergency.

Demographics

As the population of older adults increases, National Fire Incident Reporting System (NFIRS) data show that their risk of fire death increases. As the “baby boomers” begin to age, there is a projected increase in the number of fire and emergency medical services calls. The USFA is adjusting its training and programs to prepare for this shift in demographics. The use of residential sprinklers and smoke alarms together are a highly effective way to mitigate this increased risk. We are working diligently to promote the installation and use of residential fire sprinklers.

All Hazard Response

Between 2011 and 2015, fire and emergency services responded to an annual average of 142,490 technical rescues (such as vehicle extrications, swift water rescues and high-angle rescues) and 1,515 explosive bomb removals. It is not commonly known but about 20-25 percent of bomb disposal teams are part of fire departments. To provide perspective, in 2015 about 25 million incidents were reported to NFIRS. Of these, 64.5 percent were rescue and EMS; 4.5 percent were fires; 3.6 percent were hazardous conditions with no fire; and all other types of incidents accounted for 27.4 percent. The fire and emergency services have evolved well beyond a fire focus to encompass all hazard response.

Active Shooter/Mass Casualty Incidents (AS/MCIs)

Over 500 people have been killed in the United States in AS/MCIs since the Columbine High School shootings in 1999. AS/MCIs occur locally and impact fire, EMS, and police departments. The ambush on Dallas police offices on July 7, 2016 is an example of a collaborative effort where a Dallas Fire Department Captain and crew entered the active shooter scene to save police officers. The initial commanding officer for the Dallas Fire Department, Chief Tami Kayea, is a graduate of the NFA's Executive Fire Officer Program. She publicly attributed her success in managing the initial response to that tragedy to the training she received at the NFA.

The USFA recognizes that it is essential to be at the forefront of this increasing demand on emergency providers by ensuring we offer educational and training materials to ensure incident safety. We clearly have a role and responsibility to all emergency responders for fire and fire-based EMS.

Fiscal Impacts

Thousands of Americans die each year, tens of thousands of people are injured, and property and business continuum losses reach billions of dollars. There are huge indirect costs of fire, such as temporary lodging, medical expenses, psychological damage and negative environmental impacts. The direct loss by fire in 2015 included 3280 civilian deaths, 15,700 civilian injuries and \$14.3 billion in property loss. Someone is injured by fire every 34 minutes, killed every two and a half hours every day in America.

It is imperative to evaluate all aspects of USFA programs to realize the most effective way to do business. This evaluation is necessary at the Federal, State and local levels. The idea of maximizing limited resources to achieve optimal results is important for the sustainability of the Nation's fire service and the livelihood of our communities. The USFA cooperates with others in the development of data collection tools to identify the location of at-risk populations and local fire and emergency trends. As instructor fees and student travel stipend costs increase, the NFA has begun converting some of its courses from residential delivery to mediated on-line

delivery. While on-line training does increase costs, it also increases the number of people trained. Additionally, it makes NFA training available to those who cannot travel to the NETC.

Current Programs and Key Initiatives

The USFA programs and key initiatives are in support of the efforts of local communities to reduce the number of fires and fire related deaths and injuries. We champion Federal fire protection issues and coordinate information about fire programs.

National Fire Academy (NFA)

The NFA promotes the professional development of the fire and emergency services response community and other allied professionals engaged in fire prevention and control activities. We deliver training and education to first responders and community leaders to assist in the preparation and response to all emergencies. As a result, first responders are better prepared to manage hazards at the lowest possible level. The NFA provides a variety of education and training opportunities for command level fire officers, emergency managers, emergency responders, technical staff, and other allied professionals such as architects and engineers.

In Fiscal Year 2016, NFA provided 3,737 course offerings, reaching 103,257 students. Courses are delivered in classrooms at the National Emergency Training Center (NETC), and in classrooms throughout the United States in cooperation with State and local fire training agencies and colleges and universities. The NFA also has a robust system of online instructor mediated and self-study courses.

Students who attended NFA courses reported that courses have improved job performance and increased professional development. Through feedback from the NFA's long-term, follow-on evaluation survey, 94.4 percent of students reported that their NFA course work helped increase their skills and enhance their job performance; and 90 percent of supervisors of students indicated that the information gained from the courses helped improve performance within their departments.

NFA continues to face the challenge of reaching America's estimated 1.3 million firefighters with meaningful education and performance-improvement training. In recognition of this challenge and need to further reach into a changing workforce, the NFA implemented significant curriculum enhancements that include mobile computing, webinars, podcasts, online training, and mediated online education and other adjuncts to classroom delivery.

Public Education and Awareness

The USFA serves as an information conduit to the fire, emergency services and allied professional communities. We distribute research findings and information through multiple channels including social media, our web site, the Learning and Resource Center, national radio and print, and other outreach efforts that directly reach our fire and emergency services'

practitioners. Critical issues such as community risk reduction, prevention, firefighter health and safety, the WUI, human trafficking and critical infrastructures are disseminated to our colleagues and partners every day. Our educational outreach effort create prevention and life safety infographics (i.e., graphics without words) for people with limited English language abilities. These tools help our fire departments get information about life-saving practices to large and small communities throughout the country. The USFA also leads the Fire is Everyone's Fight (FIEF) national initiative to unite the fire service, life safety organizations and professionals in an effort to reduce home fire injuries, deaths and property loss by changing how people think about fire and fire prevention.

Data Collection and Analysis

The USFA assists State and local entities in collecting, analyzing and disseminating data and special reports on the occurrence, control, and consequences of all types of fires, emergency medical incidents, and other emergency activities through the efforts of the National Fire Data Center (NFDC). The NFDC tracks firefighter fatalities and conducts an analysis of the fatalities that occur each year.

The USFA is in the process of modernizing the NFIRS data entry browser tool along with other NFIRS web tool applications in order to improve overall system reliability, performance, ease of data entry, and system administration by fire departments and state users. The goal of the modernization is to make the software more user friendly and encourage further participation. The modernization will integrate user access to the NFIRS Data Warehouse which has been in use by USFA for several years and is now being rolled out to an increasing number of states and departments. The NFIRS Data Warehouse provides a much larger suite of standard reports and the ability to create new reports or modify existing ones. Data warehouse users are able to access, share, and compare incident data among departments, States, and nationally. Use of the data warehouse has allowed USFA to track data quality issues in near real-time and therefore improve the data used for annual analyses and data distribution. This tool assists USFA and the Nation's fire service in identifying trends, developing focused prevention, and mitigating programs and measures.

Research and Technology

Supporting the DHS Science & Technology (S&T) Directorate, USFA staff serve as subject matter experts for first responder needs as they relate to firefighter health and safety. Working in collaboration with public and private partners, the USFA develops projects, provides technical expertise, and serves as federal liaison to the fire community for initiatives of mutual interest such as emergency vehicle and roadway safety, firefighter occupational health and safety, emergency medical services (EMS) issues, residential fire sprinklers, and smoke alarms. Some of the Federal agencies we partner with include the U.S. Department of Justice, National Institute of Justice, U.S. Consumer Products Safety Commission (CPSC), Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, U.S. Department of Energy,

Oak Ridge National Laboratories (ORNL), and the National Institute of Standards and Technology; Non-governmental partners include the NFPA; International Association of Fire Chiefs (IAFC); International Association of Fire Fighters (IAFF), National Volunteer Fire Council, International Fire Service Training Association, and the National Fallen Firefighters Foundation.

An example of this collaboration is the partnership with FEMA's Mission Support office which resulted in the development and installation of fire sprinklers in temporary housing for disaster survivors. The USFA partnered with CPSC to conduct research on new smoke alarm technology and focused on the modernization of the 40 year old alarm devices for greater effectiveness and safety. We collaborated with the ORNL on the development of new technologies to detect direct current to protect responders from electrocution. The USFA is also working with the IAFF on a study of occupational violence to firefighters and EMS to find ways to mitigate attacks on first responders.

Emergency Response Support

To enhance response capacity and capability at the state, local, and tribal levels, the USFA supports the development of Type 3 All Hazard Incident Management Teams (AHIMT). Currently, there are 128 Type 3 AHIMTs strategically located in 44 states within the ten FEMA Regions. These teams are all-hazard responders and manage incidents ranging from wildfires to hurricanes to terrorism incidents. The Type 3 AHIMTs have been able to manage incidents that formerly utilized the National Type 1 or Type 2 Incident Management Teams, producing the same outcomes at a fraction of the costs. The National Wildfire Coordinating Group (NWCG) recognizes the operational value of Type 3 AHIMTs, considers them part of their response resource base, and has incorporated USFA's training and development program into their core training requirements for future credentialing of Type 3 Incident Management Teams.

Assistance to Firefighters Grant Program Roles and Responsibilities Framework

At the recommendation of the Government Accountability Office, the USFA signed an agreement with FEMA's Grant Programs Directorate in December 2016. This agreement provides a framework for each component's role and responsibility to improve the management of the Assistance to Firefighters Grant Program. This collaboration is ongoing and will be reviewed and evaluated by Assistance to Firefighters Grant and USFA staff to ensure quality grant program management.

Conclusion

Madam Chairman, thank you for your time today. I appreciate the opportunity to highlight the accomplishments of United States Fire Administration and the hard work of our staff. Today we know that annual losses from floods, hurricanes, tornadoes, earthquakes, and other natural disasters combined, by comparison average just a mere fraction of fire loss. Your continued

support is instrumental as we work together for a fire safe America. I am happy to answer any questions the Committee may have.

Dr. Denis Onieal
Deputy Fire Administrator
United States Fire Administration

Dr. Denis Onieal was appointed Deputy Fire Administrator for the United States Fire Administration (USFA) in May, 2015. He is responsible for managing USFA facilities, data and public education programs and training activities at the National Emergency Training Center.

After his Honorable Discharge from the US Army (1967-69), he joined the Jersey City Fire Department in 1971, rose through the ranks from firefighter to Deputy Chief, and then acting chief in 1995, leading a uniformed force of 620 firefighters and officers. He spent his entire time “in the street” as a line fire officer.

He completed a Bachelor of Science Degree from New Jersey City University in 1976, a Masters Degree in Public Administration from Fairleigh (*Fair-Lee*) Dickinson University in 1978 and a Doctor of Education degree from New York University in 1990. He taught in the Master and Doctorate programs in Education at NYU for five years and has written numerous articles in the fire field.

Dr. Onieal served as Superintendent of the National Fire Academy (NFA) from 1995-2015, and during his tenure the NFA expanded its outreach program to work more closely with State and local training agencies to increase NFA training from 15,000 in 1995 to 100,000 today. All courses have been completely revised to include college credit recommendation and continuing education units for all resident and off-campus deliveries. The Academy’s on-line training program trained over 45,000 people last year. In cooperation with over 100 colleges and universities, the NFA has standardized the Associate and Bachelor degree curriculum across the Nation. The NFA now offers courses from 10 minutes to 10 days in all professional development topics depending upon the students’ needs.

Beginning September 12th, 2001, he led the USFA’s team at the World Trade Center, working behind the scenes to help the New York City Fire Department re-establish their systems of command, control and on-site communications. In 2005, he was sent to Atlanta GA to lead the in-processing, training and dispatch of 4,000 firefighters to assist in the response to Hurricane Katrina.

In March of 2015 he was awarded the James O. Page EMS Achievement Award from the International Association of Fire Chiefs EMS Section. This award honors those who demonstrate professionalism, a drive for excellence, and exemplary performance and leadership.

In April of 2015 the Congressional Fire Services Institute (CFSI) awarded Dr. Onieal the CFSI/Motorola Solutions Mason Lankford Fire Service Leadership Award. The award recognizes individuals who have been proactive at the local, State and Federal government levels to improve and advance fire/emergency services and life safety issues.

Chairwoman COMSTOCK. Thank you.
And I now recognize Chief Sinclair for five minutes to present his testimony.

**TESTIMONY OF CHIEF JOHN SINCLAIR,
PRESIDENT AND CHAIR OF THE BOARD,
INTERNATIONAL ASSOCIATION OF FIRE CHIEFS;
FIRE CHIEF, KITTITAS VALLEY FIRE AND RESCUE (WA)**

Chief SINCLAIR. Good morning, Chairman Comstock, Ranking Member Lipinski, and Members of the Subcommittee. I am Chief John Sinclair, Fire Chief of the Kittitas Valley Fire and Rescue Department in Ellensburg, Washington. Today I testify as the President and Chairman of the Board of the International Association of Fire Chiefs. On behalf of the 12,000 members of the IAFC, I thank you for the opportunity to discuss the effectiveness of the Assistance to Firefighters Grant program including the SAFER grant program along with the U.S. Fire Administration.

The role of America's fire and emergency service continues to evolve to cover new missions such as EMS, hazmat and terrorism response. The USFA and the AFG and SAFER grant programs are important partners in helping the nation's fire and emergency service meet this challenge. The AFG program was created by Congress in 2000 to help fire departments provide baseline emergency response for their communities. This FEMA program uses a highly respected merit-based peer-review process to evaluate grant applications and provide matching grants to local fire departments. The AFG program helps fire departments with equipment and training. The SAFER program helps fire departments meet staffing needs, and the Fire Prevention and Safety program supports fire prevention programs and research to promote firefighter and civilian fire safety.

The AFG program has helped my department. Using AFG grants, KVFR purchased personal protective equipment and self-contained breathing apparatus for our firefighters. These purchases improved their safety and helped improve regional interoperability between local fire departments that eventually led to a merger, making a more effective and efficient response force.

The SAFER grant program plays a vital role in helping local fire departments meet staffing needs. Besides providing matching grants for career firefighters, the SAFER grant program also provides grants for volunteer recruitment and retention. Approximately 70 percent of the nation's firefighters are volunteers. Nevertheless, fire departments face trouble recruiting and retaining volunteers who must balance firefighting and training requirements with job and family commitments. By partnering with state chiefs organizations in Virginia, Connecticut and Tennessee, the IAFC is working on SAFER-funded initiatives to help local fire departments recruit and retain volunteers. These programs include marketing campaigns and leadership training to help volunteer fire chiefs.

I want to recognize Representative Esty for her assistance in a PSA helping with the Connecticut program. The Connecticut campaign led to 900 events, distributed 68,000 marketing materials, and resulted in 400 new volunteer firefighters. The Virginia cam-

paign resulted in more than 1,100 applications in 15 participating departments with 656 new members that came in.

I would also like to highlight the life-saving research funded by the Fire Prevention and Safety Grant program. The IAFC's FSTAR program translates the research funded by these grants into actionable information that affects tactics on the fire ground, including fact sheets on fire dynamics, structural integrity and firefighter health to help fire departments improve their operations. The FSTAR program has also produced guidance to help doctors provide rigorous physicals to firefighters to reduce the number of strokes, heart attacks, and injuries.

Despite the effectiveness of the AFG and SAFER programs, many fire departments still need assistance meeting basic staffing, equipment and training needs. We ask the Subcommittee to reauthorize AFG and SAFER programs. The IAFC endorsed Senate bill 829. This legislation would authorize funding for the AFG and SAFER grant programs through fiscal year 2023. Also, it removed the January 2, 2018, sunset date that would eliminate the programs. In addition, S. 829 would make technical and administrative changes to improve the program's efficiency and reduce waste, fraud, and abuse.

I would also like to recognize Dr. Oneal and the important role that U.S. Fire Administration plays. The National Fire Academy is the West Point or Quantico of the fire and emergency services. Using both in-person and online training, NFA educates tens of thousands of fire service leaders every year about how to adapt to emerging issues and lead their departments better. We congratulate the President for appointing Chief Keith Bryant as the U.S. Fire Administrator.

I ask that the Committee also reauthorize USFA this year. It is important that USFA continue to have dedicated funding. This funding should be used to continue to develop policy and guidance, revise curricula at the NFA, and maintain infrastructure and information technology. I also encourage the USFA to provide guidance to fire departments as they address behavioral health and wellness issues.

I thank the Committee for the opportunity to testify at today's hearing. The AFG and SAFER programs and the USFA are important partners in helping local fire departments address an evolving all-hazards mission. On behalf of the nation's fire chiefs, I look forward to working with the Committee to reauthorize these critical programs. Thank you very much.

[The prepared statement of Chief Sinclair follows:]



**U.S. Fire Administration
and Fire Grant Programs Reauthorization:
Examining Effectiveness and Priorities**

Statement of

**Fire Chief John Sinclair
President and Chairman of the Board**

presented to the

**SUBCOMMITTEE ON
RESEARCH AND TECHNOLOGY**

**OF THE
COMMITTEE ON SCIENCE, SPACE,
AND TECHNOLOGY**

U.S. House of Representatives

July 12, 2017

INTERNATIONAL ASSOCIATION OF FIRE CHIEFS
4025 FAIR RIDGE DRIVE • FAIRFAX, VA 22033-2868

Good morning, Chairwoman Comstock, Ranking Member Lipinski, and members of the committee. I am Chief John Sinclair, fire chief of the Kittitas Valley Fire and Rescue (KVFR) department in Ellensburg, Washington, and president and chairman of the board of the International Association of Fire Chiefs (IAFC). The IAFC represents approximately 12,000 leaders of the nation's fire, rescue and emergency services. Thank you for the opportunity to testify today about the effectiveness and priorities of the U.S. Fire Administration (USFA) and the Assistance to Firefighters Grant (AFG) program, including the Fire Prevention and Safety (FP&S) grant and the Staffing for Adequate Fire and Emergency Response (SAFER) grant programs.

Both the AFG program (including the FP&S and SAFER grants) and the USFA help local fire and emergency departments meet the myriad missions that they face every day. Today's local fire department is an all-hazards response force that must provide fire suppression; emergency medical response; hazmat response; multi-casualty/civil unrest/terrorism response; urban search and rescue; train-derailment response; and technical, high-angle, swift-water building-collapse, confined-space and deep-trench rescue. During times of crisis, the local fire department serves as the closest thing to government that provides service to the victims, their communities, their families and their friends.

The Assistance to Firefighters Grant Program

The AFG program (including the FP&S and SAFER grant programs) provides matching grants to local fire and emergency medical service (EMS) departments to assist them in their all-hazards missions. Created by Congress in 2000, the AFG program provides direct support to local fire departments to improve training and equipment capabilities. The FP&S grants, funded by 10% of the funds appropriated to the AFG program, are used to promote local fire prevention activities and research to reduce both firefighter and civilian deaths and property loss due to fires. The SAFER grant program was created by Congress in 2003 to provide matching grants to help local fire departments hire career firefighters. Using at least 10% of appropriated funds, the SAFER program also funds recruitment and retention programs to help volunteer fire departments maintain and enhance their staffing.

These programs are administered by the U.S. Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA). They use a merit-based, peer-review process to evaluate applications and make awards to grantees. While there is an economic hardship waiver, most fire departments must meet a scalable match requirement of 5% to 15% for the AFG grant based on the size of the population served by the fire department. For the SAFER hiring grants, a local fire department must provide a 25% local match in the first two years and a 65% match in the third year of the period of performance. The FP&S grants require a 5% match. The national fire service organizations meet annually with FEMA staff to set the criteria for awarding the AFG grants in order to ensure that the programs continue to meet the needs of local fire departments.

Since the AFG program's inception in FY 2001, FEMA has distributed approximately \$6.32 billion to local fire departments through the AFG program. From FY 2005 through the latest awards in FY 2015, the SAFER grant program has awarded approximately \$2.73 billion. In

general, these programs have been recognized as good stewards of taxpayer funds. For example, the Office of Management and Budget found in 2007 that the AFG program was “effective” and assigned a 100% score for Program Management and Program Results/Accountability.

It is important to highlight the qualitative impacts of the AFG, SAFER and FP&S programs on the nation’s fire and emergency service. For example, KVFR received AFG funding in 2006 and 2007 to purchase personal protective equipment and self-contained breathing apparatus (SCBA). We used these grants to replace twenty-year old turnout gear, which had far exceeded its ten-year service life. In addition, the purchase of new SCBAs allowed us to replace an old system with the current contemporary gear that neighboring departments had. This equipment helped us to regionalize our local fire and emergency service and provide more effective emergency response to our communities.

In addition, the IAFC has been engaged in AFG- and SAFER-funded initiatives to support the nation’s fire and emergency service. The IAFC’s Volunteer Workforce Solutions program helps volunteer and combination departments improve their ability to recruit, retain and manage volunteer firefighters. This national recruitment and retention initiative is aimed at improving diversity and inclusion in the fire and emergency service. For example, one department grew from having less than 1% female members to now having 20% of its membership composed of women. Another department that had only eight all-male operational members added nine women, so that 67% of its current operational volunteers are women. A larger county department started the program with 157 total volunteers including 38 women and 34 Hispanic members. With help from the SAFER-funded IAFC program, the department now has 250 total members with 76 women (30% of operational staff) and 100 Hispanic members (40%). Later this year, the IAFC will release three online courses to focus on diversity and inclusion in the fire and emergency service, and a volunteer chiefs’ handbook to help new chiefs learn the business of a fire department. It is important to highlight the importance of diversity in the fire and emergency service to provide superior customer service to a diversifying U.S. population.

The Connecticut Fire Chiefs Association, the Virginia Fire Chiefs Association, and the Tennessee Fire Chiefs Association also have received SAFER grants and chosen to partner with the IAFC on volunteer recruitment and retention programs. These programs have focused on statewide media campaigns, leadership workshops, and specialized physicals for prospective volunteers, as described by the National Fire Protection Association’s (NFPA) Standard on Comprehensive Occupational Medical Program for Fire Departments (NFPA 1582), to ensure that they are fit for duty. During the most recent program in Connecticut, 600 new applications were received in the 15 participating departments and 400 new members joined. Considering that each volunteer is estimated to save a community approximately \$45,000 per year, this effort produced a cost savings of \$18 million to those communities.

In Virginia, more than 1,100 applications were received in the 15 participating departments with 565 new members joining these departments. This effort resulted in approximately \$25 million in cost savings to communities. In addition, more than 30,000 training hours were delivered statewide including leadership, recruitment and retention training. Also, the program held more than 1,700 recruitment and retention events, and distributed 78,000 campaign marketing materials. The Tennessee effort is just getting under way.

The IAFC also has received FP&S grants to apply FP&S-funded scientific research to the fire ground. The Firefighter Safety Through Advanced Research (FSTAR) and Researchers Creating Useable Emergency Solutions (RESCUES) programs have been focused on applying research to reduce the severity of home fires and improve firefighter health and safety. To inform the fire and emergency service about new scientific developments, the program has developed easy-to-use fact sheets. These fact sheets cover topics such as structural collapse tests of single-story wood frame structures; understanding fire performance and tactical decision-making for engineered floor systems; post-traumatic stress for career firefighters; and sudden cardiac death among firefighters less than 45 years of age in the U.S. The FSTAR program also included online training courses in fire ground tactics and fire dynamics, such as the thermal hazards of wind-driven fires.

Currently, the FSTAR program is focused on firefighter health and safety issues. Research shows that firefighters are at increased risk for cardiovascular events, respiratory illnesses, cancer, musculoskeletal injuries and behavioral health issues because of their jobs. The FSTAR program is focused on improving the awareness of firefighters and health care providers to these increased occupational risks through training. For example, the FSTAR program has developed and updated a health care providers' guide to the NFPA 1582 physical and distributed more than 1,000 copies of the guide at conferences and meetings since the guide's November 2016 launch. FSTAR also has developed fact sheets on firefighter fitness and wellness programs and candidate physical ability tests for firefighters. In addition, the FSTAR program hosted a webinar which included a comprehensive study of mayday situations in which firefighters were at risk on the fire ground.

The Need to Reauthorize the AFG Program

Despite the effectiveness of the AFG and SAFER program, local fire and EMS departments still suffer from shortages in basic requirements. Consider the following examples from the NFPA's *Fourth Needs Assessment of the U.S. Fire Service*:

- Fifty percent of all departments (that answered the NFPA survey) do not have enough portable radios to equip all emergency responders on a shift.
- Fifty-three percent of all departments cannot equip all firefighters on a shift with SCBA.
- An estimated 60% of all departments provide hazardous materials response but have not formally trained all of their personnel involved in this response activity.
- Almost three-quarters (72%) of departments reported that some of their personal protective clothing was at least 10 years old, which exceeds the life-cycle of the equipment.

There still is a definite need in the fire and emergency service for the AFG and SAFER grant programs. The current authorization of funding expires at the end of FY 2017. In addition, the authorizing statutes for the AFG and SAFER grant programs have "sunset" provisions to eliminate both programs on January 2, 2018. In order to ensure that these programs can continue to serve the nation's fire and emergency service, the IAFC asks the subcommittee to report a bill to reauthorize funding for these programs.

The IAFC supports the AFG and SAFER Program Reauthorization Act (S. 829), which was introduced by Senators John McCain and Jon Tester on April 5. This bipartisan legislation was reported out of the Senate Homeland Security and Governmental Affairs Committee on May 17, and we are awaiting its passage in the full Senate.

The legislation would:

- **Eliminate the sunset provision.** The last reauthorization of the FIRE and SAFER grant programs includes a sunset for the programs on January 2, 2018. This legislation would remove this sunset to keep the programs from expiring.
- **Extend the authorization of both programs through FY 2023.** Both programs are authorized through the end of Fiscal Year (FY) 2017. The programs were authorized at \$750 million in FY 2013. Subsequent increases in the authorization are based on annual increases in the Consumer Price Index (all items, United States city average) vis-à-vis the previous year's Consumer Price Index. This legislation simply would extend the current authorizing language through FY 2023.
- **Clean up typos in the SAFER statute.** The legislation would clean up anachronistic dates and remove references to previously-removed sections of the code. It also would correct an anomaly in the hardship waivers for the SAFER grant program. The SAFER grant statute allows FEMA to waive (for jurisdictions with demonstrated local hardship) the prohibition on using SAFER funds to supplant state and local funds; and the requirement that applicants have sustained their fire-related programs and emergency response budgets by at least 80% of the three preceding years. However, the statute currently only waives the reference to the 25%-25%-65% local match requirement in one part of the statute (subsection (a)(1)(e)) and not the other (subsection (c)(4)). S. 829 would update the statute so that it consistently authorizes a hardship waiver of the 25%-25%-65% matching requirement.
- **Move the recently added language relating to training for emergency medical personnel to recognize and treat people with mental illness from the SAFER authorizing language to an allowable use of funds under the AFG program.** The 21st Century Cures Act (P.L. 114-255) added language to the SAFER grant program to allow SAFER funding to be used to provide "specialized training to paramedics, emergency medical services workers, and other first responders to recognize individuals who have mental illness and how to properly intervene with individuals with mental illness, including strategies for verbal de-escalation of crisis." This language is problematic, because the SAFER grants are used for staffing and personnel. S. 829 would designate this mental health training component as an allowable use of the AFG program.
- **Allow SAFER grant funds to upgrade paid-per-call or part-time firefighters to full-time career firefighters.** The NFPA's Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments (NFPA 1710) requires a minimum of four on-duty firefighters on a fire engine or pumper. Due to the lingering effects of the Great Recession, many jurisdictions still cannot meet that standard. For example, 51% of fire departments protecting populations of 250,000 to 499,999 assign less than four firefighters to an apparatus, as well as 80% of fire departments protecting populations of

50,000 to 99,000. Currently, the underlying statute does not allow local fire departments to use SAFER funds to promote part-time firefighters to full-time status. S. 829 would fix this problem and allow local fire departments to promote their experienced part-time firefighters to full-time positions.

- **Make administrative changes to improve the administration and oversight of the grant programs.** In order to assist fire and EMS departments with the complicated process of administering an AFG or SAFER grant, S. 829 would authorize the FEMA Administrator and U.S. Fire Administrator to develop an online training course to educate grantees. In addition, the legislation would establish a framework for the oversight and monitoring of the grant programs to mitigate waste, fraud and abuse. These provisions are meant to answer concerns raised by 2016 reports issued by the DHS Office of Inspector General.

As the subcommittee considers legislation to reauthorize the AFG and SAFER grant programs, the IAFC recommends that the committee use the reported version of S. 829 as a starting point. This bipartisan legislation was reported unanimously from the Senate Homeland Security and Governmental Affairs Committee. From the IAFC's perspective, S. 829 addresses the issues necessary to ensure that the AFG and SAFER grant programs remain adequately funded and continue to meet the needs of the fire and emergency service.

In addition, we are concerned by proposed cuts to the AFG and SAFER grant programs. For FY 2017, Congress agreed to appropriate \$345 million for each program. For FY 2018, the Administration proposed reducing each program to \$344.344 million for each program. In light of the programs' effectiveness and the still-prevalent need for the programs, the IAFC requests that Congress appropriate the FY 2011 level of \$405 million for each program.

The U.S. Fire Administration

Congress created the USFA and its educational arm, the National Fire Academy (NFA), in 1974, in response to the landmark document, *America Burning: The Report of the National Commission on Fire Prevention and Control*. The mission of the USFA is to reduce life and economic losses due to fire and related emergencies through leadership, advocacy, coordination and support. The USFA also provides important policies and guidance documents to local fire departments on emerging issues relating to active shooter response, EMS system management, and fire safety and fire prevention policies. The IAFC welcomes President Trump's appointment of Chief G. Keith Bryant, IAFC president (2014-2015), as U.S. Fire Administrator.

The NFA is the nation's premier fire service training institution and uses off-campus and resident courses, and training sponsored through the state fire academies to provide leadership and specialized training to the fire and emergency service. The USFA estimates that it has trained more than 1.4 million students since 1975, including more than 86,00 students in 2015.

The authorization of funding for the USFA expires at the end of FY 2017. The IAFC asks the subcommittee to consider legislation that will reauthorize funding for the program for another five years. It is important that USFA have adequate funding to provide the highly-valued

education at the NFA in the face of rising transportation costs. Steady funding also will allow the NFA to continue to provide online learning opportunities, which are especially important to volunteer and paid-per-call firefighters that must balance firefighting and training duties with paid employment and family obligations. Continued funding for USFA also will allow the NFA to develop new courses in topics related to information sharing, fusion center participation, and incorporating threat information into fire department budgeting and planning. In addition, continued USFA funding will allow it to address important infrastructure maintenance at NFA.

The IAFC believes that USFA also could play a greater role in helping fire departments deal with the emerging issues of behavioral health and wellness. According to FSTAR research, 46.8% of firefighters have considered suicide and 15.5% have had an attempt during their careers. The USFA can help local fire departments address this issue by working with the U.S. Department of Veterans Affairs to disseminate lessons learned from veterans' behavioral health and wellness programs to help firefighters and EMS personnel deal with the traumatic situations that they face. Also, USFA could help provide information about firefighter behavioral health and wellness issues to the medical providers of first responders. The USFA also could review firefighter health and wellness resources to provide guidance to firefighters about how to get help if they need it.

Conclusion

On behalf of the approximately 12,000 members of the IAFC, I thank you for the opportunity to testify at today's hearing. As a grantee, I would like to ensure you that the taxpayers' funds are being well-spent on the AFG and SAFER grant programs as well as the USFA. These programs provide valued assistance to local fire departments and help them protect their communities.

Nevertheless, there is still much work to be done. The U.S. still has one of the worst civilian death and property loss records due to fires in the industrialized world. For example, more than 1.3 million fires were reported in the U.S. in 2015, which resulted in more than 3,200 civilian fire deaths and \$14.3 billion in property damage. If our nation is going to continue to expect adequate response to fires and medical emergencies, and other threats, like active shooter incidents, hazardous materials incidents, flooding and wildland fires, it is important for Congress to continue to support programs such as the AFG and SAFER grant programs and the USFA. On behalf of the members of the IAFC, I look forward to working with the subcommittee to draft and pass legislation to reauthorize these critical programs.

Bio ~ John Sinclair

John Sinclair is currently the Fire Chief of Kittitas Valley Fire Rescue, and Emergency Manager for the City of Ellensburg, in Washington State

He has spent the past 40 years learning the art and science of fire suppression, EMS, emergency management, management of projects and leadership of people. He has held the positions of firefighter, paramedic, lieutenant, battalion chief, assistant chief, deputy chief and fire chief learning from each position or department he has worked for.

He is currently the President of the International Association of Fire Chiefs (IAFC) 2016-2017. John has served in a leadership role of some type within the International Association of Fire Chiefs for 22 years. Serving on the Emergency Medical Services Section for 19 years, 4 years as Chair and served as the International Director to the Board for 7 years. His involvement with the EMS Section over the past 20 years has allowed him to be involved with every major issue to face fire-based EMS for two decades. This has allowed him to become an expert in EMS systems and on many operational areas.

Additionally, John has served on; the Advisory Board of Fire and Emergency Television Network (FETN), the Advisory Board for Tacoma Community College and Central Washington University's Paramedic Program and served on Board of Directors for the National Registry of Emergency Medical Technicians for nine years. Currently he represents the Fire Service on the National EMS Advisory Council (NEMSAC) and served as the Chair of that group.

John is a published author, recognized speaker, consultant and expert witness. As a lifelong learner, he is always willing and ready to learn from others.

Because of John's expertise related to Mass Casualty Incident Management, he has worked with the American College of Surgeons Hartford Consensus I and II. He also assisted department of Homeland Security and Centers for Disease Control with their Bystander Response Project.

Chairwoman COMSTOCK. Thank you.

And I now recognize Captain Niemiec for five minutes to present his testimony.

**TESTIMONY OF CAPTAIN JOHN NIEMIEC,
PRESIDENT, FAIRFAX COUNTY (VA)
PROFESSIONAL FIRE FIGHTERS
AND PARAMEDICS-INTERNATIONAL
ASSOCIATION OF FIRE FIGHTERS LOCAL 2068**

Captain NIEMIEC. Thank you, Chairwoman Comstock, Ranking Member Lipinski, yakshemash, and distinguished members of the Subcommittee. Good morning. My name is John Niemiec, and I am the President of the Fairfax County Professional Fire Fighters and Paramedics. I appreciate the opportunity to appear before you today on behalf of the International Association of Fire Fighters and over 305,000 firefighter and emergency medical personnel who serve in every Congressional district in this nation. I come before you today to offer my full support for the SAFE and FIRE grant programs and urge the Subcommittee to reauthorize these programs.

SAFER and FIRE grants have proven themselves to be highly effective, allowing local fire departments to make significant progress in their baseline capabilities. According to the 2015 needs assessment of the Fire Service by the National Fire Protection Association, SAFER and FIRE have helped local fire departments improve staffing, equipment and training levels. For example, 2010 to 2015, the number of fire departments serving mid-sized cities meeting safe staffing standards have increased by 25 percent. Such studies also show significant improvements in certain categories of personal protective equipment and training. For example, departments of all sizes have improved the percentage of personnel with Personal Alert Safety System, or PASS devices. In 2001, only 38 percent of fire departments equipped all responders on a shift with their own PASS device, a necessity to find injured or lost firefighter in an emergency. This figure jumped to 72 percent in 2015, a result NFPA speculates due to FIRE grant funding.

Thousands of communities, large and small, across this nation have been aided by the SAFER and FIRE grant programs including my department, the Fairfax County Fire and Rescue Department. I have served the department for over 30 years and have seen firsthand the remarkable service delivery improvements we have achieved through both SAFER and FIRE. For example, Fairfax County received FIRE grants in 2015 and 2016 to provide training to 54 advanced life support providers, upgrading their emergency medical skills and certification. These awards exclusively allowed our department to upgrade all frontline responding units to the paramedic level, allowing the county to deliver high-quality EMS care in a more timely manner.

Fairfax County has also benefited from SAFER grants, which allowed the county to hire an additional 49 firefighters, improving response capabilities by staffing all 14 ladder trucks with four personnel. This staffing level has allowed the county to reduce risk for the citizens, minimize property loss, and increase firefighter safety.

I am proud of the progress Fairfax County has made with the help of SAFER and FIRE grants, and many communities across America can say the same, yet despite the progress made in communities large and small, the need for funding through the SAFER and FIRE grant program persists. Many fire departments continue struggling to meet appropriate staffing, training and equipment standards. The 2015 NFPA needs assessment identified many of these weaknesses. For example, 49 of all departments have failed to formally train all of their personnel involved in structural firefighting. Fifty percent of departments operate without enough portable radios to equip all emergency responders on a shift, and 53 percent of departments could not equip all firefighters with self-containing breathing apparatus.

As you know, work has begun in the Senate to reauthorize these critical grant programs. Recently, the Homeland Security and Governmental Affairs Committee unanimously approved Senate bill 829, the AFG and SAFER Program Reauthorization Act of 2017. The bill is a simple reauthorization of SAFER and FIRE. It makes several minor but necessary technical corrections and eliminates a sunset provision on the programs. The IAFF and all major national fire service organizations have worked collectively with the Senators for many months to help craft this bill and have offered it our enthusiastic endorsement. We believe SAFER and FIRE have been refined over the many years the programs have been in place. The grants are working effectively and efficiently, and we do not recommend making major changes to the programs. As you well know, SAFER and FIRE's current authorization expires on September 30th of this year, and the programs are due to sunset on January 2, 2018. Therefore, I strongly encourage the Subcommittee to move swiftly to reauthorize SAFER and FIRE to reassure their continuance without interruption.

Again, I'd like to thank the Subcommittee for the opportunity to testify today, and I'm happy to answer any questions you may have. Thank you.

[The prepared statement of Captain Niemiec follows:]

INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS



Statement of
CAPTAIN JOHN NIEMIEC
PRESIDENT, FAIRFAX COUNTY PROFESSIONAL
FIRE FIGHTERS AND PARAMEDICS
before the
SUBCOMMITTEE ON RESEARCH AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES
on
U.S. FIRE ADMINISTRATION AND FIRE GRANT PROGRAMS
REAUTHORIZATION: EXAMINING EFFECTIVENESS AND
PRIORITIES

JULY 12, 2017

Thank you, Chairwoman Comstock, Ranking Member Lipinski and distinguished members of the Subcommittee. My name is John Niemiec, and I am the President of the Fairfax County Professional Fire Fighters and Paramedics. I appreciate the opportunity to appear before you today on behalf of the International Association of Fire Fighters, General President Harold A. Schaitberger and over 305,000 fire fighters and emergency medical personnel who serve in every congressional district in this nation as the first line of defense against disasters, natural or man-made.

Madam Chairwoman, I come before you today to offer my full support of the Staffing for Adequate Fire and Emergency Response (SAFER) and the Assistance to Firefighters (FIRE) Grant programs and urge the Subcommittee to reauthorize these programs swiftly. For over thirty years I have served with the Fairfax County Fire and Rescue Department where I currently hold the rank of Captain, assigned to serve in the 2nd Battalion as an Emergency Medical Services - Paramedic Supervisor. As an active-duty fire fighter as well as an elected leader within the IAFF, I have seen firsthand the remarkable service delivery improvements my department has been able to achieve through the resources the SAFER and FIRE grants provide; improvements that would not have been possible absent these critical grant programs. It is clear to me that the SAFER and FIRE grant programs are crucial to the ability of local fire fighters and fire departments to serve their communities safely and effectively.

SAFER & FIRE Grants are Crucial to Public Safety and Proven Effective

The demands on the fire service to deliver critical life-saving services have never been greater than they are right now. In 2015, fire fighters and paramedics were dispatched to just under thirty-two million emergency incidents. Of course, these demands will only continue to grow in the years to come, undoubtedly translating to a need for additional trained and equipped emergency responders to effectively provide those critical response services.

Furthermore, the modern fire service is no longer simply responsible for fire fighting. In almost every community in America, our duties encompass a broad range of emergency services including structural fire fighting, airport fire and rescue services, wildland fire fighting, basic and advanced levels of emergency medical services, rescue operation in high-angle, swift water, and technical environments, terrorism and hazardous materials response. Additionally, today more than ever our nation's fire fighters are on the front lines working to protect our homeland while responding to natural disasters such as hurricanes, floods, wildland fires or acts of terrorism. We are truly all-hazard responders. I am proud to say that my fire department boasts one of the nation's 28 Urban Search and Rescue (USAR) teams that respond to every conceivable disaster at home and abroad. Fire fighters are expected to risk and give our lives to safeguard our fellow countrymen. We do this willingly and without hesitation despite knowing that we are often forced to carry out our duties with minimal training, outdated equipment, and insufficient personnel. This begs for correction.

The 106th Congress created the Assistance to Firefighters Grant program and gave it a unique mission: to help local fire departments meet minimum standards for equipment, apparatus, and training, as well as, health and wellness and fire safety activities. AFG, generally known as the FIRE Grant program, was expanded in the 108th Congress to include the Staffing for

Adequate Fire and Emergency Response (SAFER) Grant program to provide a mechanism to ensure fire departments also met minimum staffing standards to operate efficiently and safely.

In the years since their inception, the SAFER and FIRE Grant programs have proven themselves to be highly effective – allowing local fire departments to make significant progress in their baseline capabilities.

According to a series of studies by the National Fire Protection Association, SAFER and FIRE have helped local fire departments improve staffing, equipment and training levels. As an example, consider that from 2010 to 2015, fire departments serving a population of 250,000 to 499,999 have improved the percentage of engine or pumpers meeting the national standard of 4 fire fighter staffing from 26% in 2010 to 51% in 2015. Similarly, fire departments serving a population of 50,000 to 99,999 have increased the percentage of engine or pumpers staffed by the national standard of 4 fire fighters by 11% over the same period.

Meanwhile, such studies also show significant improvements in certain categories of personal protective equipment and training. For example, departments of all sizes have improved the percentage of personnel with personal alert safety system (PASS) devices. In 2001, 62% of fire departments failed to equip all responders on a shift with their own PASS device – a necessity to find injured or lost fire fighters in an emergency. This figure plummeted to 28% in 2015, a result NFPA speculates may be attributable to FIRE Grant funding. Similarly, the NFPA reports that training in hazardous materials response has improved, with the rate of departments training all responders in hazmat improving by 6%.

Additionally, the FIRE Grant program has proven itself to be highly efficient, having been scored as “effective” by an Office of Management and Budget.

SAFER and FIRE’s Role Protecting Fairfax County

There are thousands of communities, large and small, all across this nation that have been aided by the SAFER and FIRE grant programs. Just across the Potomac River is the home of my Department, the Fairfax County Fire and Rescue Department. Serving a population of more than one million residents and daily visitors, Fairfax County Fire and Rescue has benefited from both the SAFER and FIRE Grant programs.

For example, Fairfax County received FIRE Grants in 2015 and 2016 to provide training to fifty-four Advanced Life Support providers, upgrading their emergency medical skills and certification. These awards exclusively allowed our department to upgrade all frontline responding units to the Paramedic level, allowing the County to deliver high-quality EMS care in a timelier manner.

An additional FIRE Grant permitted our County to establish a program to continuously raise the awareness of the importance of working smoke detectors. Through this FIRE Grant funded program, we have made thousands of direct personal contacts to various segments of our population that were determined to be most at risk, such as those within our lower income levels and the “English as a Second Language” community. We have also focused our campaign to deliver and install visual smoke alarms for our hearing impaired citizens. All of this is undertaken in an effort to reduce or eliminate the preventable loss of life to fire.

Fairfax County has also benefitted from SAFER grants which have allowed the County to add forty-nine fire fighters to the rolls of the department, further increasing response capabilities by staffing all engines with four personnel and ladder trucks with five personnel. This staffing level has allowed the County to reduce risk for the citizens, minimize property loss, and increase fire fighter safety through the full implementation of the NFPA 1710 Standard and full compliance with the Occupational Safety and Health Administration's two in/two out regulation.

The Need Persists

I am proud of the progress Fairfax County has made with the help of SAFER and FIRE, and many communities across America can say the same. Yet, despite the progress made in communities large and small, the need for funding through the SAFER and FIRE Grant programs persists. Unfortunately, many fire departments continue struggling to meet appropriate staffing, training and equipment standards. The aforementioned 2015 *Needs Assessment* identified many of these weaknesses. For example, 49% of all departments have failed to formally train all of their personnel involved in structural firefighting. Fifty percent of departments operate without having enough portable radios to equip all emergency responders on a shift. And 53% of departments could not equip all fire fighters with self-contained breathing apparatus, particularly in communities of under 10,000.

Reauthorizing SAFER and FIRE

As you likely know, work has begun in the Senate to reauthorize these critical grant programs. On April 5, 2017 Senators John McCain (R-AZ) and Jon Tester (D-MT), introduced Senate bill S.829, the AFG and SAFER Program Reauthorization Act of 2017. The IAFF and all other major national fire service organizations, including the IAFC, NVFC, and NFPA, have worked collaboratively with the Senators for many months to help craft the bill and have offered it our enthusiastic endorsement.

The Senate bill is a simple reauthorization of SAFER and FIRE. SAFER and FIRE has been well honed over the many years the programs have been in place, and we believe the grants are working effectively and efficiently; we therefore do not recommend making major changes to the programs. The bill does make several minor but necessary technical corrections, such as updating dates and eliminating outdated references. The bill also eliminates a sunset provision on the programs and directs the Administrator of FEMA to carry out grant monitoring activities to prevent and identify waste, fraud, abuse, and mismanagement of the program. A 2016 GAO Inspector General audit of the program identified the need for these corrections.

I am pleased to report that on May 17, 2017, the Senate Homeland Security and Governmental Affairs Committee unanimously approved S.829 reporting the bill to the full Senate.

Time is of the Essence

I would like to again thank the Subcommittee for holding this important hearing. As you well know, SAFER and FIRE's current authorization expires on September 30th of this year, and the programs are due to sunset on January 1, 2018. I therefore encourage the Subcommittee to

move swiftly to reauthorize SAFER and FIRE to ensure their continuance without interruption.

While significant progress has been made to improve the baseline capabilities of the fire service, much work remains. Reauthorizing SAFER and FIRE will ensure that fire departments nationwide will be able to better protect their communities and their citizens.

Conclusion

On behalf of the International Association of Fire Fighters, I appreciate the opportunity to share our views on reauthorizing the SAFER and FIRE Grant Programs. As a nation, we have made significant positive progress in enhancing the readiness and capabilities of our nation's fire services. It is crucial that these vital programs, essential to our national security and well-being, continue. To the extent that I or the IAFF can assist the Subcommittee in these efforts, I am happy to offer our expertise and pledge to work closely with you and your staffs.

Again, I'd like to thank the Subcommittee for the opportunity to testify today and am happy to answer any questions you may have.

**John R. Niemiec
Biography**

Captain John R. Niemiec is a professional firefighter/paramedic with the Fairfax County, Virginia Fire and Rescue Department with more than 30 years of experience. As a professional firefighter, his current assignment is to serve Battalion 2 as an Emergency Medical Services - Paramedic Supervisor.

Captain Niemiec has served as **President** of the **Fairfax County Professional Fire Fighters and Paramedics – International Association of Fire Fighters (IAFF) Local 2068** since 2007. Local 2068 comprises more than 1900 active and retired members involved in all aspects of interest and concern to its membership.

Prior to his election as President, he served as *First Vice President*, a position that provides a supportive platform from which to address issues of health and safety for career firefighters, paramedics, and other public safety personnel.

Captain Niemiec serves as **Trustee** on the Fairfax County Uniformed Retirement System Board. One key element of this position is working with other Board officers to oversee and protect a fund of over one billion dollars (\$1.6B) in assets.

Captain Niemiec also serves as an **Executive Board Member** of the National Conference on Public Employee Retirement Systems (NCPERS), the largest trade association dedicated to nonprofit public pension advocating. This includes, but is not limited to, serving as a research and education body for public sector trustees, administrators, and government officials.

Captain Niemiec is a graduate of the National Labor College with a Bachelor's Degree in Occupational Safety and Health, coupled with a Certificate of Completion from the George Washington University's EMT-Paramedic Program.

Captain Niemiec's efforts on behalf of professional firefighters and paramedics, and the community in which he lives, have been recognized which such honors as the EAC-Don Smith Award (Outstanding Service Rendered to County Employees), two Career Achievement Awards, and an Outstanding Performance Award.

Captain Niemiec resides in Fairfax, VA with his father and one of his two daughters.

Chairwoman COMSTOCK. And we now recognize Mr. Hirsch for his testimony.

**TESTIMONY OF MR. STEVE HIRSCH, FIRST VICE CHAIR,
NATIONAL VOLUNTEER FIRE COUNCIL;
TRAINING OFFICER, SHERIDAN COUNTY FIRE DISTRICT #1,
THOMAS COUNTY FIRE DISTRICT #4,
AND GRINNELL FIRE DEPARTMENT (KS)**

Mr. HIRSCH. Thank you. My name is Steve Hirsch. I'm First Vice Chair of the National Volunteer Fire Council, which represents the interests of the nation's more than a million volunteer fire, EMS and rescue personnel. I'd like to thank the Subcommittee and especially my own Congressman, Dr. Marshall, for inviting me here to testify today about the need to reauthorize AFG and SAFER as well as the U.S. Fire Administration.

I want to begin by highlighting the critical need for Congress to reauthorize AFG and SAFER prior to January 2nd. As the Committee's aware, there's a provision in the current law that eliminates those programs if they're not reauthorized before that date. This would be a severe blow to the nation's fire service and would put thousands of committees across the country at risk. If you take only one thing away from my testimony, it should be the need to move quickly to reauthorize those programs.

My own Sheridan County Fire Department's been fortunate to receive grants for protective gear and hose, to replace a fire truck that was 50 years old, to buy a compressor to refill our air tanks without having to make a 60-mile round trip, for heavy-duty washing machines to keep our gear clean and eliminate carcinogens. Our neighboring departments use our washing machine and compressor, so the value of the program goes well beyond the benefit to our own department.

I spend a lot of time teaching in all-volunteer fire departments across Kansas at least once a month, and I can tell you firsthand there's an overwhelming amount of need. Those are small towns with very small tax bases. How can a department with an annual budget of \$10,000 ever hope to replace bunker gear at \$3,000 a person? How can they hope to buy a new brush rig to fight wildfires? Well, they have that hope because of the AFG program.

Recently, I called the widow of a firefighter in my community who died in the line of duty in 1967. The department at that time had no gear and no formal training. Carroll Ferguson was killed when a chimney fell on him as he was fighting a fire at a rural house in the county. The impact of that death continues to reverberate in our community 50 years later. Firefighters risk their lives every time they respond to a call, and the AFG program helps to minimize that danger by helping departments buy equipment and get training that they would otherwise not be able to afford.

The NVFC strongly opposes changes in the authorization that would divert money away from the AFG program or from local fire departments. The competition for this funding is very intense. There are a lot of departments that are applying that are not being funded and a lot of need that's not being met. Any shift and changes out of the AFG program would only make things worse.

The SAFER program helps to increase or maintain a number of firefighters in the United States. Ten percent of the SAFER funds go to recruit and retain volunteers. These help departments create marketing plans to recruit new volunteers and establish benefit programs and have other retention strategies to keep volunteers in the department.

The volunteer fire service is changing because the country's changing, and that's why the SAFER program is critical. The traditional staffing model where children live and work in the same community where they grew up and follow their parents into the volunteer fire service is changing. Young folks are more mobile. Folks are moving out of rural communities to find work and commuting longer distances to and from work. There are more households in which both adults in the home have jobs, and of course, that disrupts the ability of the volunteer fire department to staff. We can't just sit back and wait for volunteers to come walking through our door. The SAFER gives local departments the tools to go out in the community and recruit folks to become volunteer firefighters.

Our organization is also not seeking any major changes to the AFG or SAFER programs in the reauthorization. There are relative minor changes that we're seeking that are outlined in my written testimony.

Finally, the U.S. Fire Administration provides training to more than 100,000 fire and emergency service personnel each year. The USFA also performs research and collects data specific to the fire service and educates the public on the importance of fire safety. It is our organization's belief that the U.S. Fire Administration does a great job given the resources available to them, and we're not seeking any changes to the current authorization.

If you'll indulge me just a little bit for this farm boy volunteer firefighter from western Kansas, when you work this bill, when you talk with your colleagues, when you vote, I would implore you, in fact, I would beg you to think about Carroll Ferguson, who left his job at the meat counter of the local grocery store in June of 1967, never returning home. How much difference these programs could have made in that family's life had they had proper equipment and good training, and that's why these programs are so important. Even more so, I want you to think about who the person in that family who was the real hero, his widow, Marie, who was left without a husband and three very small children who didn't have a daddy any longer. These grant programs are helping keep volunteer firefighters alive without any doubt in my mind. Those are firefighters who don't get a paycheck. They do it because they love their fellow man.

So thank you for your past support, thank you for listening to me, and thank you for helping keep our firefighters alive by supporting these programs.

[The prepared statement of Mr. Hirsch follows:]



Testimony of Steve Hirsch
 First Vice Chair, National Volunteer Fire Council (NVFC)
 Submitted to the House Subcommittee on Research and Technology

Hearing on U.S. Fire Administration and Fire Grant Programs Reauthorization:
 Examining Effectiveness and Priorities

July 12, 2017

My name is Steve Hirsch and I am the First Vice Chair of the National Volunteer Fire Council (NVFC), the leading national non-profit organization representing the interests of the nation's more than one million volunteer fire, EMS and rescue personnel in the United States. I also serve as the training officer for three all-volunteer fire departments in northwest Kansas, and I am the Secretary of the Kansas State Firefighters Association. I would like to thank Chair Comstock, Ranking Member Lipinski, Vice Chair Abraham, my own Representative, Dr. Marshall, and all of the esteemed members of the Subcommittee for inviting me here to speak today about the need to reauthorize the Assistance to Firefighters Grant (AFG) program, the Staffing for Adequate Fire and Emergency Response (SAFER) grant program, and the United States Fire Administration (USFA).

Grant Programs

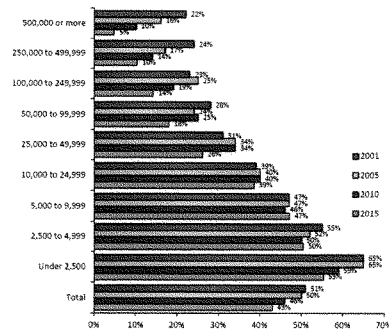
The NVFC's top priority for the reauthorization of the AFG and SAFER grant programs is simply to extend them beyond January 2, 2018. As the committee is aware, there is a provision in current law that would eliminate these incredibly important grant programs if they are not reauthorized before that date. This would be a severe blow to the nation's fire service and put thousands of communities across the country at risk.

Eliminating the sunset and extending the authorization for AFG and SAFER is absolutely critical. Additionally, the NVFC supports making several other relatively minor changes to the current authorization. I am attaching a document that the NVFC, along with several other national fire service organizations, provided to the committee in March outlining all of the changes that we are requesting in the reauthorization, along with a justification for each.

As the Committee is aware, AFG and SAFER are by far the most significant sources of assistance that the federal government provides to local fire departments. The goal of the AFG and SAFER programs is to bring all fire departments in the United States up to a baseline level of readiness. This is particularly important for all- and mostly-volunteer fire departments, which protect 85 percent of the nation's communities and 37 percent of the population.

Rural areas like mine are almost exclusively protected by volunteers. Unfortunately, national needs assessment studies consistently show that volunteer agencies have difficulty affording up-to-date equipment, training and apparatus (see charts on next page). This is primarily for economic reasons. Because fire protection services are funded at the local level, the resources available to each department are dependent on the local tax base. For smaller communities that can mean having to engage in private fundraising and rely on older and sometimes unreliable equipment and vehicles in order to maintain operations.

Figure 2-5. Percent of Engines and Pumpers That Are At Least 15 Years Old by Size of Community, for Four Studies



Source: "Fourth Needs Assessment of the U.S. Fire Service", NFPA, November 2016

Table 3-D. Firefighters in Departments Where Not All Firefighters Are Equipped With Personal Protective Clothing and Percent of Personal Protective Clothing That Is At Least 10 Years Old by Size of Community (Q. 40a, 40b)

Population Protected	Estimated Firefighters in Departments That Do Not Have Personal Protective Clothing for All Firefighters	Estimated Percent of Departments With At Least Some Personal Protective Clothing That Is At Least 10 Years Old
500,000 or more	3,000	37.0%
250,000 to 499,999	0	41.5%
100,000 to 249,999	0	34.2%
50,000 to 99,999	0	38.9%
25,000 to 49,999	2,000	42.1%
10,000 to 24,999	5,000	56.7%
5,000 to 9,999	7,000	69.9%
2,500 to 4,999	30,000	77.1%
Under 2,500	75,000	78.4%
Total	122,000	71.7%

I get around a fair bit across Kansas. I teach fire classes in a volunteer fire department at least one weekend a month. I see volunteer fire departments that struggle to get enough firefighters to man the trucks. I see volunteer departments that have to beg for money to sustain the services they provide to their community. Recently a fire department in a little city in Northwest Kansas had a need for a fire truck to maintain the fire insurance ratings in their community. I was able to find a small rural volunteer department in Nebraska that had a fire truck to give them – one that had been given to them by a volunteer department in Delaware.

I see volunteers step up to the plate and pay for a lot of this out of their own pockets. There are still fire departments that have dirt floors. There are still fire departments that are using turnout gear that is worn out. There are still fire departments that have to work on trucks just to get them out the door or work on them when they return. I know of one department in Kansas that has a budget of under ten thousand dollars. It's a small town with a very small tax base. How can they ever hope to replace their bunker gear at \$3000 per person? How can they ever hope to buy a newer brush rig to fight wildfires that used might still cost tens of thousands of dollars? They have that hope because of the AFG program.

Due to the significant resource challenges that fire departments protecting smaller communities face, the AFG program has been a lifeline for thousands of volunteer and small combination agencies across the country. From FY 2010-2015, volunteer fire departments received an average of 993 grants worth a total of \$95 million each year to help them purchase critically needed equipment, training and vehicles. This funding helped to maintain and improve response capabilities in every state across the nation.

My own home department has been fortunate to receive grants under AFG for turnout gear to keep our firefighters safe, to replace hose that was 40 years old, to finally be able to buy a compressor to refill our air tanks without making a 60 mile round trip, for heavy duty washing machines to keep our gear clean and try and prevent cancer in our firefighters, and to purchase a fire truck to replace one that was 50 years old. Neighboring departments in my area have received grants for similar equipment, and we work together and do not duplicate equipment that can easily be shared. Our washing machine is used to wash the neighbors gear. Our compressor is used to fill other departments' air bottles. That's what makes this program so necessary.

Recently in my community I called a widow of a firefighter who had died in the line of duty in 1967. She is my hero. She had three small children. There was no life insurance. There was no gear. There was no training. And yet Carol Ferguson left his job at the meat counter of the local grocery store to help out his neighbors. He was killed when a

chimney fell on him. Firefighters place their lives at risk every time they respond to a call. The AFG program helps to minimize that danger by providing funding to purchase needed equipment and training that simply could not otherwise be afforded in my own community and thousands like it across the country.

A major challenge for volunteer fire departments related to the AFG program is access to funding. 993 grants per year represents approximately one award for every 20 volunteer fire departments in the United States. From FY 2010-2015, less than ten percent of the funds requested by volunteer fire departments through AFG were awarded. As Congress has reduced funding for AFG – from \$565 million in FY 2009 to \$405 million in FY 2011 to \$345 million in FY 2016 and FY 2017 – competition for funding has increased substantially. This puts particular pressure on smaller fire departments, which often struggle with the grant-writing process.

Volunteer fire chiefs are just that – volunteers. They have lives and they have families. They put those lives and those families on hold while they protect their communities. They have to make a living. Some fire chiefs, after being denied grants – sometimes just because they aren't very good grant writers– decide to simply not take the time to fill out the grant application. This happens more and more as funding becomes more limited.

FEMA is working to try to address funding access issues. They put on grant-writing workshops across the country, including in rural areas, and there is a helpline that people can use to call for assistance. Working with FEMA and other national organizations through the criteria development process, we were able to establish "micro grants" – grant applications where fire departments voluntarily limit their request to \$25,000 or less in order to have a better chance of getting funded. Micro grants allow FEMA to give out more awards, even as available grant dollars have dwindled.

I recognize that this committee does not control appropriations, but I think it is important to raise the issue of funding to illustrate the vital importance of maintaining the current allocations in the statute that govern how AFG is apportioned. The last time that these programs were reauthorized there were changes made that opened AFG up to applicants other than fire departments, including non-fire-based EMS organizations and state fire training academies. Additionally, the percentage of funding that was set aside for the Fire Prevention and Safety (FP&S) grant program, which is a component of AFG, was doubled. Today, with less funding available and greater competition for grants, the NVFC strongly opposes any further changes to the grant programs that would shift dollars away from AFG and local fire departments.

To be clear, the NVFC supports the FP&S program, which funds projects that enhance the safety of the public and firefighters from fire and related hazards. The NVFC was in favor of doubling the allocation for FP&S from five percent to ten percent of the AFG appropriation, as was written into law in the last reauthorization. We felt that this was justified because FP&S applications typically account for 6-8 percent of the combined AFG/FP&S applications and funds requested, as well as the fact that effective fire prevention programs can have a profound, far-reaching impact.

My own Sheridan County Volunteer Fire Department covers all 900 plus square miles of Sheridan County. Thanks to FP&S we were able to put a smoke detector in every home in the county. This is something that we could never have done with local resources, but it is a project that is keeping families alive by having early detection and warning systems in place. One would think that a smoke detector would be affordable by most people but there are folks that struggle with monthly bills and having smoke detectors versus feeding their family limits their choices.

Finally, the Staffing for Adequate Fire and Emergency Response (SAFER) grant program helps to increase or maintain the number of trained, "front line" firefighters in the United States. While SAFER funds are primarily used to pay salary and benefits for career firefighters, ten percent of the funding is set aside to recruit and retain volunteers. Through SAFER, departments can create marketing plans to recruit new volunteers and establish benefit programs and implement other retention strategies to encourage personnel to remain active participants in the department.

I could spend all day talking about the significant staffing challenges facing volunteer fire departments. They are closely related to the transformation taking place across rural America. As jobs leave small towns and young people move to the cities and suburbs in search of work, there are fewer people available to volunteer as emergency responders. Additionally, as call volumes have risen and the amount of training required to serve as a firefighter has increased, it is

harder and harder to convince people to become volunteers. Since 2000, the proportion of firefighters over the age of 50 serving in communities with populations of 2,500 or fewer residents has surged from 18.9 percent to 31 percent.

As I said I get around Kansas a lot and see communities where the entire volunteer fire department is over 50 years old. Now there's nothing wrong with older firefighters – they pass along a world of experience to the next generation – but you don't want to have an entire fire department that doesn't have any young, energetic, vigorous firefighters in their ranks. To do so puts the entire community's population at risk. The SAFER program gives fire departments the tools that they need to recruit and retain the next generation of volunteers.

The Stayton Fire Department in Oregon used two SAFER grants over a seven year period to recruit 80 new firefighters. Stayton's marketing efforts also directly led to the recruitment of 29 firefighters total spread across 15 different neighboring fire departments. The volunteer coordinator that Stayton hired with their initial grant went on to help found the Oregon Firefighter Recruitment Network, which now helps fire departments across the state implement R&R best practices.

One of the ancillary benefits of establishing a R&R program is that it helps departments not only increase the number of firefighters that they have, but also increase the level of activity of their firefighters. This is a trend that the NVFC has heard from a number of our members that have received SAFER grants. Stayton reports that a side-effect of recruiting new, active volunteers and establishing a formal R&R program was that many of the existing volunteers who had become less active ramped up their engagement with the department. Meanwhile, volunteers who were ready to retire but had continued serving because there was no one to replace them were able to transition out of active duty without damaging the department's response capabilities.

State and national organizations are also able to use SAFER funds to create programs that help local fire departments recruit and retain firefighters. State and national programs are critical because they reach a much larger group of fire departments, including agencies that desperately need assistance but may not have the time or wherewithal to successfully implement R&R strategies. Many, many volunteer fire departments fall into this category, as evidenced by the fact that less than 2 percent of agencies apply for SAFER each year.

The Nevada Fire Chiefs Association received SAFER R&R grants in 2007 and 2011 and used the funding to recruit nearly 1,000 new volunteers spread across 82 different fire departments in the state. NFCA, in partnership with the Nevada State Firefighters Association, developed marketing materials and established a website for referring prospective volunteers to local fire departments. These tools are still in use today, although the grant expired in 2015.

NFCA also used grant funds to pay for entry physicals for the new recruits. The State of Nevada requires all firefighters to have an entry physical, which can be prohibitively expensive for many smaller agencies that lack resources. The NFCA grant allowed agencies to not only add new, healthy staff but at no cost to the local taxpayers. I am including as supporting documents an overview of the Stayton grants, as well as grants that the Nevada Fire Chiefs Association received to implement a statewide R&R program.

The NVFC received a SAFER grant in 2014 and used the funding to establish our national Make Me a Firefighter (MMAF) campaign to help local fire and EMS agencies recruit volunteer personnel. The MMAF campaign is a web-based tool that provides departments with information about how to establish a recruitment program, gives them pre-packaged and customizable marketing materials, messaging and outreach strategies, and offers them free access to post volunteer position listings on our online portal. To date there are more than 7,600 users signed up with the campaign, representing more than 5,200 fire departments. More than 2,200 volunteer opportunities are listed and nearly 2,000 applications have been submitted through the portal.

One of the supporting documents that I am submitting along with my written testimony is an article that appeared in a recent issue of Emergency Management magazine about the R&R challenges that volunteer fire departments face. Included in the article was the experience of the West Barnstable (MA) Fire Department, which used MMAF to recruit new volunteers through Facebook. West Barnstable Fire Chief Joe Maruca, who is also a member of the NVFC Board, reported that he received so much volunteer interest because of the MMAF campaign that he was able to completely fill

his recruit class for this year and has prospective volunteers waiting for next year. He also indicated in the article that because the MMAF campaign lets him target the entire community that the new recruits are from more diverse backgrounds.

U.S. Fire Administration

The United States Fire Administration (USFA) provides training to more than 100,000 fire and emergency services personnel each year. USFA also performs research and collects data specific to the fire service, and educates the public on the importance of fire safety. The long-term health of USFA and its National Fire Academy are critical to the fire service, particularly volunteers.

Access to training is a significant challenge for many volunteer fire departments. Trainers are in short supply in rural areas, and smaller fire departments often aren't able to do a lot of specialized training in-house. USFA delivers training directly to individuals on campus and remotely through online course offerings. It also hands courses off to state fire training academies, many of which are able to deliver services in rural areas.

When USFA was reauthorized last there were a number of new focus areas added to its mission, including hazardous materials, emergency medical services, and wildland fire. This reflected the fact that today's fire department is a multi-hazard response agency and that a narrow focus on structural firefighting alone was no longer appropriate. I would say that the changes made in the last authorization have been a qualified success. USFA has developed some training in the new focus areas, and has begun partnering on cross-cutting federal projects dealing with EMS and wildland fire.

Unfortunately, USFA is limited in the new activities that it can engage in due to funding constraints. Again, I recognize that appropriations are outside of this committee's jurisdiction but it is important to note that with USFA's budget having remained at \$44 million in recent years after several years in which it sustained cuts, the focus has been mostly on how to maintain current functions. Developing new courses, updating existing curriculum, and modernizing the National Fire Incident Reporting System (NFIRS) have all suffered due to lack of funding.

With that in mind, the NVFC supports extending the current authorization for the USFA for five years without major changes.

Conclusion

The volunteer fire service depends on the AFG, FP&S and SAFER grant programs, as well as the U.S. Fire Administration, as a lifeline that gives us access to training, education, equipment, vehicles and staffing that we desperately need but simply do not have the ability to afford using local resources alone. On behalf of the NVFC I can say that these programs are effective and that they need to be extended beyond January of next year. I commend the subcommittee for holding this hearing, I thank you for inviting me hear to speak, and I would be happy to answer any questions that you have.

Attachment 1 – AFG Applications and Awards Data: FY 2009-FY 2015

Appropriations		Requested	Applications	Awarded	Grants	Funding Share	Success Rate
FY 2009 - \$565 million	Department Type						
	Volunteer	\$1,540m	11,204	\$217m	2,829	42.70%	25.20%
	Combination	\$831m	4,473	\$128.5m	1,137	25.30%	25.40%
	Paid On Call	\$193m	1,375	\$26.6m	361	5.20%	26.30%
	Career	\$601m	2,739	\$135.8m	884	26.70%	32.30%
FY 2010 - 390 million	Department Type						
	Volunteer	\$1,200m	8,828	\$111m	1,217	32.80%	13.80%
	Combination	\$690m	3,896	\$114.6m	966	33.90%	24.80%
	Paid On Call	\$167m	1,144	\$20.7m	178	6.10%	15.60%
	Career	\$497m	2,363	\$92.1m	572	27.20%	24.20%
FY 2011 - \$405 million	Department Type						
	Volunteer	\$1,240.8m	8,442	\$84.4m	549	24.30%	6.50%
	Combination	\$806.7m	4,220	\$117.0m	583	33.70%	13.80%
	Paid On Call	\$192.0m	1,246	\$11.9m	76	3.40%	6.10%
	Career	\$607.7m	2,588	\$134.2m	521	38.60%	20.10%
FY 2012 - \$337.5 million	Department Type						
	Volunteer	\$867.3m	5,680	\$89.3m	1,079	31.20%	19.00%
	Combination	\$618.7m	3,136	\$86.1m	696	30.10%	22.20%
	Paid On Call	\$119.8m	821	\$11.2m	169	3.90%	20.60%
	Career	\$467.0m	2,053	\$99.6m	546	34.80%	26.60%
FY 2013 - \$337.5 million	Department Type						
	Volunteer	\$750.7m	4,986	\$90.9m	1,061	31.50%	21.30%
	Combination	\$660.1m	2,950	\$90m	560	31.20%	19.00%
	Paid On Call	\$126.1m	762	\$10.2m	91	4.20%	12.70%
	Career	\$558.2m	2,000	\$97.4m	439	33.80%	22.00%
FY 2014 - \$340 million	Department Type						
	Volunteer	\$731.6m	4,609	\$94.4m	1,089	31.00%	23.60%
	Combination	\$721.2m	2,907	\$94.4m	595	31.00%	20.50%
	Paid On Call	\$122.9m	692	\$10.1m	100	3.30%	14.50%
	Career	\$549.9m	1,791	\$105.9m	462	34.70%	25.80%
FY 2015 - \$340 million	Department Type						
	Volunteer	\$849.7m	4,860	\$102.5m	963	32.10%	19.80%
	Combination	\$761.7m	3,008	\$93.1m	547	29.10%	18.20%
	Paid On Call	\$125.4m	726	\$12.7m	108	4.00%	14.90%
	Career	\$550.8m	1,860	\$111.4m	401	34.80%	21.60%

Attachment 2 – SAFER Applications and Awards Data: FY 2009-FY 2015

Appropriations		Requested	Applications	Awarded	Grants	Funding Share	Success Rate
FY 2009 - \$210m	R&R	\$199.9m	730	\$21.6m	52	11.40%	7.10%
	Hiring	\$1.047b	1,369	\$166.5m	131	88.60%	10.50%
	Department						
	Volunteer	\$116.6m	535	\$5.2m	20	2.60%	3.70%
	Career	\$682.4m	560	\$148.9m	81	75.00%	14.50%
	Combination	\$420.3m	960	\$32.4m	70	16.30%	7.50%
	Interest Org	\$30.3m	38	\$12.0m	11	6.00%	28.90%
FY 2010 - \$420m	R&R	\$173.8m	643	63.1m	204	16.20%	31.70%
	Hiring	\$1.021b	1179	326.0m	237	83.80%	20.10%
	Department						
	Volunteer	\$97.5m	444	\$19.2m	92	4.70%	26.10%
	Career	\$688.9m	502	\$280.6m	137	69.10%	27.30%
	Combination	\$377.4m	761	\$87.8m	188	21.60%	24.70%
	Interest Org	\$30.5m	33	\$18.7m	22	4.60%	66.70%
FY 2011 - \$380.7m	R&R	\$262.7m	765	\$38.4m	114	10.30%	14.90%
	Hiring	\$1.4425b	1,209	\$335.5m	203	89.70%	16.80%
	Department						
	Volunteer	\$141.7m	515	\$11.0m	58	2.70%	11.30%
	Career	\$883.7m	513	\$264.9m	113	65.40%	22.00%
	Combination	\$619.8m	906	\$103.6m	150	25.60%	16.60%
	Interest Org	\$59.3m	40	\$12.7m	10	3.10%	25%
FY 2012 - \$320.6m	R&R	\$245.7m	575	\$32.2m	91	9.90%	15.80%
	Hiring	\$952.3m	977	\$292.2m	194	90.10%	19.90%
	Department						
	Volunteer	\$95.3m	359	\$12.3m	43	3.60%	12.00%
	Career	\$601.9m	393	\$219.6m	93	65.10%	23.70%
	Combination	\$390.3m	750	\$88.2m	147	26.10%	19.60%
	Interest Org	\$106.6m	50	\$11.7m	11	3.50%	22.00%
FY 2013 - \$320.9m	R&R	\$796.2m	602	\$32.1m	79	10.30%	13.10%
	Hiring	\$884.7m	910	\$280.3m	168	89.70%	18.50%
	Department						
	Volunteer	\$512.8m	348	\$9.3m	27	2.80%	7.80%
	Career	\$567.0m	358	\$216.3m	90	64.10%	25.10%
	Combination	\$545.9m	761	\$76.3m	124	22.60%	16.30%
	Interest Org	\$55.2m	45	\$10.5m	6	3.10%	13.30%
FY 2014 - \$340m	R&R	\$183.5m	471	\$34.7m	89	10.20%	18.90%
	Hiring	\$995.0m	864	\$305.3m	247	89.80%	28.60%
	Department						
	Volunteer	\$75.0m	264	13.5m	43	4%	16.20%
	Career	\$641.3m	358	226.6m	82	66.70%	22.90%
	Combination	\$407.8m	680	91.4m	120	26.90%	17.60%

	Interest Org	\$53.4m	33	8.3m	9	2.50%	27.30%
FY 2015 - \$340m	R&R	\$180.0m	474	\$34.4m	87	10.10%	18.40%
	Hiring	\$856.0m	844	\$302.4m	192	88.90%	22.70%
	Department						
	Volunteer	\$83.2m	290	\$10.1m	36	3%	12.40%
	Career	\$502.9m	305	\$240.2m	113	70.60%	37.00%
	Combination	\$412.5m	693	\$75.7m	122	22.30%	17.60%
	Interest Org	\$37.5m	30	\$10.8m	8	3.20%	26.70%

Attachment 3 – Stayton (OR) Fire Department and Nevada Fire Chiefs Association SAFER Grant Overviews

Stayton (OR) Fire Department SAFER Recruitment and Retention Success Snapshot

Grant Highlights

- Created a marketing program that was designed to be updated regularly. The marketing program helped Stayton FD to establish a brand in the community that continues to be recognized even after the grant expired.
- Partially funded a recruitment and retention (R&R) coordinator position. The R&R coordinator works full-time and responds to day-time, weekday calls while many volunteers are unavailable.
- The "join rate" for Stayton FD increased by more than 400% during the early years of the grant and today it remains more than double what it was prior to the grant being awarded.
- Developed a retention plan that is continually updated based on feedback from members that is solicited on a regular basis.

By the Numbers

Years:	2008-2010; 2010-2014
Grant size:	\$455,600 *
Firefighters recruited:	80
Estimated annual value of services:	\$1.44 million

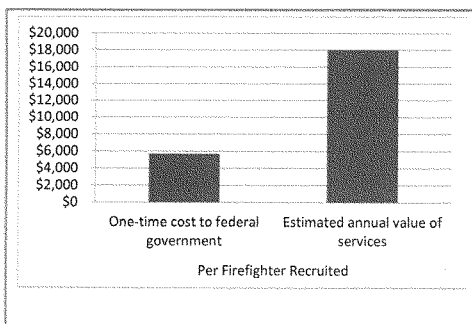
*Total for both grants combined

"Our average volunteer turnout per incident has increased substantially since we received the SAFER grant. This is critical because Stayton has a small population base to draw from for prospective volunteers. Having an R&R coordinator to manage our outreach efforts to the public, work with new recruits and take charge of our retention program has been the key."

Chief Jack Carriger
Stayton Fire Department
NVFC Oregon Director

Statewide Impact

Stayton's marketing efforts led to the recruitment of 29 volunteer firefighters in 15 neighboring departments. Stayton's R&R coordinator also helped to start the Oregon Firefighter Recruitment Network, which benefits volunteer firefighter recruitment efforts across the state.



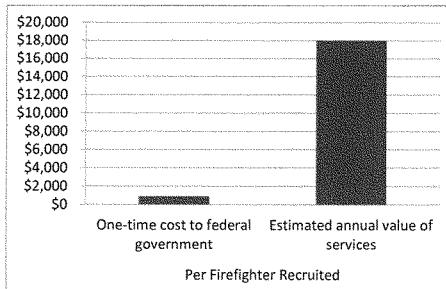
Nevada Fire Chiefs Association SAFER Recruitment and Retention Success Snapshot

Grant Highlights

- Received two grants: for \$400,000 in 2006 and \$499,000 in 2010. Recruited 400 firefighters between 2007 and 2010 and 557 firefighters since 2011.
- Developed marketing materials with the 2006 grant funds; those materials were updated with the 2010 grant funds and are still being used today.
- Directed recruits to nearest volunteer fire department using 1-800 number or website. Created a standard application process for people who apply online.
- Used 2010 grant funding to provide firefighter physicals to new recruits. Firefighter physicals are required under national consensus standards but most fire departments, especially volunteer fire agencies, can't afford them for all new recruits.
- NFCA partnered with the Nevada State Firefighters Association, which represents the volunteer fire service in the state of Nevada.

Healthy Firefighters

National standards require firefighter recruits to receive a rigorous physical examination to ensure that they are healthy. This is extremely important because firefighting is a dangerous occupation and because heart attack, stroke and cancer are leading causes of duty-related firefighter deaths. Unfortunately, due to budget constraints, most volunteer fire departments are unable to provide physical exams for all new recruits. Through the 2010 grant, NFCA was able to provide 367 firefighter physicals to new volunteer recruits.



By the Numbers

Years:	2007-2010; 2011-2015*
Grant size:	\$899,000**
Firefighters recruited:	957**
Departments impacted:	82
Estimated annual value of services:	\$17.2 million

*Period of performance was extended

**Total for both grants combined

"Recruitment and retention is about taking care of your personnel. Making sure they are trained, equipped and healthy enough to do the job. This grant gave us the resources to bring in a large number of new recruits and provide them with everything that they needed to be safe and effective firefighters."

Steve McClintock
Past President
Nevada State Firefighters Association

Make a difference.

Become a volunteer firefighter.

WILL YOU ANSWER THE CALL?

Join the team and experience the excitement and community life that comes with the firehouse. It's a chance to answer the call and make a difference today.

Call **1-800-FIRE-LINE** to find out more about volunteer opportunities in your area.

Attachment 4: Excerpts from an article that appeared in the Summer 2017 issue of Emergency Management magazine on Volunteer Firefighter Recruitment and Retention

Volunteer Fire Departments Are Struggling to Retain Firefighters, While 911 Calls Are Surging

The search for solutions as volunteer firefighter recruitment sputters and 911 calls soar.

by Madeline Bodin / June 29, 2017

Every year an average of 10 volunteer firefighters quit the West Barnstable, Mass., Fire Department, about 27 percent of the department's total. Fire Chief Joseph Maruca never finds out why half of those department members leave, but does know that about one-third of his crew leaves for career firefighting positions at larger, nearby fire departments, typically after serving in West Barnstable fewer than four years.

West Barnstable, with its white clapboard church and saltbox houses on the shores of Cape Cod Bay, is a classic New England village with a population of 3,500, popular with retirees.

Constantly recruiting new firefighters is a strain on the department, and on Maruca. The situation got bad enough that officials looked into staffing the department only with career firefighters. Maruca found that not only would that cost taxpayers more, it would also reduce the number of firefighters responding to each call.

Nationwide, volunteer fire departments save municipalities, and taxpayers, \$139.8 billion per year in firefighting costs, according to a 2014 report from the National Fire Protection Association (NFPA). About 70 percent of America's firefighters are volunteers, and 85 percent of the nation's fire departments are all or mostly volunteer, according to NFPA. The smallest communities — those with fewer than 10,000 residents — are almost always served by volunteer departments, also, according to NFPA.

Across the country, small, rural fire departments like West Barnstable's are struggling to recruit and retain volunteer firefighters. But even where the number of volunteer firefighters is holding steady, the number of calls is exploding. The nationwide tally of the calls departments respond to each year has tripled in the last 30 years, according to NFPA. These numbers influence a community's ability to deal with emergencies, both large and small...

(A portion of this article was deleted to save space. The full article can be viewed at:
<http://www.govtech.com/em/disaster/EM-Summer-2017-Dwindling-Force.html>)

...For Maruca, the solution to his recruiting problem is an NVFC program called Make Me a Firefighter and a lot of effort. Make Me a Firefighter provides marketing materials that Maruca can adapt to his own needs. His first effort was advertisements on Facebook that targeted users in his region by age. (Because of state law, firefighters in Massachusetts need to be between 18 and 65 years old.)

The ad provided a link to the Make Me a Firefighter national website, where potential recruits can search for fire departments in their area. (Kimberly Quiros (NVFC Chief of Communications) said that more than 25 percent of departments nationwide have signed up to be in the program's database.

When Maruca received emails generated by the national database, he replied immediately, asking the potential recruits to stop by and learn more about the department. Then, once a week, simply because the response was so overwhelming, he sent out a welcome email to all the new contacts that included an application. If he didn't hear back, he would email again a month later, with another invitation and application.

One of the things he most appreciates about the program is that the people who responded were a more diverse group than he sees through traditional word-of-mouth recruiting. "If your fire service is made up of community members, it reflects the community," Maruca said. That can mean increasing a department's racial or ethnic

diversity, but it also means loosening the grip of the clique of families that seem to fill every small-town fire department. And that may be more difficult.

In his town, Maruca sees women as his biggest untapped pool of recruits. Women make up half of almost every community, he says, yet they are only 10 percent of his recruits. Departments across the country have similar numbers. "No matter where you are in the country, this is your biggest area for growth," he said.

Through the program and the Facebook ads, the department received 62 inquiries. Ten of those people applied, Maruca said. That was more recruits than he had spaces to fill in the next training class, so some recruits are waiting to attend the next.

It's a hopeful sign, Maruca said, but the new normal is constant attention to recruiting and more flexibility in assigning deployments. "It's a very dynamic process to keep us functioning."

All of these challenges don't mean that emergency managers should give up on using their traditional infantry of volunteer firefighters, Quiros said. A stronger volunteer fire department means a stronger community response to just about any emergency. Instead, she suggests, emergency managers should advocate for their fire department as they would for any true partner in their mission. When volunteer firefighters have the resources they need, she said, the whole community benefits.

Steve Hirsch Bio

Steve Hirsch is the First Vice Chair and Kansas State Director of the National Volunteer Fire Council (NVFC). Steve also serves as the Training Officer for Sheridan County Fire District # 1, Thomas County Fire District #4, and Grinnell Fire Department, all of which are 100% volunteer fire departments. Steve has served as Secretary of the Kansas State Firefighters Association since 2000. His father started a rural fire district in north central Kansas in 1963, the year after he was born, so he grew up in the fire service. In his other life, Steve serves as the County Attorney in Decatur County and is a former County Attorney in Sheridan County, both located in northwest Kansas, having been elected in Decatur County seven times beginning in 1988 and in Sheridan County from 2014 to 2017. He also has a private law practice and serves as city attorney for 18 cities in Norton, Rawlins, Decatur, Sheridan, Thomas, Phillips, Graham, and Gove counties. He is a graduate of Kansas State University and Washburn School of Law.

Chairwoman COMSTOCK. I now recognize Dr. Horn to present his testimony.

**TESTIMONY OF DR. GAVIN HORN,
RESEARCH PROGRAM DIRECTOR,
ILLINOIS FIRE SERVICE INSTITUTE**

Dr. HORN. Chairman Comstock, Ranking Member Lipinski, and Members of the Subcommittee, thank you for the opportunity to participate in this important hearing.

As part of the larger discussion, I would like to focus my comments specifically on the American research enterprise that is supporting the fire safety of the nation through a component of the AFG grants, specifically, the Fire Prevention Safety Grant program. Between fiscal year 2011 and fiscal year 2015, a little over \$170 million has been awarded from the Fire Prevention program, approximately \$33 million of which has been devoted to the research and development activities, which I'll refer to as R&D.

A little over \$6.5 million and six projects per year have been supported between fiscal year 2011 and 2015, a significant reduction from fiscal year 2006 to fiscal year 2010 where an average of nearly \$10 million was awarded for over 11 projects per year.

While a relatively small component of the overall AFG program, the fire prevention safety R&D activities are unique in that they support national programs, which strengthen local fire departments' ability to utilize the larger AFG and SAFER programs. Indeed, this is the only program, only national funding program specifically devoted to enhancing the health, safety and effectiveness of firefighters through projects such as the one that you'll see on the video screen that's going to play behind me.

The fire service is in desperate need of federal funding to advance research projects that support evidence-based policies to address longstanding issues in this dangerous occupation. At the same time, the risks, the hazards are evolving as the fire service responds to new operational realities and new operational missions.

A variety of organizations and stakeholders developed a series of needs analysis and research agenda to support fire departments in the face of this changing risk profile. Documents such as Project Responder and Interagency Board Priority List along with firefighter-centric needs analysis produced by stakeholders and partners—the National Fallen Firefighters Foundation, the Fire Protection Research Foundation—in addition to specific work by NIST, their research roadmap for smart firefighting and NFPA's United States Fire Service Needs analysis, quite important snapshots of the American fire service which I review in my written testimony.

However, these documents are importantly reviewed very regularly and updated by the fire service stakeholders themselves, often with the research community. In each funding cycle for the Fire Prevention Safety grants, they provide invaluable support as the voice of the fire service to guide investments made by the AFG in this area.

Stated bluntly, the Fire Prevention Safety R&D grant program is absolutely vital for a broad-based, action-oriented federal research program focused on the needs of the fire community, one that provides incredibly high impact for fire departments across the

country with relatively small investment. Largely due to the recent Fire Prevention Safety-supported research projects, significant advancements have had a direct and profound impact on the fire service. Our understanding of the hazards associated with structural firefighting, the need for appropriate staffing levels, effective and efficient tactics, and cardiovascular risks associated with firefighting have all had dramatically increased understanding due to the focused research support by this R&D program. We must continue to be evaluated as our landscape continues to evolve.

Our understanding of the chemical and toxic exposure that a firefighter faces is beginning to come into focus, and our understanding of the post-traumatic stress impact is just now developing, and risks from outside the traditional response theater including violent incidents and changing costs related to drug—to the drugs are driving demand for changes in protection beyond the traditional formal considerations. And the world around us begins to embrace smart technologies and internet of things, we too are learning how to leverage this cyber physical infrastructure to improve our capabilities and our effectiveness.

Impacting these areas, the R&D program has had significant broader impacts. It's driven an increase in scientific literature focused on the firefighter themselves. Dr. Sara Jahnke from the National Development Research Institute did an analysis and showed that almost 70 percent of all articles that are referenced on the PubMed index with the term "firefighter" come from after the advent of R&D funding over the past ten years, 70 percent. It changes in a way academic researchers interact with the fire service have driven drastic improvement in the research to practice protocol. As a result, there are specific and focused efforts that have influenced a wide range of standards and policies across the country from PPE manufacturing to fire ground tactics, to health and safety practices, to purchasing decisions. Research is impacting practice. And this research has included broader impacts well beyond the fire service, adding to the state of science in many disciplines that support the fire service.

So while the Fire Prevention Safety program has been successful in supporting the evolving needs of the fire service, there's important opportunities that could lead to even greater reach of this program, which I detail in my written testimony, but a couple important points.

Considering the high benefit-to-cost ratio, it would be appropriate to restore funding and award rates at the levels at fiscal year 2006 to fiscal year 2010 at a very minimum. It is also important to look at different funding mechanisms, providing for longer duration funding mechanisms which would allow longitudinal projects such as a five-year-plus potential for five more years of renewal would allow research to use the strongest research design available which will allow even greater scientific rigor and further increase credibility of the program.

There's been discussion for years of funding centers of excellence through the Fire Prevention Safety program, and there's now a broad discipline—broad-based transdisciplinary group that can support that work and benefit from that.

It's also important to continue to fund an increase of visibility for exploratory projects that can help lead the fire service's understanding of some of the risks that we face on the fire ground.

In summary, the Fire Prevention Safety Grant and particularly the R&D program is a relatively small component of the AFG activity but it has a broad national impact. It informs the conversation held by many of the fire service organizations sitting here. It supports fire service local departments by empowering improved purchasing decisions to the AFG grant program, better understanding of manpower requirements through SAFER, and informed development of local policies, procedures and practices based on the best science available.

Thank you very much for the opportunity and welcome any questions at the appropriate time.

[The prepared statement of Dr. Horn follows:]

Chairwoman Comstock, Ranking Member Lipinski, and members of the Subcommittee, thank you for the opportunity to participate in this important discussion today.

My name is Gavin Horn and I am the Director of Research at the Illinois Fire Service Institute. The Illinois Fire Service Institute (IFSI) is the statutory State Fire Academy for Illinois. Since 1925, first responders from across the state and world have relied on IFSI to deliver hands-on, innovative, and top quality training, education, and research. IFSI is an Institute within the University of Illinois at Urbana-Champaign, a co-location that allows collaboration between research faculty and students with broad scientific expertise and the applied fire service knowledge to tackle fire related problems that face our nation. IFSI houses a nationally recognized research program devoted to firefighter health and safety and has lead or is involved in a number of large-scale projects focused on improving firefighter health, safety and effectiveness across the spectrum of fire department capabilities and responses. A key aspect of this work is the opportunity to collaborate nationally and disseminate research results to the fire service in a manner that can be effectively implemented. I am a member of the National Fire Protection Association's (NFPA) Technical Committees on Special Operations Clothing & Equipment and Fundamentals of Fire Control within a Structure Utilizing Fire Dynamics, a member of the Board of Trustees for the Fire Protection Research Foundation (FPRF), and a member of the Advisory Board for Underwriter Laboratories (UL) Firefighter Safety Research Institute.

I was invited to participate today to discuss the following three topics:

1. Priority needs for the fire safety of the nation
2. Effectiveness of the FIRE and SAFER grant programs in addressing the needs of the fire community
3. Recommended improvements to the grant programs or the U.S. Fire Administration.

In this testimony, I will focus my comments on the American research enterprise that is supporting the fire safety of the nation through the FIRE grant program and in particular the Fire Prevention & Safety (FP&S) grants. Specifically, I will provide a perspective regarding setting research agendas and identifying research priorities broadly covering fire protection and fire safety for fire departments, communities and the safety of the nation. Although several research agenda have been developed to support domestic emergency response, I've been asked to touch on current research priorities that focus on fire service response related to the FIRE grants. My remarks will focus on progress that has been made on these research agenda items as it relates to the FIRE grants program – particularly the Assistance to Firefighters (AFG) Fire Prevention & Safety (FP&S) activity. While a relatively small component of the overall AFG program, the FP&S activities are unique in that they support national programs as opposed to direct funding of local capabilities. Indeed, they are the only national funding program specifically devoted to enhancing the health, safety and effectiveness of the responders who protect our communities.

Background

The U.S. Fire Service is facing an important crossroads in the coming years. The number of fires in the United States has decreased by 59% since 1977¹. Civilian fatalities have decreased in a similar magnitude, reaching historic lows in 2012¹. Despite these positive trends, the challenges facing the fire service community are substantial; including the size and construction of new homes and the proliferation of synthetic, petroleum based products that are ubiquitous in homes and businesses. As a result, fires grow more rapidly, reach flashover more quickly, and release more toxic gases at the scene. New capabilities around homeland defense are being added to responsibilities of fire prevention and suppression, hazardous materials, search and rescue, and medical response; and budgetary constraints often mean financial resources are severely limited. The fire service is in desperate need of federal funding to advance research that supports evidence-based policies to address long-standing issues in a dangerous occupational sector that has not historically been supported by research, and to address emerging risks and hazards as the fire service responds to new realities around fire risks, and new operational response scenarios.

There have been many important improvements in fire service practice and in the health and safety efforts in the fire service. However, much more needs to be done to protect firefighters as evidenced by the fatality and injury statistics that are reported each year. Practices and innovations within the Fire Service, such as seatbelt usage, increased SCBA use, some improved health and wellness activities, and widespread adoption of the Incident Command System have likely led to fewer avoidable injuries and fatalities and more effective fireground operations. Comprehensive research into complex problems, evidence-based policies, good training tools, technology enriched solutions and novel interventions must continue to be developed to support the Fire Service – and this need is made more urgent in a time of scarce resources and competing mission requirements.

Largely due to recent, AFG-supported research projects, significant advances have been made in in recent years that have a direct and profound impact of FF health, safety and operational effectiveness.

- 1) Our understanding of the hazards associated with structural firefighting have increased dramatically. Research has provided a greater understanding of the development, propagation and dangers of modern residential fires – and often this research based understanding is in opposition to what had been historically “understood” by firefighters to be how fire behaved. The lack of understanding of the fundamentals of fire behavior puts every firefighter at grave risk. Research into fire behavior and the hazards it produces remains a fundamental need of the fire service.
- 2) Our understanding of the protection needed from PPE and the physiological burden imposed by the gear has led to newly designed protective gear, and important tactical guidance that increases firefighter effectiveness while decreasing risk. New materials and a better understanding of the physiological risks of firefighting make this a fruitful area of research to continue to explore.
- 3) Our understanding of the cardiovascular risks associated with firefighting have increased dramatically. We know that sudden cardiac events are the leading cause of duty-related deaths among firefighters and they are far more likely to occur after fire suppression activity than station duties. Substantial evidence shows convincingly that firefighting leads

¹ <http://www.nfpa.org/news-and-research/fire-statistics-and-reports/fire-statistics/fires-in-the-us/overall-fire-problem/trends-and-patterns-of-us-fire-losses>

to high levels of cardiovascular strain. Ongoing research is exploring the causes of cardiovascular events - such as plaque rupture and arrhythmias- to better inform medical screening procedures. Research efforts to better describe the physiological demands of firefighting and how to support peak physical performance of individuals doing arduous work are critical in the fire service – just as they are in the military.

- 4) Our understanding of the chemical/toxic exposures that firefighters face is just coming into focus along with studies documenting that firefighters have an increased risk for several types of cancer. Fires produce hundreds of toxic compounds, and some are carcinogenic like benzene and certain polycyclic aromatic hydrocarbons (PAHs). Research is needed to identify exposure routes and to develop effective mitigation strategies to decrease exposure risk.
- 5) Our understanding of the post-traumatic stress impact is just now developing. Our awareness of firefighters risk for substance abuse and taking of their own lives is causing great alarm within the fire service and is an area that requires additional research.

Many risks are known, and significant progress has been made, yet risks continue to change, and the fire service needs to be able to respond. Our response theatre grows increasingly diverse and increasingly complex as building construction techniques continue to change, often driven by affordable housing and energy efficiency concerns. The fuels in our structures continue to change, driven by comfort, consumerism, economics and marketing. The Fire Service continues to expand and take on new challenges outside of traditional fire suppression, including rescue and medical tasks along with high risk, low frequency response such as hazardous materials and homeland security responses – and importantly leading the way in many jurisdictions in fire prevention efforts. And the risks from outside the traditional response theatre including violent incidents where weapons have been utilized against firefighters while battling blazes or medical emergencies, are driving a demand for changes in protection beyond the traditional thermal considerations. As all of these changes occur around us, the fire service needs to remain adaptable in the face of declining budgets and/or declining membership/volunteerism in some parts of America. A national research program, guided by fire service and researchers alike and funded through national programs such as AFG, can guide the development of new tools, technologies and techniques at a pace that can keep up with the surrounding changes. Without such a program, our capabilities and our safety will lag.

1. Priority Research needs for the fire safety of that nation supported by FIRE grants

A variety of organizations and stakeholders have developed a series of needs analyses and research agendas to support the advancement of capabilities, health and safety of the fire service in the face of this changing risk profile. While this process has a long history – dating back to America Burning and beyond – I will limit this review to work that has been conducted in the past 10-15 years. What follows is not a complete treatment of all analyses that exist, but covers those that I believe to be most applicable to the FP&S grant program of interest today.

1.1. Technology centric needs analyses – Emergency Responders:

- **Project Responder series** - *Project Responder 3: Toward the First Responder of the Future*² and *Project Responder 4: 2014 National Technology Plan for Emergency Response to Catastrophic Incident*³ – Building off the original ‘Project Responder’ report in 2004, and prepared by the Homeland Security Studies and Analysis Institute for the Department of Homeland Security Science and Technology Directorate (DHS S&T) in 2012, Project Responder 3 focused on identifying gaps between current emergency response capabilities and those required to respond to *catastrophic events*, and included a prioritization of areas of investment to fill these gaps. The study identified 12 broad priorities across all first response disciplines, and these top 12 priorities are further divided into three tiers with Tier 1A representing the capability gaps of the highest importance. Project Responder 4 expanded this list to 14 priorities around the broad areas of situational awareness; communications; command, control and coordination; responder health, safety and performance; logistics and resource management; casualty management and training and exercise.
- **The Interagency Board R&D Priority List**⁴ – The mission of the InterAgency Board for Equipment Standardization and Interoperability (IAB) is to strengthen the nation's ability to prepare for and respond safely and effectively to emergencies, disasters, and chemical, biological, radiological, nuclear or explosive (CBRNE) incidents. Each year, since 2007, the IAB, through its membership, has generated a priority list for the future of research and development. Many of these topics directly or indirectly support the Fire Service. This priority list is largely focused on technological solutions for responder needs.
- Consistent among these series of analyses is the high (often top) prioritization given to the need to locate responders in real time during an incident. This remains a priority that has received significant investment, including through FP&S R&D grants, but where much work is still needed.

1.2. Building centric needs analyses – Fire and Fire Protection:

- The **National Institute for Standards and Technology (NIST)** has conducted a series of needs analyses, identified gaps, and established priorities detailed in the *Reducing the Risk of Fire in Buildings and Communities: A Strategic Roadmap to Guide and Prioritize Research* report⁵ that built off earlier projects that prioritized building intelligence needs^{6,7} in addition to the measurement science research needs highlighted here.

² http://www.nisconsortium.org/portal/resources/bin/Project_Responder_3_1423591018.pdf

³ https://www.dhs.gov/sites/default/files/publications/Project%20Responder%204_1.pdf

⁴ <https://www.interagencyboard.org/publications/priority-lists>

⁵ *Strategic Roadmap for Fire Risk Reduction in Buildings and Communities.*

http://ws680.nist.gov/publication/get_pdf.cfm?pub_id=909653

⁶ Workshop to Define Information Needed by Emergency Responders During Building Emergencies.

<http://fire.nist.gov/bfrlpubs/fire05/PDF/f05017.pdf>

⁷ Delivering Building Intelligence to First Responders.

http://ws680.nist.gov/publication/get_pdf.cfm?pub_id=903815

- ***Changing Severity of Home Fires*⁸** - In 2012, the U.S. Fire Administration invited leading national organizations representing the Fire Service, fire researchers and other stakeholders in home fire safety to explore how changing building contents, construction techniques and firefighting tactics are affecting the way fires grow and develop in today's homes. These stakeholders jointly developed an eight-point action plan to summarize identified risk reduction strategies, including certain strategies based upon novel technologies.
- ***Fire Protection Research Foundation's (FPRF) 2014-2019 Research Priorities*⁹** - The Fire Protection Research Foundation plays an important role with the FP&S R&D grant program, helping to support connections between academic research and the fire service community in a wide range of research topics and then assisting in translation to NFPA standards where an appropriate part of project dissemination. With input from members of NFPA technical committees, staff, and leadership, the FPRF developed a series of research priorities in 2014, building off their 2008 research agenda. The stated goal is to identify emerging challenges for NFPA standards and how the Foundation can develop research information to help address those challenges. These priorities sit at the intersection between building centric and firefighter centric needs and include;
 - Expanding focus to include developing strategies to reduce residential fire losses
 - Developing fire safety strategies for changing social demographics
 - Developing fire safety strategies for sustainable, resilient communities
 - Developing guidance for fire fighter tactics to adapt to emerging technologies and strategies
 - Facilitating research, development and use of cyber physical systems and integrated technology/systems for fire safety
 - Exploring strategies to integrate fire safety into emerging health and safety cultures
 - Assessing the factors that impact the effectiveness of fire protection systems

1.3. Firefighter centric needs analyses:

- ***The National Fire Service Research Agenda*¹⁰** - Led by the National Fallen Firefighters Foundation (NFFF), the National Fire Service Research Agenda was originally developed in 2005, and reevaluated in 2011 and 2015 to identify research gaps that contribute to the Firefighter Life Safety Initiatives of the Everyone Goes Home Program. The Agenda was created by a diverse group of Fire Service representatives and those from supporting research agencies, spanning a wide range of experiences, with the goal of eliminating preventable line-of-duty injuries and fatalities. Each of the three reported agendas included input from a broad base of more than 100 researchers and fire service personnel and the subsequent reports built off those prior. The current (2015) research agenda found significant overlap between the seven groups focused on Community Risk Reduction; Data Management; Emergency Operations; Health and Wellness; Occupational Diseases of Firefighting; Tools and Equipment; and Wildland Firefighting. The broad agenda covers

⁸ http://www.usfa.fema.gov/downloads/pdf/publications/severity_home_fires_workshop.pdf

⁹ <http://www.nfpa.org/news-and-research/resources/fire-protection-research-foundation/research-planning>

¹⁰ <http://www.everyonegoeshome.com/wp-content/uploads/sites/2/2016/02/2015-Research-Agenda-Symposium-Report.pdf>; <http://www.everyonegoeshome.com/symposium/report2.pdf>

topics in each of these categories and is recommended for review and reference for those who are applying for FP&S R&D awards in the NOFO.

- **NIST Research Roadmap for Smart Fire Fighting¹¹** - This roadmap was constructed to identify and address high-priority measurement science research challenges, technical barriers, and related research and development gaps that hinder widespread application of Smart Fire Fighting technologies and systems to enhance building and community fire protection, making fire fighters more effective and efficient, positively influencing their safety and health, and generally supporting progress in resolving the overall fire problem. Each chapter was developed by subject matter experts from the scientific domain and fire service domain. This document provides planning for how the firefighter, local area sensor and building located sensors can work together in order to increase effectiveness and reduce risk across the spectrum of fire department functions (from inspection to response to post-fire investigation)
- **NFPA United States Fire Service Needs Assessment.** The NFPA *United States Fire Service Needs Assessment*¹² helps to identify where investment is needed in supporting local jurisdictions - particularly those in smaller communities - to attain basic levels of capabilities. In 2015, it was found that a large percentage of departments still cannot outfit each of their firefighters with self-contained breathing apparatus, radios and modern personal protective clothing. This same assessment found that, in addition to basic response capabilities, the overwhelming majority of the departments do not have wellness programs such as behavioral health and/or firefighter fitness and health.

While these assessments and agenda provide an important framework for the development of a research program to support fire and firefighter safety, there are some important limitations of each. In most cases, these documents are the output of a large gathering of individuals with broad expertise, but they are often limited to the scope of knowledge of those who are invited to the table as well as the instrument that is being utilized to collect this information. Thus, the guidance that they provide should not restrict the pathway forward in research. For example, the terms ‘Cancer’ and ‘Behavioral Health’ did not appear on the 2005 NFFF National Fire Service Research Agenda. In 2011, as the awareness in the fire service began to evolve, these phrases began to appear in a few recommendations. Both appear in multiple recommendations in the 2015 NFFF Research Agenda document and are leading topics of conversation in today’s fire service. In the NFPA Needs Assessment, questions specifically regarding these concerns were added in the 2015 assessment (Behavioral Health Program; Exposure control/PPE decontamination; Monitoring air quality on fireground). However, it is important to note that the FP&S funded work from UL on fireground smoke exposure in FY2007 and behavioral health awareness study at Texas A&M in FY2010. *These initial studies have laid the groundwork for the significant research that the FP&S is currently funding in both areas, reinforcing the notion that fire service researchers are in a unique position to recognize risk and design studies to clarify the magnitude of the risk and interventions to address it effectively.*

¹¹ <http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.1191.pdf>

¹² <http://www.nfpa.org/news-and-research/fire-statistics-and-reports/fire-statistics/the-fire-service/administration/needs-assessment>

2. Effectiveness of the FIRE grant program in addressing the *Research* needs of the fire community

Stated bluntly, *the FIRE grant program is absolutely vital for a broad based, action oriented federal research program that is focused on the needs of firefighter community. The relatively small slice of the AFG grant programs that is allotted to the Fire Prevention & Safety (FP&S) grants provides an incredibly high impact on fire departments across the country* – increasing their effectiveness and helping them operate more safely. While other aspects of the AFG focus largely on supporting local equipment, training and staffing needs – which are all critical elements of a comprehensive local response capability – the FP&S program provides an opportunity to focus on prevention programs that can build resiliency in our communities, through local effort as well as supporting national level programs that feed to the local communities. Between FY2011 and FY2015 (last set of complete data available), a little over \$170M has been awarded from this program compared to \$1.5B and \$1.7B in the AFG and SAFER programs. Of the limited pool of money directed to FP&S, a small portion of this money has been devoted to the Research & Development (R&D) activities (\$33M). Between FY06 and FY2010, an average of nearly \$10M was awarded to 11 projects each year, though only a little over \$6.5M and 6 projects per year have been supported between FY2011 and FY2015.

The FP&S R&D activity is a small but focused program in that “*The goal of this Research and Development Grants Program activity is to reduce firefighter fatal and nonfatal injuries and improve firefighter safety, health, and wellness.*”¹³ These grants are tied directly to the voice of the fire service, as part of the Notice of Funding Opportunity (NOFO) directs the applicant to the NFFF Research Agenda. A unique aspect of these grants is that they are reviewed not only by academic subject matter experts to ensure scientific rigor, but also by a Fire Service review panel to ensure the proposed project addresses a concern of importance, can be implemented by the Fire service and has an important potential impact. In this way, the FP&S program provides a unique, broad, and relevant review of these projects in order to improve the likelihood of success, not only in the lab, but on the fireground.

Importantly, the type of occupationally focused, applied level research that has led to so much success in the AFG program is not as easily funded by other Federal agencies such as National Institutes of Health (NIH) or the National Science Foundation (NSF). Efforts to translate scientific findings into fire service policies are also unlikely to be funded through other Federal agencies, yet remains a critical aspect of the FP&S funding program.

2.1 Examples of FP&S supported research

There are multiple examples of successful research projects funded by FP&S R&D activity. Here, I highlight a few specific examples to describe relative impact on the fire service and the larger AFG and SAFER grant programs.

¹³ <https://www.fema.gov/fire-prevention-safety-grants-research-development>

- **Cardiovascular** – As highlighted by the yearly NFPA reports, the leading cause of on-duty firefighter fatalities is sudden cardiovascular events. This fact has remained constant for the last several decades. In the first NFFF Research Agenda, the importance of understanding the cardiovascular implication of firefighting and developing protective interventions was broadly highlighted. Even in early technology needs assessments, physiological status monitoring (PSM) was highlighted as a critical avenue for further research. As such, funding from FP&S R&D grants has supported significant and enduring research in this area, where studies have focused on
 - Characterizing cardiac strain of firefighting including the impact of different configurations of PPE and different types of activities
 - Protective value of fitness and nutrition interventions
 - Efficacy of pharmacological interventions (aspirin, statins, Vitamin C)
 - Appropriate medical screening to detect structural heart disease that increases likelihood of sudden incapacitation and death

Over the past 10 years, this work has been advanced by researchers at Harvard, Skidmore College, Pittsburgh, Illinois and Arizona, resulting in greater understanding of the risks firefighters face as well as viable interventions to reduce these risks. Much of this research has been translated to the fire service through NFPA health and safety standards, USFA reports, IAFF/IAFC activities such as the Wellness/Fitness Initiative (WFI) and through NVFC and NFFF channels - just to name a few.

- **Firefighter location and PSM technologies** – The first NFFF research agenda and needs analyses from Project Responder and IAB each consistently highlighted the importance of tracking and locating responders in an emergency incident and monitoring their status. This too was an area of early R&D investment by the FP&S grants, where different approaches were proposed and funded. At least one technology has successfully transitioned to a commercialized product and other projects have helped to initiate standardizable evaluation methods for location technologies. Current AFG funding is supporting a project to advance targeted technological solutions for improved firefighter safety (ECG monitoring, improved heat stress algorithms, particulate monitoring). While this topic still remains one of the highest priorities in the fire service and an important technological question, the FP&S program provided some of the earliest funding to address this concern and begin to develop a solution.
- **Firefighting tactics** – Through a series of studies led by Underwriter's Laboratories as well as projects from NYU/NIST, the American Fire Service has a greater understanding of the modern fireground environment to which we respond. Their substantial body of research has helped the fire service appreciate that temperatures in building fires using modern construction materials and polymer based furnishings are far higher than temperatures produced by legacy furnishings of natural materials. These modern fire environments also produce products of combustion that contain far more toxicants and carcinogens that may have multiple detrimental effects on the human body. Researchers have also shown that light-weight construction methods can significantly impact the time before structural collapse, changing the risk profile for firefighters and occupants alike. In

one of the broadest information sharing efforts aimed at the fire service, these research findings are constantly vetted through firefighter subject matter experts, shared through on-line and in person programs across the country.

- **Fireground staffing** – As early as 2008, a series of studies led by CFAI-Risk on fire fighter safety and deployment of resources was designed to enable fire departments and authorities having jurisdiction to make informed decisions regarding resource allocation and service using scientifically-based community risk assessment. As today's fireground and fire equipment continues to evolve, so does research to understand the strenuous nature of firefighting on the safety and health of personnel on the fireground, in particular the risk for repeated exposures and working through multiple SCBA bottles during firefighting activities (as opposed to relieving crews after 1-2 bouts of firefighting work). This knowledge helps local jurisdictions determine the relative risk of different staffing levels that can be used to support SAFER grant proposals and/or staffing strategies.
- **Musculoskeletal injuries** – Addressing some of the leading injury concerns in the Fire Service, the FP&S program has funded several projects related to musculoskeletal injuries. These studies have focused on risks on the fireground as well as the wide variety of other emergency responses that firefighters are engaged in. Specific studies have focused on the impact of PPE and fatigue from firefighting operation on ability to work and move on the fireground, development and assessment of assist devices to move medical patients/occupants out of structures and the development of exercise programs to reduce the risk for back injuries which may be encountered on the fireground, medical calls or simply calls for assistance.
- **Cancer** – The need to more fully understand the cancer concerns in the fire service initially appeared on the 2011 NFFF Research agenda and was brought into sharper focus in the 2015 document. While this topic has relatively recently appeared on the agenda, investment by the FP&S program has already provided opportunities for vigorous study. Ongoing projects are studying the exposures firefighters face on the fireground, methods to improve protection from these exposure, methods to clean firefighters and PPE after these exposure, tools to monitor particulate on the fireground as well as a broad study to evaluate exposure tracking system and create a biomarker analysis center to study epigenetic effects. While we are making rapid strides in this area, there is much more to be done.

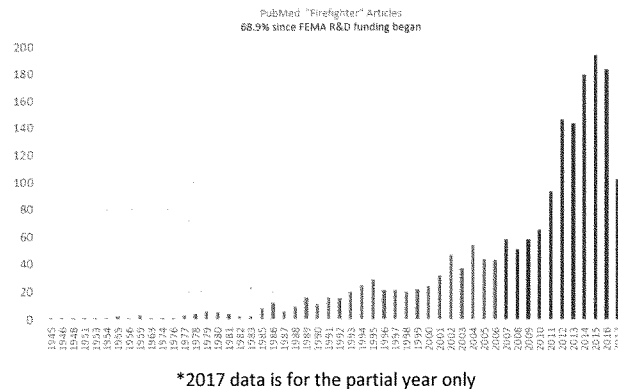
Broad multidisciplinary problems require broad multidisciplinary teams. One of the most encouraging trends in the FP&S R&D programs is the high degree of collaboration among researchers investigating health and safety concerns among firefighters. The challenges that firefighters face are often complex and overlapping, and researchers have begun to leverage modest resources to provide high impact data through large-scale, comprehensive studies. For example, a single study combining researchers in fire dynamics and tactics (UL), occupational chemical exposure (NIOSH) and cardiovascular stress (IFSI) is uncovering new information on fireground risks in a manner that would not be possible without the entire team's expertise¹⁴.

¹⁴ <https://www.youtube.com/watch?v=uZO3GO1Nd-E>

2.2 Impact of FP&S supported research

There are a multitude of different metrics that can be utilized to characterize the impact of a program and here I will share just a few. The FP&S and specifically funding for R&D programming has a) driven an increase in academic research focused on the firefighter, b) changed the way academic research interacts with its stakeholders to improve research to practice, c) directly influenced a wide range of policies (SOGs and SOPs) across the country from fireground tactics to support policies to purchasing decisions, and d) had broader impacts well beyond the Fire Service audience for which the work was initially targeted.

Influx of Peer-Reviewed Scientific Research. A simple metric of impact that scientists often point to is production of peer-reviewed scientific journal articles reporting on a specific topic. The figure below has been assembled by Dr. Sara Jahnke from Center for Fire, Rescue & EMS Health Research of the National Development & Research Institutes where she has queried the PubMed index for articles related to 'Firefighter'. While only a subset of the projects that FP&S funds would be indexed here – and not all of these are directly recipients of AFG funding - it is apparent that a significant increase in these articles began in the 2-5 year timeframe after the FP&S program began funding R&D activities in FY2005. In fact, almost 70% of the 'Firefighter' articles located on PubMed were from after the advent of FEMA R&D funding. The state of science has most certainly advanced in the past 10 years largely because of the availability of funds to specifically focus on this topic. This increase in publication record demonstrates the willingness of the academic research community to engage important questions of health and safety for firefighters and demonstrates that the research is of high quality and is being successfully peer-reviewed. Although this rapid increase in a body of scientific literature is encouraging, it is also apparent that the research base supporting the fire service lags considerably behind national efforts to provide scientific support for our military troops who also perform mission critical work and require strong science to support performance in the most effective way - that protects the health and safety of personnel. Given the critical work that firefighters do every day in protecting their communities, and the homeland, it is critical that we continue to invest in science to support the fire service.



Engagement between firefighters and researchers. Along with the impressive record of increasing peer review publications, innovations in the way in which the FP&S program reviews and prioritizes research has improved the delivery of findings from scientists to the fire service stakeholders. For example, recent studies at the University of Illinois - a Research I university – involve collaboration with top faculty from across campus, different academic institutions, and fire service partners. In the past, we would get the funding, design the study, collect data, analyze data, publish academic papers, then report to the fire service. In some cases there would be 2-5 years from award to the time that the fire service would learn of the study. Over the past 3 years, we have increased on focus on communicating with the fire service through social media and fire service media partners. We are holding webinars before data is collected to get the fire service engaged and informed as to why we are doing this work. In some cases, this interaction with fire service stakeholders has even allowed us to modify our projects to add measurements on victim tenability or flame retardant exposure based on feedback from these early outreach efforts. Media outlets such as *Fire Engineering* and *Firehouse* broadcast live from our location during and after data collection to provide a behind the scenes view of what is happening to make science more acceptable and digestible to our occupation. Interim reports are produced in a manner that does not interfere with academic peer-reviewed publication. Academic papers are open access and tool kits are developed to translate the findings into tactical and policy considerations for the lay firefighter and fire officer. This fundamental shift was driven by the requirements of the FP&S program that were driven by the fire service themselves.

Research to practice. The FP&S research has directly and thoughtfully impacted practice in fire departments across the country. Previous research has found its way to practice in a multitude of ways. The dedicated and thorough tactics research conducted by UL has led to significant rewrites of standard operating procedures across the country, maybe nowhere more visible than in the largest fire department in the country – FDNY. Separate research at Illinois on fireground rehabilitation and decon practices has continued to inform critical fireground policies for firefighter health and safety. National organizations such as IAFF, IAFC, NVFC, NFFF and others have utilized data and information collected from R&D grants to develop national policy and information sharing for their stakeholders under the FP&S National Programs. A multitude of NFPA standards have been influenced and directly updated as a result of the research conducted as part of this program. Specific examples can be cited, such as the FP&S funded research led by the NYU/NIST team at Governors Island resulting in FDNY applying for a subsequent AFG grant to have positive pressure ventilation (PPV) fans on every engine in the city. Research on the biomechanical impact of larger SCBA sizes has informed purchasing agents as they spec and write AFG grants for new breathing apparatus. And very recent data on fireground chemical exposures has spurred industry to introduce new firefighting hoods and decontamination equipment (among many other technologies under development) over the last year that is likely to continue the loop of FP&S supported research informing AFG supported purchases.

Broader impacts. Importantly, the benefits of the research supported AFG FP&S R&D grants often extend beyond the fire service organization that are the original target. For example:

- Cardiovascular research is of interest to the large CV community as the body's response to the intense strain imposed by firefighting is not easily replicated in lab or other settings. Exercise physiologist and cardiologists are keenly interested in these results as they extend the understanding of human cardiovascular physiology – and means to prevent cardiac mortality and morbidity – continues to develop (*American Journal of Cardiology; Circulation*)
- Heat stress research with the fire service has led to collaborations with the military to improved predictions of core temperature during various activities of interest to both populations (*Ergonomics*)
- Detailed study of fireground chemical exposures has allowed improved understanding of pathway that volatile organic compounds such as benzene (which may be encountered in other occupations) can enter the body and be metabolized (*Journal of Occupational and Environmental Hygiene*).
- Public service messages focused on the value of closed doors as part of a comprehensive home fire safety program were developed from a study of firefighter tactics. While focusing on fireground operations, researchers at UL found significantly increased survivability in rooms with closed interior doors, a finding that has been shared broadly through the internet and social media(*Fire Technology*)¹⁵
- Studies to improve firefighting tactical decisions with regards to water application have recently resulted in new measurement techniques for high temperature moisture and products of combustion (HCN) that have broader application in combustion diagnostics as well as ex vivo porcine model that is providing new insights into skin burn risk for general population.

3. Recommended improvements to the *Research* grant programs

While the FP&S program has been incredibly successful in supporting the evolving concerns and needs of the fire service, there are some challenges that, if addressed, could lead to even greater reach of the program.

- As with many programs, challenges with resourcing to an appropriate level exist. Considering the high benefit to cost ratio, it would be appropriate to restore funding and award rates (at a minimum) to the levels in FY06-FY10. This modest increase in funding and subsequent increase in proposals funded would restore the broad, multidisciplinary scope to the research organizations that participate. When the FP&S program began, many of the projects were from a single organization. After years of cross pollination at mid-year meetings, these individuals have developed into multidisciplinary and trans-disciplinary teams that continue to work together even outside of the FP&S. As individual researchers and institutions have invested themselves in a research focus to support the fire service, we need to have adequate levels of funding to fund well-designed studies that support the mission of the AFG program.

¹⁵ <https://closeyourdoor.org/>

- Allow longer duration funding mechanisms for longitudinal projects, similar to an R01 mechanism that provides funding for 5 years, perhaps with opportunity for 5 more, allows research to use the strongest research designs (longitudinal studies) to address pressing health concerns (cancer, behavioral health, vascular changes, progression of structural heart disease, etc). Such an extension of funding would allow even greater scientific rigor and would further increase the credibility of the program and the impact it has on firefighter health and safety.
- Funding and visibility for dedicated exploratory projects can be increased to support promising work from outside of the existing fire service research enterprise that may have future impacts. Much as initial smoke exposure and behavioral health projects were funded by DHS FP&S prior to their appearance on “needs assessments” and the broad awareness that currently exist within the fire service, money should be dedicated to initiating studies that do not necessarily impact the current research agenda or needs analysis if the science and logic supports its study. This is potentially a high impact area as it leverages the knowledge of the research community in serving the fire service.
- Funding for Centers of Excellence through the FP&S program to create a flexible, trans-disciplinary group of researchers who are dedicated to working with the Fire Service would be a natural extension of the interdisciplinary teams that are currently coalescing to address large complex and interrelated problems in the fire service. A center, if appropriately resourced and supported may be the most cost effective and high impact way to leverage these collaborations
- While there are certainly other factors to be considered when releasing the NOFO and accepting application, a repeatable and consistent timeline would greatly benefit the applicants and support system for this program. This is particularly important for academic applicants who may need to recruit students to work on these relatively short term activities.

In summary, the Fire Prevention & Safety program (and particularly the R&D activity) is a relatively small component of the larger FIRE grant program, yet provides wide-ranging and important impact. that improves the effectiveness of the fire service and enhances the health and safety of the firefighters. Of the total grant program, the FP&S has the broadest national level impact, informing the national conversation through major national organizations (IAFF, IAFC, NVFC, USFA, NFFF) and by supporting local fire departments through empowering improved purchasing decisions (in some cases for AFG grants); better understanding of manpower requirements for varying tasks (supporting SAFER grants); allowing for the development of evidence-based policies, procedures and practices.; and providing critical information and education regarding the health risks that firefighters face and mitigation strategies they can adopt to lessen those risks.

Gavin Horn Bio

Illinois Fire Service Institute at the University of Illinois

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Gavin Horn has served as the Director of IFSI Research since August 2004, immediately after receiving his PhD in Mechanical Engineering from the University of Illinois at Urbana-Champaign. Dr. Horn's research interests lie in the areas of firefighter health and safety research, First Responder technology development, material testing and design, and nondestructive evaluation. Gavin has published over 50 peer-reviewed journal articles and given presentations at professional conferences around the world. He is a member of NFPA's Technical Committees on Special Operations Clothing & Equipment and Fundamentals of Fire Control within a Structure Utilizing Fire Dynamics, a member of the Board of Trustees for the Fire Protection Research Foundation, and a member of the Advisory Board for UL's Firefighter Safety Research Institute. Gavin also serves as a firefighter/engineer with the Savoy (IL) Fire Department.

Dr. Gavin Horn Video:

Title: *IFSI Research*

Published By: Illinois Fire Service Institute

Date: September 24, 2015

<https://www.youtube.com/watch?v=uZO3GO1Nd-E>

Chairwoman COMSTOCK. Thank you.
And I now recognize Chief Browning for five minutes.

**TESTIMONY OF CHIEF H. "BUTCH" BROWNING, JR.,
PRESIDENT, NATIONAL ASSOCIATION
OF STATE FIRE MARSHALS,
LOUISIANA STATE FIRE MARSHAL**

Chief BROWNING. Thank you, Madam Chairwoman. It's indeed an honor to be here. I'm Butch Browning. I'm the Louisiana State Fire Marshal and I'm currently president of the National Association of State Fire Marshals. Over my left shoulder is the Virginia State Fire Marshal, Brian McGraw. I appreciate his attendance and support here today.

The National Association of State Fire Marshals represents the senior state officials in every state, so it's a small group of 50 people who work very hard in their states to support their local fire departments, primarily drive fire prevention programs, fire investigation programs, and data programs, and I'll talk a little bit about that in a minute.

We want to make no doubt about it. The National Association of State Fire Marshals fully support the reauthorization of the AFG, the SAFER, and the Fire Prevention and Safety grants. In addition, as a personal product of the National Fire Academy, I'll you it is the West Point or any other higher, most prestigious institution you can think of. What it does for our state and the people who go to that who have no opportunities in many cases to get leadership training is just phenomenal, and I certainly appreciate what they've done for my life, and you know, I just come before you as an old Louisiana boy, a south Louisiana boy, not north Louisiana, and your temperatures here remind me of being home. But I've just got to tell you, people are alive today, firefighters and citizens, in part to this entire grant program, and the gentlemen who are sitting up here today have seen many, many circumstances of death and loss, and you know, what I encourage you to do, and I think you're doing that, I encourage you to look into the eyes of your firefighters in your districts because you will hear real stories of domestic defenders, and I appreciate that.

At 14 years old, I got involved in the volunteer fire service and found it to be my passion, moved up the ranks, became a fire chief. About 6 months before Hurricane Katrina, we had an AFG grant in the hopper for interoperability, which we didn't have those radios when Katrina came. We were awarded those radios months after, and our department was then ready to handle disasters, and those radios would have never been purchased had it not been for the AFG program. The staffing of firefighters across this country is phenomenal. We have to keep those things up. And of course, the fire prevention and safety.

What I didn't tell you about me is what got me into this business. When I was three years old, I was significantly burned in a fire. My dad subsequently joined the volunteer fire department and put me in the position that I'm in today. The story is what caused my fire was prior to codes and standards when water heaters were not 18 inches off the ground. Today they are. So I'll tell you fire

prevention and safety have saved many children's lives, and I certainly respect that and appreciate that.

I come before you today representing the National Fire Marshals asking that we change the percentage that goes to fire prevention and safety. See, we believe that we need to move some funds from the open competition. We need to remove eight percent into fire prevention and safety to not only get more fire prevention and safety but to provide statewide support to what we do. You know, in the State of Louisiana, we had an operation Save a Life program. We've installed almost 35,000 smoke alarms across the state. In its first year, 12 people's lives were saved. These alarms were installed by small, large and medium fire departments across the state, so we know it works. We know that saving lives is important. We know that fire prevention safety and data. We know that fire suppression forces, and we know that fire investigation and analysis is the way for us to protect the American fire problem.

I'm going to leave you because I want to be brief, and it's kind of on the heels of Mr. Hirsch's story of Mr. Ferguson, who paid the ultimate sacrifice. This past Sunday, I had to give the eulogy to yet another Louisiana firefighter who gave their lives serving their community, a firefighter who was responding to a structure fire, and the firefighter didn't make it. He was involved in a horrific accident in the fire apparatus, and I had to look into the eyes of that family, and what I'll tell you that family's telling you today is that we need more equipment, we need more firefighters, we need more prevention and safety. Those three things working together will go a long way in reducing America's fire problem, and we can rewind to America burning. We can rewind to before we had some of the fire prevention programs and before we had some of the better training for firefighters and see that we made some great headway. This investigation works.

So I come to you in partnership, I come to you in thanks, and I look forward to this process.

[The prepared statement of Chief Browning follows:]



STATEMENT
Of The
NATIONAL ASSOCIATION OF STATE FIRE MARSHALS

CHAIRWOMAN BARBARA COMSTOCK AND RANKING MEMBER DANIEL LIPINSKI
HEARING ON:
U.S. FIRE ADMINISTRATION AND FIRE GRANT PROGRAMS
REAUTHORIZATION: EXAMINING EFFECTIVENESS AND PRIORITIES

SUBCOMMITTEE ON RESEARCH AND TECHNOLOGY
OF THE
COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY

PRESENTED BY
H. "BUTCH" BROWNING
PRESIDENT, NATIONAL ASSOCIATION OF STATE FIRE MARSHALS AND
LOUISIANA STATE FIRE MARSHAL
JULY 12, 2017

For Additional Information Contact: Jim Narva - JNarva@FireMarshals.org

Chairwoman Comstock, Ranking Member Lipinski, and Members of the Subcommittee thank you for allowing me to testify today on behalf of the National Association of State Fire Marshals (NASFM) and the State of Louisiana. My name is Butch Browning and I serve as the President of the National Association of State Fire Marshals, and as the Louisiana State Fire Marshal. I want to thank you for the opportunity to share our solutions to our nation's growing fire safety problem and advocating for additional resources for fire prevention.

The National Association of State Fire Marshals represents the most senior fire officials in each State. Most of our State Fire Marshals began their careers in the fire house, working their way up the ranks, eventually achieving the highest state-level fire service position. Among the many duties of a state fire marshal, one of the most important is fire prevention. As such, incident prevention is a central focus in all our programs.

The National Association of State Fire Marshals supports the reauthorization of The Assistance to Firefighters (AFG), Fire Prevention and Safety (FP&S) and Staffing for Adequate Fire and Emergency Response (SAFER) grant programs to protect the public and the nation's fire service.

The Assistance to Firefighters Grant program, particularly the Fire Prevention and Safety portion, has a history of providing funding for many important and successful programs. Many entities, emergency responders and citizens have benefitted from increased safety from fire events. It is also, however, one of the most sought-after grant programs, as it is also used for research, in addition to fire prevention and safety programs.

Numerous national organizations and institutions of higher learning apply and receive grants under this program, but it remains one of the least funded of the AFG programs, receiving just 10% of the total dollars allocated to the AFG program, and just 5% of the total Fire Grants funds. Under the current AFG and SAFER authorization, State Fire Marshals are only allowed to competitively bid for the 10% of funds under the AFG - Fire Prevention and Safety category.

This funding imbalance has made it extremely difficult for states to ensure the needs of its citizens are addressed in a comprehensive and coordinated manner. A redistribution of funds within the overall AFG program to increase funds in the Fire Prevention and Safety activity will better enable State's to accomplish the fire prevention and safety programs that are at the core of the grant, and vital to public and emergency responder safety across our nation.

NASFM also supports the reauthorization of the United States Fire Administration (USFA), established by Public Law 93-498, the Federal Fire Prevention and Control Act of 1974. The Number 1 Goal of the USFA is to "Reduce Fire and Life Safety Risk Through Preparedness, Prevention and Mitigation". The USFA programs and services contribute to significant reductions in fatalities, injuries and property loss in America. As such, State Fire Marshals look at the USFA as a critical partner in fire prevention in their states. We believe it is in the best interest of the nation to encourage and expand this partnership, and adequate funding is a key component in accomplishing this.

NASFM is committed to the basis and concept of fire prevention activities which prevents incidents from happening, averting fire injuries and damage to property and the economy that ensue, as well as help protect our firefighters who respond to these catastrophic events. As the state's senior fire official, State Fire Marshals are ultimately responsible for fire and public safety in their states and for a variety of emergency situations, including structure fires, arson, pipeline emergencies, hazardous materials response, and wildland/urban interface fires.

The Importance of Fire Prevention

We are extremely concerned that the Fire Prevention and Safety grants do not receive the funding or attention that is needed to save lives and reduce injuries at a viable level. At a time when federal, state and local resources and funding are limited, the most cost-effective way within the AFG grant program to protect the greatest number of individuals and property is to allocate additional funding for Fire Prevention and Safety programs.

Fire prevention activities play an important role in protecting the vitality of our nation. The Federal Fire Prevention and Control Act (FFPCA) of 1974 codified the federal role as Congress realized the federal government has a significant stake in protecting our local communities – and thus – the nation. One of the findings in the legislation described the prevailing public attitude at the time about fire and indisputable facts that had been preventing progress in fire protection. It stated:

“The Nation’s fire problem is exacerbated by (A) the indifference with which some Americans confront the subject; (B) the Nation’s failure to undertake enough research and development into fire and fire-related problems; (C) the scarcity of reliable data and information; (D) the fact that designers and purchasers of buildings and products generally give insufficient attention to fire safety; (E) the fact that many communities lack adequate building and fire prevention codes; and (F) the fact that local fire departments spend about 95 cents of every dollar appropriated to the fire services on efforts to extinguish fires and only 5 percent on fire prevention.”

Sadly, it often takes a major tragedy to capture national attention about the devastating consequences of fire, such as the tragic fire that occurred at the Ghost Ship warehouse in Oakland, California in 2016. Fires most often occur in places where the victims are most vulnerable – in structures that lack built-in protection systems such as smoke alarms, smoke control, adequate egress, and fire sprinklers. When fires occur in large structures that involve mass casualties, such as this, it raises many questions about fire prevention, especially about modern codes, code enforcement, occupancy inspections and the presence of fire protection features.

In the state of Louisiana, we provide fire prevention programs to include a partnership with our local fire departments. One such example is where the Office of the State Fire Marshal provides smoke alarms to needy citizens. For the year of 2014 we documented 12 lives saved by the more than 32,000 units that were issued for local installation. Today, our program, due to lack of state funding and unsuccessful Fire Prevention & Safety grant awards, we are unable to meet requests for new alarms.

The State of Tennessee faces similar challenges in realizing the full potential of their statewide smoke alarm campaign. Like Louisiana, the Tennessee Office of the State Fire Marshal coordinates the installation of smoke alarms to citizens in targeted, high risk areas. They have documented 186 lives saved since 2012 directly tied to the installation of free smoke alarms, yet many areas of the state are underserved due to the lack of resources. Many states throughout the nation have initiated prevention programs designed to prevent fires, yet lack resources to fully address the issues without assistance, all at a time when the often-catastrophic results of fire are on the rise.

Incidents of fire, loss to fire, and fire deaths are on the rise. Prevention is the most efficient and effective means to combat this rise, and the State Fire Marshals are in the best position to help this national problem.

- Public fire departments responded to 1,298,000 fires in 2014, a 4.7 percent increase from the previous year. Public fire departments also responded to 1,345,500 fires in 2015, a 3.6 percent increase from the previous year.
- Civilian deaths from fire have risen every year since 2012. In 2015 alone, 3,280 civilians died in a fire, most in their own home.
- Property loss from fire has increased every year since 2010. In 2015, 14.5 billion dollars in property was lost to fire.

*Source: Fire Loss in the United States. 2015, Hylton J.G. Haynes, NFPA.

Active fire extinguishment is an important and irreplaceable necessity for every community in our nation, but every fire and the devastating effects to lives, property, the economy and the environment that ensue, signal we in the fire service have failed. At the very core of governmental responsibility is to protect our citizens, yet every fire that is not prevented exposes both citizens and first responders to undue harm. This potential for harm is great as shown by these examples from the most current data on the number of fire incidents occurring every day. The 2015 U.S. fire loss clock shows:

- A fire department responded to a fire every 23 seconds.
- One structure fire was reported every 63 seconds.
- One home structure fire was reported every 86 seconds.
- One civilian fire injury was reported every 34 minutes.
- One civilian fire death occurred every 2 hours and 40 minutes.
- One highway vehicle fire was reported every 3 minutes 1 seconds.
- On average, fire claimed nine lives every day.

*Source: NFPA Resource: www.nfpa.org/research

Ensuring an Efficient and Effective Culture of Safety

To specifically address the need to increase fire prevention activities both at the state level and in local communities, and to support the specific mission of the AFG Fire Prevention and Safety grant programs, the National Association of State Fire Marshals is requesting support for the

following changes to the authorizing legislation. All figures are based on the current allocated funding levels and do not reflect any changes that may occur in this legislative year.

- An overall increase of eight percent of the total allocation be set aside for the Fire Prevention and Safety Grants. This would increase the amount to 18 percent of the total, redistributing approximately \$27.6 million of \$690 million under current funding levels.
 - Funding for this increase can come from the percentage currently provided for Open Competition. Thus, while the money goes toward fire prevention, no organization's eligibility to receive those monies is affected, merely what they must use it for.
- Under the AFG Staffing for Adequate Emergency Response (SAFER) grant program, agencies should be allowed to hire fire inspectors, fire investigators and fire prevention staff. These individuals support the specific mission of the grant program and the fire service as a whole, but are currently ineligible to be hired under this program.
- State Fire Marshal Offices should be added to the list of eligible organizations for general AFG grants, expanding opportunities beyond just Fire Prevention & Safety. Despite providing necessary support to the public and fire departments around the country who receive grants, the agencies are currently ineligible under this program.
- A set aside of not less than 17 percent be provided under the Fire Prevention and Safety grants for State Fire Marshals Offices, specifically to fulfill the mission of this grant program.
 - This set aside can be accomplished in a manner similar to the statutory changes done to accommodate State Fire Training Academies during the previous reauthorization.
- The total summation of these changes does not increase the overall AFG budget numbers. Instead, through redistribution it increases the overall Fire Prevention and Safety funds by \$17M, in addition to the \$10.6M for State Fire Marshal Office's to aid them in accomplishing and fulfilling the mission of the grant program.

A redistribution of funds within the overall AFG program to increase funds in the Fire Prevention and Safety activity is vital to public and emergency responder safety. Below is what NASFM requests for FP&S percentage allocation in the reauthorization legislation.

<u>AFG Current Allocation (FY17 \$345 Million)</u>	<u>AFG Proposed Allocation (FY17 \$345 Million)</u>
25% Career Fire Service (\$86.25)	25% Career Fire Service (\$86.25)
25% Volunteer Fire Service (\$86.25)	25% Volunteer Fire Service (\$86.25)
25% Combined Career and Volunteer (\$86.25)	25% Combined Career and Volunteer (\$86.25)
10% Open Competition (\$34.5)	2% Open Competition (\$6.9)
10% Fire Prevention and Safety (FP&S) (\$34.5)	18% Fire Prevention and Safety (FP&S) (\$34.5 + \$27.6 = \$62.1)
2% Non-Affiliated EMS (\$6.9)	2% Non-Affiliated EMS (\$6.9)
3% State Training Academies (\$10.35)	3% State Training Academies (\$10.35)

NASFM is proposing 8% of the Open Competition allocation be moved into the Fire Prevention and Safety category increasing all FP&S funds available from \$34.5 million to \$62.1 million. And further proposing that 17% of the FP&S proposed allocation be provided under the FP&S grants for State Fire Marshals Offices across the country, specifically to fulfill the mission of this grant program. (17% of \$62.1 million = \$10.55 million using current funding levels)

Certain elements of the AFG program have created additional requirements of a State Fire Marshal Office. Projects awarded at the local level under Fire Prevention and Safety require a State Fire Marshal's Office to undertake additional responsibilities. As such, the National Association of State Fire Marshals is requesting your consideration of changes to the program for the following reasons:

- State Fire Marshal Offices are the central collection and distribution point for fire incident data, ultimately providing National Fire Incident Reporting Data to the Federal government. This data is vital to local, state, and federal government efforts in fire prevention and mitigation. Many states dedicate significant resources to this effort.
 - AFG grants require recipients to report to these programs in order to be eligible to receive an AFG grant, thus increasing the overall workload on a state with no remuneration or assistance.
- Using the data collected, State Fire Marshals Offices can determine where, and to what audiences, fire prevention programs should be targeted. They provide this information to local jurisdictions as well as reporting up to the federal government. On numerous occasions, however, they are passed over for grants and are unable to enact programs to respond to data dependent risks that exist in our communities.
 - Independent, private organizations outside the state's authority may receive a grant and conduct safety programs, but without consulting states, or addressing specific prevention needs. Thus, their efforts may be going to those that do not necessarily need it, or worse they provide a false sense of security without addressing the core area of prevention in a coordinated manner.

- Programs enacted at the state level have the greatest potential for efficient and effective results carefully coordinated to help the greatest number of citizens (Many communities may be involved but the fire prevention plan is accomplished through a carefully orchestrated plan).
 - State Fire Marshals Offices who apply, however, are often passed over to fund national research programs that while valuable, affect a much smaller number of individuals focusing primarily on firefighter safety. These types of grants are important, as research is vital, but there is a need to address fire prevention activities to keep people safe and property resilient. The State Fire Marshals are charged across this nation with protecting the citizens of their state through fire prevention, data collection and analyzation, fire investigation and public education; core tenets of the AFG program and the Fire and Prevention Control Act of 1974, yet very few receive any funding outside of state appropriations to conduct these important efforts.
- State level programs take a community risk reduction approach to fire prevention. Not only are they concerned with home fire safety, but wildland fire safety, arson, fire code enforcement, fire investigation, helping special needs and disabled populations, and numerous others. This approach is key to the realization of the AFG Fire Prevention and Safety grant program, and States are uniquely placed to utilize grants received.
- Many sections of the AFG grant authorizing statute fall under the purview of the State Fire Marshals Offices. Specifically, PUBLIC LAW 112-239 “SEC. 33. FIREFIGHTER ASSISTANCE. “(3) USE OF GRANT FUNDS”:
 - (A) To enforce fire codes and promote compliance with fire safety standards.
 - (B) To fund fire prevention programs, including programs that educate the public about arson prevention and detection.
 - (D) To certify—
 - (i) fire inspectors; and “(ii) building inspectors (I) whose responsibilities include fire safety inspections;
 - (E) To support such other activities, consistent with the purposes of this subsection, as the Administrator of FEMA determines appropriate
 - (K) To educate the public about arson prevention and detection.

Conclusion

On October 29, 1974, President Gerald R. Ford signed the Federal Fire Prevention and Control Act affirming a federal responsibility to help address the nation’s fire problem. In his statement, President Ford said:

“While fire prevention and control is and will remain a State and local responsibility, I believe the Federal Government can make a useful difference.”

Forty-four years have elapsed since President Ford issued that proclamation. On behalf of the National Association of State Fire Marshals I ask you to consider the importance of your support

in protecting our communities and the critical infrastructure of our nation. Together we can make a “useful difference” for our citizens.

As the senior fire officials for their state, State Fire Marshals are charged across this nation with protecting the citizens of their state through fire prevention, data collection and analyzation, fire investigation and public education. As such, we are uniquely positioned to carry out the basic tenets of the Assistance to Firefighters Grant Program, especially the Fire Prevention and Safety grants. Often, we simply lack the additional resources that can be made available through this grant program to protect the lives of not only the citizens of our states and communities, but also the vitality and security of our nation.

In closing, I would like to emphasize one important element of this proposed enhancement to the Federal Fire Prevention and Control Act; namely, the redistribution of funds from the open competition category into the Fire Prevention and Safety grants will not reduce the funds available to fire service organizations. Instead, it will simply redirect those funds to be available for fire prevention activities by both state and local jurisdictions within their communities. It is our firm belief this action, and fire prevention activities in general provides the most efficient use of our tax dollars.

I want to assure you, the National Association of State Fire Marshals remains committed to fire prevention and the protection of lives and the economy, a mission we can better accomplish with your support. Again, I thank you personally and on behalf of the National Association of State Fire Marshals for this opportunity and am pleased to answer any questions.

NASFM - 50 States – One Strong Voice for Fire Prevention

The mission of NASFM is to protect human life, property and the environment from fire and related hazards. The principal membership of NASFM comprises the senior fire officials in the United States.



BIO

H. "Butch" Browning, Jr.-Louisiana State Fire Marshal

H. "Butch" Browning, Jr. was appointed the Louisiana State Fire Marshal on March 8, 2008. He has an incredible wealth of knowledge and experience in firefighting, fire training, fire investigation, fire prevention and emergency preparedness. Fire Marshal Browning has a strong belief in value-driven leadership whereby he leads by example and empowers people for success. In his 31 years of service he was Fire Chief for both EBR Fire District #6 and the City of Gonzales.

Browning developed a paramedic ALS transport system, created "Project Life Saver" and "Effective Fire Drill" a program for fire safety in schools. Browning is a recipient of the 2000, 2006, 2008 and 2014 Roy Robichaux Legislative Award. He was also named the 1996 Louisiana Fireman of the year, by the American Legion, and named District 6 Officer of the Year in 1988, 1989, 1991, and 1993.

His accomplishments include being an Eagle Scout, Past President of the Louisiana State Fireman's Association, Past President of the Louisiana Arson and Fire Prevention Association, Graduate of the National Fire Academy's Executive Fire Officer Program, The Commission on Professional Credentialing Chief Fire Officer, a member of the Louisiana Fire Chief's Association, The International Association of Fire Chiefs and is a nationally registered Emergency Medical Technician. He is currently serving as President of the National Association of State Fire Marshal's.

Over the past 7 years he had led the reorganization of the State Fire Marshal's office to include cross-training of personnel and the development of a modern day data management system. Current results show an increase in productivity of 40% along with a reduction in staff of 19%. He embraces building relationships that foster better safety and economic development in Louisiana.

Chairwoman COMSTOCK. Thank you. Great.

And I now recognize myself for five minutes for questions.

As a longtime resident of Fairfax County, I recognize that I've had some of the concerns that you identified on structures and hazardous materials and all the things that we need to be dealing with, and that's why I'm very interested in the Firefighter Cancer Registry Act that we've worked on together, and thank you for your efforts on highlighting that issue.

How are we able to use technology both in that area as well as some of these other areas like, for example when you're going into a structure, what technologies do we have now that might help to better identify where we're going in keeping in touch with everyone. You mentioned the PASS devices that will help. But also things like some of the technology we're using to develop lighter materials that people will have on to protect themselves as well as lighter and more refined and better materials for breathing apparatus so that you'll be both protected but also long-term health consequences. So what breakthroughs are you seeing there and how can these grants help in those areas? I will start with Captain Niemiec but welcome you all to answer.

Mr. Lipinski and I are on the Science Committee so very interested in how we can—and I've certainly seen this in my departments, the new technology and the real promise of both making safer communities but making life easier for our firefighters. I mean, it's never easy but safer.

Captain NIEMIEC. First and foremost, Madam Chair, I will say, you know, through the education, through the prevention—and we have always taken the mantra in Fairfax County of preventing the 911 call, but how does that relate to the firefighters and paramedics in Fairfax County? Last week, several of my colleagues here met and were engaged and involved in a program called Wellness Fitness Initiative, and part of that program is doing just that, is looking at the wellness, looking at the prevention, and then should one of these firefighters or paramedics come down with a cancer, with, you know, cardiac disease, we want to set that standard so that that individual is able to, one, get back on the rig, and then to have the ability to have good quality of life. So we are setting those standards. That of course is coupled with the equipment that we currently have. That's where one, the SAFER, dealing with individuals, dealing with personnel, and then as far as the FIRE grant, dealing with things, and because of these items, in Fairfax County we have been able to get from the AFG, we have been able to do a lot of the prevention, and then if a firefighter, if a firefighter is involved in an emergency situation, not only are we able to provide the training but we have the necessary tools to ensure that that firefighter or firefighters gets out alive.

Chairwoman COMSTOCK. And others? I'm particularly interested in any sort of new devices that you can show us that I'd like to be able to demonstrate to my colleagues as we're advocating more need for this. The more things that we can put in your hands and technology in that way, sometimes that's a very vivid way to demonstrate if people can see how this will make your lives and your jobs safer.

Chief SINCLAIR. Yes. Thank you very much, Chairwoman Comstock, for the question.

The first thing that I want to do is make sure that we recognize that a significant amount of information has been new to the fire service over the last couple of years since the research has come in. A lot of that has to do with the health of the firefighters. A significant doctrinal shift is ongoing right now in the fire service as it relates to transitional attacks, the way that we actually attack fires, because of what we now know due to the research being done by Dr. Horn and NIST and NIOSH that we're not pushing fire like we previously thought, that we can actually hit it defensively and then transition into an offensive attack where we go inside, because once you knock the fire down from the outside and then transition to an interior attack, it is safer for the firefighters.

Our modern home has been plasticized, and as those materials burn, they create these aromatic hydrocarbons that attach to the skin. In the video that you saw, you saw them wiping down, doing gross decon of the firefighters, and we know that 54 percent of those can be taken off the skin in the gross decon but that means that 46 percent of that cancer-causing aromatics will still remain on the firefighters' skin.

So relative to new technology, we just are beginning to see the governors opt in to FirstNet, which is the public safety broadband trust, and we will soon be having communications equipment that will be providing information to incident commanders, something like a recognized phone that has data streams and data elements. We should be able to have wearable technology whereby we will be able to find the X, Y and Z coordinates for every firefighter that is on the scene. All of that is being done in cooperation with these types of grants, this type of information, and we're just right on the cusp of seeing a lot of things that are coming down the road in the next couple of years. Thank you.

Chairwoman COMSTOCK. Thank you, and I see that I'm out of time, but I would invite any of you to share any of that information with the Committee so that we can, as we're doing our job of advocating for these grants, really draw that picture for our colleagues. Thank you.

Now I recognize Mr. Lipinski.

Mr. LIPINSKI. Thank you.

Captain Niemiec, dzień dobre, and I'm not going to push my Polish any more than that.

Chief Browning, you had mentioned that you had said we should look in the eyes of our firefighters, first responders, and learn about what they're doing, and I want to thank all of you for—you know, we are here to do that. We do that back in home districts. I know I certainly do, and appreciate the work that you do, and we are here to help you better do that work beyond the front line.

I want to ask Dr. Horn about some things, more things that may be helpful to get this research out there to the frontline. As you know, research and development is really a system of feedback loops between fundamental research, development, and then deployment. You discussed the research of practice needs and opportunities in your testimony, and also discussed the need for a dedicated pot of funding for applied research needs because agencies

such as NSF and NIH primarily support basic research. Please elaborate on the need for the Fire Prevention and Safety grant program and how it helps in translating research to the standards and tools used in the fire service community, and what more can be done to translate research into practice including through increased partnerships between researchers and firefighting organizations.

Dr. HORN. Thank you very much for that question. It's a very important question because the research dollars are difficult to come by and need to be allocated in the most effective manner possible. The AFG through the Fire Prevention Safety Research and Development grants ties the fire service into the grants from the very beginning of the process. So I mentioned a series of needs analysis and research agenda that exists, and those are all put together by the fire service. Various different aspects of the fire ground are considered and focused on that research agenda but those drive the grants that are being funded by the Fire Prevention Safety program.

So the funding itself is actually driven by the needs of the fire service, and those needs are very often not focused on the applied research, getting some technology, getting some technique, informing policies, informing practices much like Chief Sinclair just mentioned, informing practice based on science, looking at tactics based on scientific principles. These are things that aren't easily funded through National Science Foundation and NIH because it's a tactical priority yet we can now make our firefighters safer, help them to make better decisions by looking at the broader understanding of the tactics that we are using in order to address these problems.

So the fire service is setting the priorities for each of these grants. What's also very unique about this program is that the fire service sits at the table. The firefighters themselves are reviewing each of these grants compared to those priorities and indicating whether or not that is fundable from a firefighter-specific perspective, and it goes to a scientific review process. Few other grant programs have that dual role, dual bosses for the project. So the firefighters themselves will not get to the scientific review unless it does have some strong fire service review.

And then throughout these projects, the research-to-practice avenue has been incredibly—because firefighters become parts of each these projects. Advisory boards on all these projects usually involve fire service from across the country, east to west, north to south, from firefighters to fire chiefs, and they help guide the programs. The Fire Protection Research Foundation does a great job for departments or different agencies that don't have contacts or direct access to national fire service. They help put together an advisory board for those so that the data becomes vetted through that group before it goes out to the fire service themselves. So the fire service is involved in this program from start to finish, and as a result, it directly translates to standards. It directly translates to policies, and increase in the change in some of the technologies have been discussed, and we could talk about many more from Chairwoman Comstock's question are being developed because of the research that has the fire service at the table from the very beginning.

Mr. LIPINSKI. Thank you. Very quickly, Dr. Onieal, how does the Fire Administration make sure you're leveraging the relevant research work of other federal agencies such as DHS, Science and Technology Directorate, NIST engineering lab, and the National Science Foundation?

Dr. ONIEAL. Thank you for the question, Mr. Lipinski. We work very closely. We have staff that works with all of those different agencies. We more or less serve as technical experts. We give the information back to the fire and emergency services through our distribution outlets, and that's typically—they'll all us up all the time and they'll give us an opportunity to participate. So we more or less serve as technical experts on whatever research is being done.

Mr. LIPINSKI. All right. Thank you very much, and I yield back the balance of my time.

Chairwoman COMSTOCK. And I now recognize Mr. Banks.

Mr. BANKS. Thank you, Chairwoman Comstock, for organizing today's hearing, and thanks to each of you for being here as well to testify before Congress about the importance of these grant programs as we debate the reauthorization of many of them, and also thanks for the hard work that you do to serve our local communities.

Despite living in a time where fire prevention technology is more advanced than ever, it is unfortunate to hear that incidents of fire, property losses to fire and deaths caused by fire are increasingly common. This month alone, the Fort Wayne Fire Department in my district has already logged roughly 73 fire-related incidents ranging from passenger vehicle fires, cooking or equipment fires, and various smoke scares across Allen County, the largest county in the 3rd District of Indiana. Many of these incidents happen in the early hours of the morning when detection isn't as responsive. For example, had firefighters not immediately responded to an automated alarm at 2:22 a.m. last week, my district could have lost its historic public library in Auburn, Indiana. The quick cooperation of citizens, fire detection technologies, and law enforcement in the aftermath of this incident confined damage mainly to the first floor rather than the entire structure.

Awareness of fire prevention practices and FIRE grant program funding protects and benefits just about every Hoosier in my district in some way, shape or form. Reauthorizing these programs is crucial to keeping both people and property safe back home in Indiana, so I look forward to learning more about what priorities to consider moving forward from each of you.

My first question is to Chief Browning. I received a letter last week from your colleague in my home state, Indiana Fire Marshal Jim Greeson. He expressed his support for your proposal to increase the funding allocation for fire prevention and safety and the FIRE Act grants program. He cites, for example, that with one of these grants in the State of Indiana, he was able to purchase 1,200 smoke alarms for the deaf and hard of hearing. This seems like a worthwhile effort, but do states share the results of research and programs with other states to assure best practices and the effective use of funding? Is there a process to check if such efforts are

successful in meeting the program goals of reducing fire deaths and injuries?

Chief BROWNING. Yes, sir, and thank you for that question. He's absolutely correct, and I think the role of the state fire marshals are to partner with their local fire service and responders to provide programs just as that. We know early detection, as you stated, is one of the fundamental methods of getting people out of a building and provide free and clear and quick egress while firefighters are responding to suppress that fire. So programs such as early detection, such as education, such as research are exactly what the Fire Prevention and Safety program does, and you'll see many successes across the country that are shared.

You know, I could remember when the 9-volt battery smoke alarm first came out on the market. I was actually pretty young then, even though they've been out a long time. I can remember when they came out on the market, and people didn't want them. They were scared. I remember testifying before the Louisiana legislature in 1991 to make that a requirement at the sale of homes because we knew people were dying before firefighters could get there, and it was the hardest thing in the world to pass. Today if you don't have a smoke alarm in your home, you understand that that's just as important as all of other necessities in your home, and what you're seeing now is the upgrade to the ten-year lithium battery sealed alarms because now when firefighters go in the homes and install these alarms, they know there's ten years of protection, not 9 months or 12 months of a 9-volt battery.

Mr. BANKS. Very good.

As a follow-up to Dr. Horn, you specifically state in your testimony that one of the most encouraging trends in the FP&S R&D programs is the high degree of collaboration among researchers investigating health and safety concerns among firefighters. Can you elaborate on how this collaboration takes place and particularly how knowledge and research is shared on the state and local level?

Dr. HORN. Thank you very much for that question. This is a multidisciplinary, basically a transdisciplinary research program that has developed as a result of the nearly ten years of funding through the Fire Prevention and Safety R&D programs. The studies such as the video that was just displayed earlier have gone from a single topic to really trying to understand the fire service response in holistic perspective, understanding the changes in protection from one aspect such as increasing protection from the carcinogens, the chemicals on the fire ground can have impacts on other aspects such as increased heat stress and cardiovascular strain on the fire ground.

So the studies such as the one you saw there includes individuals who have expertise in all of those areas where we have cardiovascular research experts from New York, from UIC as well as from Illinois, industrial hygienists who focus on chemical exposures from NIOSH as well as Underwriter Labs, who has studied the fire ground environment in the most complete manner possible. So this transdisciplinary group is necessary to be able to look at this from a higher level to be able to understand the tradeoffs in protection from one aspect to the other and how we can minimize or optimize that tradeoff there, and that has been an outgrowth, a direct out-

growth of this R&D program which has brought firefighter-related research together in this one area.

Mr. BANKS. Thank you.

Yield back.

Mr. ABRAHAM. [Presiding] Thank you. Ms. Esty, five minutes.

Ms. ESTY. Thank you very much. I want to thank our Chairman and Ranking Member for this very important hearing we're having today, and I really want to thank the six of you for your service and what you represent for firefighters across the country. Chief Sinclair, as you noted, I've worked very closely with the firefighters in Connecticut where we have 80 percent of our departments are staffed by volunteers. Eighty percent of all our firefighters are volunteers. I have a lot of small, rural communities, and they absolutely depend on these programs. They're completely vital. A town of 4,000 or 3,000 people can't possibly afford to provide the protection for, as you say, Captain Niemiec, and several of you have mentioned, somebody got up in the middle of the night and puts their life on the line to save their neighbor, and we can't thank them enough. So first, thank you for all you do.

I wanted to highlight again what Chief Sinclair noted about the utter importance of supporting through these grants volunteer recruitment and retainment. In Connecticut, we figure that saved us \$18 million. One of my best staffers left me because his lifelong dream was to become a firefighter. But in Connecticut, he has to pay \$1,000 for the training to even take the test. That's gone up substantially. So to even have the opportunity to take the test, young men and young women are having to pony up themselves, and that's just wrong, and these grants are vital to keeping our communities safe.

I wanted to turn a moment, Dr. Horn, to something that you talked about, this being the Science Committee, and about the research, but I think a lot of times we think about fancy new equipment and certainly the materials technology and some of that research is actually being done, and my district in Avon, Connecticut, provides some of the best reflective material that's used to keep firefighters safe around the country. But the importance of practices and techniques of training, again, because so many of our firefighters are volunteers, can you talk a little bit more about the importance of that training that otherwise isn't getting done? And then what, if anything, we can do to disseminate that information because, again, the best research in the world if it stays in the can or is in a manual that nobody looks at is not going to save the lives that we need to save so that they can go out and continue to save those of others. Again, thanks very much.

Dr. HORN. Yeah, absolutely. It's a great question, and an area that a specific focus of this research and development program is getting information out to the fire service. But let me take a couple steps back and actually discuss something that was brought up by Chief Sinclair, and that is the practices. An avenue that we have really started to look at is understanding tactics, how the actions that we take on the fire ground can change the risk profile for the occupants of the structure as well as the victim, and some of these things are very tightly held tactics that have gone through many years, have worked successfully for those departments. So we need

to understand the impact of changing a tactic but the impact of changing a tactic in my department will be very different than in Fairfax County. So we need to provide information on what can be done and how that broadly translates across the country because it has to be implemented locally. A department that has two members run it is very different than a department that has six members and five more apparatus coming behind. So we're trying to provide information that can be broadly translated but also is widely available as well as generalizable to the different realities and the local jurisdictions.

One of the great ways of being able to do that is through the internet. A lot of online programming is freely available as a result of this project, the project you saw on the video. We are right now working on a toolkit that should be available by the end of the year free for any department to get online to have access to that information, what does it mean, the tactical considerations, the policy considerations, but then access all the way down to the actual scientific academic peer-reviewed data if they're interested in that. Most fire departments probably care about the how. So those tactics can have an impact.

We often rely on our personal protective equipment and some tools to provide protection for us but in many ways we look at it from a hierarchy control. That should be one of the last levels that we're focusing on. If we can avoid that, that's what we're looking at. There are, though—to answer Chairwoman Comstock's question, there are technologies being funded by Fire Prevention and Safety to look at things such as particulate measurements on the fire ground because the tools that we have right now don't do a good enough job to tell us when it is safe to take off our SCBA, for instance. So it's coming, it's broad-based, and it's focused because of this type of program.

Ms. ESTY. Again, I see my time is running out, but I want to say again how important this is because, again, especially our rural communities but frankly our cash-strapped cities like mine in Waterbury—I reached out to my fire departments over the last couple of days, and every single of them said they absolutely depend on these grants. They could not possibly staff their departments or provide the protective equipment that they need without this, especially when we see a lot of constrained state and local budgets. So having those resources at the federal level available to Americans across the country is incredibly important, and again, I want to thank the six of you for your service, please thank your departments, and I appreciate your helping in making—helping us make that case to our colleagues so we get this reauthorized at a higher appropriate level back to the levels it should have been at to help keep Americans safe. Thanks, all, very much.

Mr. ABRAHAM. Dr. Marshall, five minutes.

Mr. MARSHALL. Thank you, Chairman.

Mr. Hirsch, a couple questions. What are the most critical needs that we face in northwest Kansas for your fire departments? What are your most critical needs?

Mr. HIRSCH. Congressman, clearly the awareness, the safety culture that has changed in the fire service from 1963 when my father started in the volunteer fire service to 1987 when I started, 2017

has changed dramatically, and a lot of that has come because of the research projects that have been done. But I think we can never forget the fact that there are basic needs that are still not being met in rural fire departments out in our state. There are still departments that are borrowing gear from other departments. A department will replace their gear and transfer it to another department, gear that probably should be out of service but it's better than what they had. Departments that have 50- or 60-year-old trucks, departments that have 40-year-old hose, departments that don't have SCBAs to be able to do an aggressive interior fire attack to save lives. There are a lot of basic needs out there that still have not been met. There are departments in Kansas that still have dirt floors in their fire station. It's just a fact of life, and they are small departments. They don't have a very large tax base. These programs are just invaluable, and they're invaluable to saving volunteer firefighters' lives.

Mr. MARSHALL. How would the USFA or the Fire Safety grant programs help with those types of needs?

Mr. HIRSCH. Well, clearly, at least in the northwest part of the state where I live, there are countless departments that have gotten grants to pay for that type of equipment, but I will tell you that over the past 10 to 15 years, the amount of money that's been appropriated into these programs has declined markedly, and so we're—a lot of departments in Kansas were getting grants 15 years ago. There aren't very many today because the competition is so stiff and the funding is so small.

Mr. MARSHALL. Let's kind of follow up on the grant process. I assume that you're the person that writes these grants?

Mr. HIRSCH. In my department, yes, and for a lot of my neighbors too.

Mr. MARSHALL. How is that process going, or what challenges do you have in the grant process writing?

Mr. HIRSCH. Writing the grants are not difficult. I've also been on the other side and reviewed grants with the fire administration. It's made up of a peer process where firefighters actually get a chance to review grant applications from other departments. That also helps you write your own grants when it comes around too. But I'll tell you that a lot of these volunteer fire chiefs, they've got lives, they have jobs, and that becomes very difficult for them to commit the amount of time. The grant process, the application process, is not that difficult but it does take some time. It takes a commitment of time. They're already committing a lot of time and, frankly, committing a lot of their money to protecting their communities, and it's difficult. It's difficult, and especially I think with the decrease in the funding over time, after you've applied for a grant a time or two or three and you're not awarded anything, then you get discouraged and you give up.

Mr. MARSHALL. I think my next question's for Dr. Onieal. What is the USFA doing in specialized training specifically, for rural voluntary fire departments?

Dr. ONIEAL. The specific training that we provide to rural departments, believe it or not, occurs at every state. So if we talk about your state, Kansas, the state fire training system there and the state director delivers National Fire Academy training throughout

the state. I was out there last year. I spoke at a statewide conference, and they're just simply doing a terrific job. The advantage to those firefighters is that when they do that, they're registered in the National Fire Academy database, which means that their credential is carried wherever they go. If they move to a different department or even a different state, that credential carries with them.

All the National Fire Academy courses are reviewed by the American Council on Education for college credit recommendation. They can transfer some of that credit into their college degree programs, and all of them also—well, the online courses that they're available—are reviewed by the International Association for Continuing Education and Training and they receive CEUs. So through the state training system and classroom training and through the National Fire Academy's online—

Mr. MARSHALL. What's unique, though, for the rural training? What is more specifically the process?

Dr. ONIEAL. Okay. I'm going to ask to get back to you, and I'll give you a full list of the courses that we have available to you for the rural fire service.

Mr. MARSHALL. Mr. Hirsch, maybe you can answer what's more specific towards rural training?

Mr. HIRSCH. Frankly, I don't know that there's a whole lot of difference between rural and urban firefighting. We don't have—we have high rises; they're grain elevators. But we're still fighting house fires. We're still trying to extricate people from wrecks. We're still handling EMS calls and hazmat calls. The training is similar across the lines whether you're rural, suburban or metro.

Mr. MARSHALL. Okay. I yield back. Thank you.

Mr. ABRAHAM. Thank you, Dr. Marshall.

Ms. Bonamici, five minutes.

Ms. BONAMICI. Thank you very much, Mr. Chairman and Ranking Member, for holding this important hearing, and thank you to each and every one of you for being here today and for the important work you do.

Like so many of my colleagues, I have been and continue to be a strong supporter of the FIRE and SAFER grant programs, and I know that numerous fire departments in the district I represent in Oregon, particularly the volunteer departments, rely on those funds to fulfill critical needs.

The district I represent, Chief Sinclair might be familiar with it, is bordered by miles and miles and miles of the mighty Columbia River, and on Monday, just this past Monday, I had the opportunity to meet with the Maritime Fire and Safety Association, which is a wonderful collaborative organization with our neighbors to the north on the other side of the river. It was formed after the tragic death of a Coast Guard man and the critical injury of a firefighter after an inability to coordinate response to vessel fire on the Columbia River, and it is a fabulous collaboration, and it includes more than a dozen municipal fire agencies along the Willamette and Columbia Rivers, and many of those agencies have benefited from FIRE and SAFER grants. So it is a unique organization and it is a serious issue that they need to be prepared for. There's a lot of vessel traffic in the river.

So I wanted to quote Bob Livingston. He's the President of the Oregon State Firefighters Council, and he described these grants, the FIRE and SAFER grants, as some of the best federal programs and they yield a great deal of success, and this is what he says. He said "The reason for this is twofold. First, whether it is vital equipment that may save a life in the event of a cardiac arrest or having adequate staffing to handle the wide range of emergency response, these dollars are getting to the local level. Second, these dollars are allocated to local communities based on scientific-based information that allows Congressional members to come together in a bipartisan fashion to fund these important programs that make communities across this nation safer." So I know he appreciates the grants, and I have too.

Mr. Hirsh, I wanted to ask you, the SAFER program has helped career departments hire new and additional personnel to meet staffing safety standards and it requires a percentage of funding to go to volunteer departments for recruitment and retention of volunteer firefighters. So in your written testimony, you describe a recruitment program in Stayton, Oregon, which is not quite in my district, but they've had a lot of success in bringing on career and volunteer firefighters. So could you elaborate on the program and the extent to which the best practices that are developed are scalable and repeatable for other volunteer fire departments?

Mr. HIRSCH. Yes. I think they are scalable and repeatable. In the particular one that you're talking about in Stayton, they not only recruited people for their own fire department, but as a result of the work that they did there, they recruited firefighters for neighboring fire departments as well. I believe there were some 80 firefighters in their district and I think around 30 in neighboring districts.

The National Volunteer Fire Council currently has a program as a result of a grant through this program called Make Me a Firefighter. If you want to look at it, makemeafirefighter.org is the website. What that does it, it sets up a portal for local fire departments to create their own resource there so that if someone wants to volunteer for their department, there's a particular portal for that department that a person can sign up and see whether or not they need volunteers in that particular area, and—

Ms. BONAMICI. Wonderful. Thank you.

And I want to get another question in. I know one of the proposals that's under consideration is to allow that the SAFER grant funds be used to augment the pay of part-time or paid on-call firefighters to make them full-time personnel, and I wonder if any of our witnesses could explain, do you support this? Do you share concerns that there might be about that change? Anybody want to weigh in on that proposal? I see Chief Sinclair's interested.

Chief SINCLAIR. Thank you very much for the question. Many fire departments, mine as an example, are combination fire departments. We have reserves resident. The reserves are paid on-call firefighters. We have career folks and we have community volunteers. Many of our hires come from either our resident pool or our reserve firefighters, which are paid on-call firefighters. They are folks that are committed to the community, that are well known to the community. They're well known to us because we know their

work ethic. And so having that pool of people that you can hire from is very appropriate. The conundrum in the current language is that because they're already a part-time employee, you can't hire them, even though they're probably one of your most trusted resources and would make a very good transition to a career position, and so that's the reason why we're asking for the change is simply to be able to take people that are committed inside of that community, have already proven themselves to the organization, and the ability to transition. Many people that are in the career force came out of the volunteer or part-time ranks.

Ms. BONAMICI. Thank you. That's valuable input. And I see that my time is expired.

Thank you, Mr. Chairman.

Mr. ABRAHAM. Thank you for being here, gentlemen. It's my time for some questioning. We appreciate your time away from your constituents. You are not only part of local security, fire security, but with global terror, now you're part of national security, and we understand the risks that you incur every time you enter a building of unknown substance.

Chief Browning, thanks for being the Fire Marshal for my great State of Louisiana. You do an exemplary job, so kudos. You deserve it.

And my first question is to you. The State Fire Marshals are responsible and required to collect the fire data in their state for the U.S. Fire Administration. How does this affect my State of Louisiana's resources, and do you consider that an unfunded mandate?

Chief BROWNING. Yes, sir. First off, I'm going to tell you data collection is the most important thing. That's how we learn the testimony we give you today not only in the prevention area, the need for equipment and the need to hire additional personnel. It's that data that drives that, and that data starts at the local fire department. It comes to the State Fire Marshals. We collect that data, we scrub that data, and we report that to the U.S. Fire Administration. We receive no funds from the U.S. Fire Administration for doing that. It's a burden that my state budget and I suspect other State Fire Marshals' state budgets have to incur.

Mr. ABRAHAM. Some of the fire service groups feel that any changes to the FIRE grant authorization will have an effect on eliminating the sunset provision to take effect on January 2018. What is the State Fire Marshals' position on this?

Chief BROWNING. Well, first off, we need to eliminate the sunset. It's not my opinion that proper changes and right changes, smart changes, certainly changes that bring about prevention, changes that bring about better expenditure of that equipment grant, and better changes that allow us to hire and retain firefighters shouldn't affect that sunset.

Mr. ABRAHAM. And you've alluded to this question, but I'm going to ask it a little bit of a different way. You said in your testimony—I read it—that the most cost-effective way to protect the greatest number of individuals and property is to allocate additional funding for fire prevention and safety programs. How would additional funding for State Fire Marshal fire prevention and safety programs benefit fire departments in Louisiana, other states who do not pro-

vide fire prevention or have the resources to adequately enact fire prevention programs?

Chief BROWNING. Well, I believe that allocating money to state programs puts a footprint in every community. So in our State of Louisiana, anything that the State Fire Marshal does, our state fire training center does, when they do that, it affects every fire department in our state, even the most rural that can't afford those resources, and even the largest and most progressive departments who we supplement the things that they do. So I think whether it's a smoke alarm campaign, whether it's a firefighter safety campaign, whether it's a training campaign, the state does do a good job of touching people who otherwise may be left out.

Mr. ABRAHAM. Mr. LaHood, five minutes for you, sir.

Mr. LAHOOD. Thank you, Mr. Chairman, and let me thank the witnesses for being here today, and thanks for your service to the communities that you serve throughout the country. I appreciate it very much, and for your valuable testimony here today.

I want to add my support for the AFG grant program and the SAFER grant program. I've seen it throughout my district. I have a fairly rural district in central and west central Illinois, 19 counties that cover from Quincy, Illinois, to Jacksonville, Illinois, to Peoria and all places in between, and whether it's safety equipment, whether it's personnel, it has been a valuable program and has helped to protect the safety of the constituents there and also to help the many departments that are in my district. So we need to continue to support those programs.

Dr. Horn, thank you for being here today, and the work that gets done at the Illinois Fire Service Institute is very important, and I've seen it. In my State of Illinois, I served in the state legislature there and worked an awful lot with our local fire departments there, and the work that goes on there, you know, cross-cutting research, cardiovascular research, heat stress research, fire ground chemical exposure research, and the benefits that come about from that are applicable whether it's rural or urban throughout the State of Illinois, and I think it's really kind of a poster child for other areas across the country that can be done. What I guess I'm wondering, Dr. Horn, and I wanted you to comment on, when we look at the federal level and whether there's any applicability of what we can do on the federal level based on what's done in Illinois, I was wondering if you could comment on that, on your thoughts.

Dr. HORN. First of all, thanks for the kind words and the supportive comments. And so just a quick clarification. Are you asking what could be done to replicate some of the work that is being done at Illinois Fire Service Institute?

Well, we're very fortunate at IFSI in that we have the state training academy, which IFSI is collocated with the University of Illinois, which is one of the leading Research Institutions in the country, and we have some very engaged individuals, both on the research side as well as on the fire service side to try to come together and locate problems. There certainly are opportunities to replicate that at other locations. For instance, Maryland's state academy is also at their state university.

The important way that we can bring this forward is to make sure that we have the leadership that is willing to engage both sides and to understand the necessity that the fire service has for having this research translate into practice. It can be challenging for some academic research institutions depending on how they are receiving tenure, promotion, those sorts of things to potentially be engaged in some of this hands-on, more applied type of research as opposed to some of the more traditional funded research in those programs. So because we have the collocation of both of those, it allows us to do certain things like that where we can touch both the academic side and the hands-on side.

I believe this is when we talk about the centers of excellence. Centers of excellence are actually now—we have people from across the country, the projects that we wish NIOSH and Underwriter Labs and Skidmore College in New York are a center that actually involved in multiple different agencies that is being replicated. Phoenix—University of Arizona is developing a project that includes us as well as NIOSH as well as Miami and other places. So the research is becoming, because of this R&D program, very transdisciplinary and across the country.

So I believe it's starting to be replicated in various different areas. But the ability to translate it to the fire service, if centers for excellence were to be funded, that's one of the critical avenues because that is a challenging aspect of all of this, someone who can speak engineering or medical science and speak firefighter at the same time because often those two don't overlap with each other, and that's a critical avenue where I think we have some unique ability to fill in that gap.

Mr. LAHOOD. Great. Thank you, Dr. Horn. Those are all my questions.

Chairwoman COMSTOCK. Thank you. And my apologies to have to briefly leave. I have another hearing going on right now, a committee I serve on where the FBI building was an issue. So we've been wanting to get that in Virginia. I know my Maryland colleagues had other ideas. I think we all agreed we didn't want it in D.C.

But thank you all for your time and your expertise. We really appreciate all of your testimony and the members for their questions. I think as you can see from today's hearing, we are all united in our interest in continuing the good work that you have on here and that you've done here, and we appreciate all you are doing in our respective communities and for the country.

So the record will remain open for two weeks for additional written comments and written questions from members, and I'll also reiterate, any of the different technology items and things that you would like us to—any visuals that we can highlight for our colleagues will be very helpful as we go forward with our September 30th deadline that we want to make sure we continue the good work you are doing.

So the hearing is now adjourned.

[Whereupon, at 11:41 a.m., the Subcommittee was adjourned.]

Appendix I

ANSWERS TO POST-HEARING QUESTIONS

ANSWERS TO POST-HEARING QUESTIONS

*Responses by Dr. Denis Onieal***HOUSE COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY**

“U.S. Fire Administration and Fire Grand Programs Reauthorization: Examining Effectiveness and Priorities”

Dr. Denis Onieal, Acting Administrator, United States Fire Administration

Questions submitted by Ranking Member Daniel Lipinski, House Committee on Science, Space, and Technology

1. Chief Sinclair, President and Chair of the Board of the International Association of Fire Chiefs (IAFC), stated in his written testimony that IAFC believes that with additional funding, the USFA and the National Fire Academy could develop new courses and play a greater role in several areas. These include training departments on information sharing, incorporating threat information into budgeting and planning, and disseminating lessons learned from veteran’s behavioral health and wellness as they may be applicable to the fire service. To what extent can the National Fire Academy expand its curriculum to cover these issues? What are the challenges?

Answer: The National Fire Academy has operated on a flat budget of approximately \$10.5 Million for the last 15 years. During that time, we have created an on-line learning environment which reaches more than 50,000 students per year. We have implemented incremental updates and improvements as staff resources permit. While we strive to update and improve our programs, wholesale developments and re-writes are limited by our budget. Administrator Long will continue to engage with Chief Sinclair and he has met with both the IAFC and IAFF leadership to discuss their concerns. Both organizations are being included in engagement efforts as FEMA updates its 2018-2022 Strategic Plan.

2. The *4th Needs Assessment of the U.S. Fire Administration*, released by the National Fire Protection Association in November of last year, found that almost 50% of all fire departments had not formally trained all of their personnel involved in structural firefighting, an increase from the 2010 assessment. Please describe how the Fire Administration plans to increase dissemination of training information?

Answer: Structural firefighting training is delivered by the 50 State Fire Service Training Agencies and their Metropolitan Fire Department counterparts. Training requirements vary from state to state and from locality to locality. The National Fire Academy (NFA) delivers nine two-day classes annually, in every state. We also deliver three six-day classes to each FEMA region annually. In 2016, the NFA delivered 234 two-day, off-campus courses for 4,614 students. In addition, the NFA makes its curriculum packages (Student Manuals, Instructor Guides, PowerPoint slides and other resources) available to State Fire Service Training Agency partners to download and deliver with their own resources, including the use of State Fire Training grant funds. The curriculum includes fire investigation, management and leadership, community risk reduction, and the use of

national fire and building codes that provide and promote a safer built environment. Currently, 46 course packages are available for download. In 2016, NFA State Fire Service Training Partners delivered 2293 courses to 33,977 students, 24 percent of whom were volunteers.

The NFA continues to make strides with its on-line distance learning program. Last year, we reached more than 52,000 students, and offered 37 different courses. Reflected in this is our long-standing partnership with the Department of Interior/Bureau of Land Management. Through our distance learning program, we host eight wildland courses that provide wildland firefighters with the competencies needed to safely perform their jobs.

HOUSE COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

“U.S. Fire Administration and Fire Grand Programs Reauthorization: Examining Effectiveness and Priorities”

Dr. Denis Onieal, Acting Administrator, United States Fire Administration

Questions submitted by Rep. Roger Marshall, House Committee on Science, Space, and Technology

1. What is the USFA doing in specialized training, specifically for rural voluntary fire departments? What is unique for the rural training? More specifically, what is unique about the process?

Answer: Training time is a challenge for most volunteer fire departments. The National Fire Academy (NFA), in cooperation with State Fire Service Training Agency partners, delivers nine two-day classes to each State. These classes are frequently delivered over weekends so that volunteers have the ability to attend while typically not interfering with their regular work schedules. In 2016, the NFA delivered 234 two-day, off-campus courses for 4614 students, 80 percent of whom were volunteers.

In addition, the NFA makes its curriculum packages (Student Manuals, Instructor Guides, PowerPoint slides and other resources) available to State Fire Service Training Agency partners to download and deliver with their own resources, including the use of State Fire Training grant funds. Currently, 46 course packages are available for download. In 2016, NFA State Fire Service Training Partners delivered 2293 courses to 33,977 students; 24 percent were volunteers.

Not only does training require commitment of time for classroom and drill activities, but in many rural areas, travel to a training facility may be extensive (requiring an hour or more each way). The NFA has developed on-line courses which can be completed at the learner's convenience. The NFA Online self-study program provides a variety of on-line courses to assist rural fire departments; the curricula ranges from incident management and fire prevention to hazardous materials and responder health and safety. Last year, we reached over 52,000 students, offering 37 different online courses. The NFA is constantly developing and obtaining approval for expanding on-line delivery and we expect the on-line delivery class availability to continue to increase.

Appendix II

ADDITIONAL MATERIAL FOR THE RECORD

LETTERS SUBMITTED BY SUBCOMMITTEE
CHAIRWOMAN BARBARA COMSTOCK



Congressional Fire Services Institute

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July 12, 2017

The Honorable Barbara Comstock
Chair, Subcommittee on Research and
Technology
House Committee on Science, Space and
Technology
229 Cannon House Office Building
Washington, DC 20515

The Honorable Daniel Lipinski
Ranking Member, Subcommittee on Research and
Technology
House Committee on Science, Space and
Technology
2346 Rayburn House Office Building
Washington, DC 20515

Dear Chairwoman Comstock and Ranking Member Lipinski:

On behalf of the Board of Directors of the Congressional Fire Services Institute (CFSI) I would like to thank you for conducting today's hearing, "U.S. Fire Administration and Fire Grant Programs Reauthorization: Examining Effectiveness and Priorities," and for the opportunity to submit comments for the record.

Established by the Federal Fire Prevention and Control Act of 1974 (FFPCA), the United States Fire Administration is the lead federal agency for our nation's fire and emergency services. Its core mission is divided into four program areas: data collection, public education, technology development, and training. The reauthorization process provides an opportunity for Congress to conduct a review of these four program areas to determine if USFA is performing its mission effectively. I hope the subcommittee members will ask the panelists for their thoughts as part of the review process during your hearing.

It is important for your subcommittee to understand the funding challenges facing the United States Fire Administration. In Fiscal Year 2004, it received \$51 million in appropriated funding, the high-water mark for the agency. Since then, USFA has been asked to do more with less. From Fiscal Year 2012 to Fiscal Year 2017, Congress appropriated no more than \$44.1 million, annually. The question needs to be asked how the lead federal agency for the fire service can perform its mission in the areas of data collection, public education, technology development, and training with diminishing federal support, while meeting its many obligations in other areas – including rural and wildland-urban interface assistance, codes, emergency medical services, hazardous materials, fire sprinklers, and supporting the annual National Fallen Firefighters Memorial Ceremony. We hope that the reauthorization process will raise awareness on Capitol Hill of the growing challenges facing USFA and the impact of budget constraints on their mission.

Congress created the Assistance to Firefighters (AFG) and Staffing for Adequate Fire and Emergency Response (SAFER) grant programs in 2000 and 2003, respectively, to address the baseline needs of our nation's fire and emergency services. These two highly successful programs help ensure that our nation's more than 30,000 fire departments have the necessary training, equipment, and staffing to respond to over 30 million emergency calls annually, and work to reduce community risk. Every community across the country relies on our firefighters to respond to a variety of emergency situations, including structure fires, emergency medical services, hazardous materials response, technical rescue, and wildland/urban interface fires. Both the AFG and SAFER grant programs improve the response capabilities in each of these emergency response areas, and provide funding for fire prevention and safety programs targeted toward high-risk populations. CFSI urges Congress to reauthorize these

July 12, 2017

Page 2

programs without delay.

When Congress reauthorized the programs in 2013, it stated the two grant programs “have proven equally valuable in protecting the health and safety of the public and firefighting personnel throughout the United States against fire and fire-related hazards... (P.L. 112-239).” To this day, CFSI agrees with this assessment, which is why we believe it is important that any reauthorizing legislation makes only limited changes to the program. Specifically, CFSI recommends that Congress make the following adjustments to the authorizing statute:

1. **Elimination of the sunset provision:** The current statute authorizing the AFG and SAFER grant programs contains a sunset provision that will permanently eliminate both programs on January 2, 2018. We recommend removing this provision in order to keep the programs from expiring.
2. **Individual waiver authorities:** Currently, the SAFER grant program contains a provision giving the FEMA Administrator the discretion to waive (for jurisdictions with demonstrated local hardship) the prohibition on using SAFER funds to supplant state and local funds, the local match, and the requirement that applicants have sustained their fire-related programs and emergency response budgets by at least 80% in the three preceding years. Unfortunately, the statute only waives the reference to the local match requirement in one part of the statute (subsection (a)(1)(e)) and not the other (subsection (c)(4)). This discrepancy has created a situation where FEMA is unable to exercise the waiver authority as Congress intended. We recommend Congress implement a technical correction to the waiver authority that references both subsection (a)(1)(e) and subsection (c)(4).
3. **Maintenance of expenditures:** The current SAFER statute does not allow FEMA to award a SAFER grant to a jurisdiction that reduced its annual budget for fire-related programs and emergency response “below 80 percent of the average funding level in the 3 years prior to November 24, 2003.” The November 24, 2003 date is an anachronism. We recommend updating the statute by replacing “November 24, 2003” with “the application date”.
4. **21st Century Cures Act:** The 21st Century Cures Act (P.L. 114-255) contains a provision that amended the SAFER grant program “to provide specialized training to paramedics, emergency medical service workers, and other first responders to recognize individuals who have mental illness and how to properly intervene with individuals with mental illness, including strategies for verbal de-escalation of crises.” However, the SAFER program provides grants specifically for staffing, not training. We recommend amending the law so this provision is listed under 15 USC 2229(c)(3), the section outlining the “Use of Grant Funds” under the AFG grant program. This section details the allowable uses for grant funds, including eligible training activities.
5. **Technical correction to the SAFER application requirements:** 15 U.S.C. 2229a(b) details specific requirements that applicants for a SAFER grant must meet. Unfortunately, (b)(3) (B) references subsection (a)(1)(B) (ii) which doesn’t exist. We recommend amending this section by striking “(a)(1)(B)(ii).”

Both the AFG and SAFER grant programs improve the capabilities of our nation’s firefighters, and provide funding for crucial fire prevention and safety programs targeted toward high-risk populations. It is imperative that Congress reauthorizes these programs without delay.

CFSI remains grateful for your continued leadership in ensuring that America’s fire and emergency

July 12, 2017

Page 3

services are prepared to protect the public from all hazards – both natural and manmade. We look forward to working with you as Congress moves forward with reauthorizing these important programs. Thank you for your continued commitment to the nation's fire service and best wishes on your continued success and safety

Sincerely,

A handwritten signature in black ink, appearing to read "William F. Jenaway". The signature is fluid and cursive, with the first name "William" and last name "Jenaway" clearly distinguishable.

William F. Jenaway, PhD
President, Congressional Fire Services Institute



July 12, 2017

The Honorable Barbara Comstock
Chair of the Subcommittee on Research and Technology
House Committee on Science, Space and Technology
229 Cannon House Office Building
Washington, DC 20515

The Honorable Daniel Lipinski
Ranking Member, Subcommittee on Research and Technology
House Committee on Science, Space and Technology
2346 Rayburn House Office Building
Washington, DC 20515

Dear Chairwoman Comstock and Ranking Member Lipinski:

I would like to thank the House Science Committee Research and Technology Subcommittee chair, Representative Barbara Comstock and Ranking Member, Representative Daniel Lipinski, for calling this very important hearing on the United States Fire Administration and the Assistance to Firefighters (FIRE) and Staffing for Adequate Fire and Emergency Response Firefighters (SAFER) grant programs. I am honored to submit remarks on the achievements and effectiveness and of this program.

My name is Christian Dubay and I am presenting this information in my capacity as Vice President and Chief Engineer at the National Fire Protection Association, NFPA. Established in 1896, NFPA is a global, nonprofit organization devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards. In addition, the association delivers information and knowledge through more than 300 consensus codes and standards, research, training, education, outreach and advocacy; and by partnering with others who share an interest in furthering the NFPA mission. The fire service relies on many NFPA standards that establish a minimum level of safety.

Today's fire departments are an integral part of the public safety framework protecting our nation, providing a local, immediate response to a variety of events. Over 29,000 fire departments are being called upon to protect their communities from much more than fire, responding to calls for assistance involving emergency medical services (EMS), hazardous materials (Hazmat), active shooters, enhanced technical rescue, natural disasters, wildland firefighting, and other emerging challenges. Even within the firefighting realm, firefighting tactics and training need to respond to and keep up with changes in technology and social factors impacting modern fire departments. Open floor plans, lightweight construction, the growing prevalence of solar panels, increased use of lithium ion batteries and battery storage systems, expanding areas of wildland-urban interface firefighting and electric vehicles all impact the way the fire service may need to respond to a fire incident. As fire departments work hard and seek to utilize new technologies to meet the many and expanding needs of their communities, we need to ensure that they have the resources, personnel and training to do their jobs safely and effectively.

Starting in 2001, NFPA began compiling the data collected through surveys of the nation's fire departments to assess the needs of the US fire service. Since then, we have repeated these surveys every 5 years. The successive surveys allow NFPA to identify trends in fire service needs over time. In November of 2016, we released our most recent report - our most comprehensive survey yet.

What have we learned from these surveys? While there has been progress in addressing some fire department needs, more remains to be done. This report shows fire service needs are extensive for departments of all sizes and in every area, including staffing, training, facilities, apparatus, personal protective equipment (PPE); and health and wellness. Overall, the study demonstrates that the smaller the community protected, the greater the need.

The vast majority of fire departments in the United States are mostly or all volunteer (8 out of 10). Of the over 1.1 million firefighters in the United States, 30% are career and 70% are volunteer (including paid on call) firefighters. Career firefighters serve and protect over two thirds of the United States population primarily located around urban areas, whereas volunteer firefighters serve and protect communities that are primarily in rural areas (less than 500 persons per square mile¹) spread throughout the nation².

Annually the U.S. Fire Service responds to more than 31.5 million calls. 67% of which are medical aid responses, 4% fire incidents, 4% mutual aid, 3% hazardous materials and other hazardous incidents, 8% false alarms and 14% all other incidents³.

¹ NFPA 1142, Standard on Water Supplies for Suburban and Rural Fire Fighting, 2017 ed. 1142-6

² National Fire Protection Association (NFPA). "United States Fire Department Profile Report - 2015". April 2017.

³ National Fire Protection Association (NFPA). "Fire Loss in the United States Report". 2011 to 2015 median results.

Having adequate numbers of trained and equipped firefighters on scene in the early minutes of an event is a major factor in a positive outcome. NFPA publishes standards that provide specified staffing levels, based on research and fire dynamics. NFPA 1710⁴ requires at least four firefighters per fire engine or pumper. In the 2015 survey, and as compared to the results of the survey in 2010, career firefighter departments reported a 9-25% increase within different size communities in the number of departments assigning fewer than four firefighters per engine or pumper. For a fire department staffed by volunteer or on call firefighters, NFPA 1720⁵ calls for at least four firefighters on-site before an interior attack on a structure is begun. The survey results indicate that roughly four out of five volunteer fire departments respond with four or more firefighters.

Some of the other pertinent facts derived from data collected in the report^{6,7}:

- Forty-nine percent of all fire departments in 2015 have not formally trained all of their personnel involved in structural firefighting, up from 46 percent in 2010.
- Thirty-four percent of all fire departments in 2015 have not formally trained all of their personnel involved in emergency medical services (EMS), largely unchanged from 33 percent in 2010.
- The greatest need for training in large fire departments protecting populations greater than 500,000 is in fire prevention and code enforcement.
- The greatest need for training in smaller fire departments protecting populations less than 2,500 includes wildland firefighting.
- Almost seventy percent of departments reported they were using Self Contained Breathing Apparatus (SCBA) that is at least 10 years old, up from 55 percent in 2010^{8,9}.

⁴ NFPA 1710, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments. 2016 ed. Quincy, MA: National Fire Protection Association, 2017. 1710-10.

⁵ NFPA 1720, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Fire Departments. 2014 ed. Quincy, MA: National Fire Protection Association, 2014. 1720-10 – 1720-11.

⁶ National Fire Protection Association (NFPA). "Fourth Needs Assessment of the U.S. Fire Service: Conducted in 2015 and Including Comparisons to 2001, 2005 and 2010 Needs Assessment Surveys". November 2016.

⁷ Some fire departments that responded in the 4th Needs Assessment of the US Fire Service survey (2015) had not responded in previous surveys, while some that did not respond had responded in earlier surveys. Consequently, this report estimates overall fire department needs, but not the needs of an identical group over time. Due to the statistical variability in the fire departments sampled in each survey, when comparing results from survey to survey it is important not to read too much into 1-3 percentage point changes.

⁸ NFPA 1852 (Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA). 2013 ed. 1852-14.

⁹ There is no explicit replacement period language in this standard, however there is an inspection requirement for use where the interval should not exclude 1 week (see). The 10 year-rule has historically been used in the Needs Assessment survey because it was understood that if the SCBA was older than 10-years old there are enough

- More than two-third (72 percent) of departments reported that some of their personal protective clothing (PPC) was at least 10 years old^{10,11}.
- Half of departments do not have all emergency responders on a shift with a portable radio.
- 43% of fire stations are over 40 years old, up from 32 percent in 2001.
- Three out of five (59 percent) fire stations are not equipped for exhaust emission control, down from 78 percent in 2001. Although, a marked improvement, this one source of carcinogenic contaminants that is putting our firefighters at undue risk for cancer¹².
- There is an increasing need for additional stations in both the largest and smallest communities. Using the Insurance Services Office Fire Suppression Rating Schedule, it was determined that 76% of departments have too few stations.
- Forty-three percent of all fire department engines and pumpers are at least 15 years old, down from 51 percent in 2001.
- One out of five (20%) fire departments have a behavioral health program.
- One quarter (27%) of fire departments have a basic firefighter fitness and health program.
- 19,764 out of 26,322 FD's are without a Hazard Mitigation Planning Risk Assessment (This represents 173 Million people)
- Twenty percent (one out of five) departments did not have anyone conducting fire code inspections, down from 24% in 2010.
- The top three greatest public safety education needs according to population protected are (1) a Wildfire Safety Program, (2) Home Fire Sprinkler Education and (3) Car Seat Installation program. More than two thirds of the US population are not covered by any of these programs.

It is undeniable the America's firefighters consistently enter harm's way to protect citizens, communities and property from fire and many other risks. Research has proven that following

changes in the design and performance requirements to justify personal protective equipment replacement. The technical committee is discussing a replacement period of 15 years for the SCBA bottles, however the replacement period of rest of the SCBA components, especially the face piece and hose has not been addressed.

¹⁰NFPA 1851, Standard on Selection, care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2014 Edition.

¹¹Annex A.10.1.2 "After discussion of the concept of mandatory retirement for protective elements, the consensus of the technical committee, led by the fire service segment, is that the life of a turnout suit is generally less than 10 years. Regardless of when the element was originally produced, it is imperative that the protective elements be routinely inspected to ensure that they are clean, well maintained, and still safe. Just knowing the age of the elements cannot do that. In the 2014 revision cycle the technical committee, led by the fire service, again reaffirmed this position."

¹² According to the International Association of Firefighters 61% or 1,053 line of duty firefighter deaths were caused by occupational cancer from 2002 to 2016. The need to mitigate this risk through proper training, personal protective equipment and exhaustive control provisions cannot be understated.

specific guidelines and standards, providing personal protective equipment, and making sure fire companies are properly staffed goes a long way in ensuring safety and saving lives from fire and related hazards. Problems that the fire service is being required to address are expanding in scope and severity. Reauthorizing and funding Fire Grant programs will support the efforts of the fire service to serve their communities and maintain well trained and protected personnel.

Again, thank you for the opportunity to submit this statement for the record. Please don't hesitate to contact me if you have any questions with regard to this testimony or any other fire topic.

The complete Forth Needs Assessment of the U.S. Fire Service Report can be found on the NFPA website at: www.NFPA.org/needsassessment.

Sincerely,

Christian Dubay, P.E.
Vice President and Chief Engineer

Virginia Fire Chiefs Association, Inc.

P.O. Box 699, Blackstone, VA 23824

Phone (888) 818-0983

Web Site: www.vfca.us

July 12, 2017

The Honorable Barbara Comstock
229 Cannon HOB
Washington, DC 20515

Dear Chairwoman Comstock:

I am writing today on behalf of the Virginia Fire Chiefs Association (VFCA) to express our deep concerns regarding a proposal to make significant change to the Assistance to Firefighters Grant program. The AFG program was established to help local fire departments provide front-line emergency response to their communities and other qualified groups through a competitive review process. The VFCA is troubled by a proposal to earmark specific funding from this program to state fire marshals' offices from across the nation. The state Fire Marshals have the ability now to submit grant requests and have their respective applications reviewed and graded as part of the current program.

The Assistance to Firefighters Grant (AFG) program was created by Congress in 2000. The program is administered by the Federal Emergency Management Agency and uses a peer group to evaluate the respective grant applications based upon specific criteria. The Fire Prevention and Safety (FP&S) grant program uses a similar process to evaluate applications for local fire departments, universities, and non-profits to help promote fire prevention programs and support research to improve firefighter safety and reduce civilian deaths, injuries and property loss due to fires. The FP & S grant program is funded with 10% of the available grant funds for the AFG Program.

The VFCA is concerned by a proposal that would divert funds and earmark them for state government agencies. As I noted above, these agencies are eligible to apply for grant funds through the competitive process now. A proposal from the National Association of State Fire Marshals would take 8% of the available grant funds from the AFG program and add these funds to the FP & S grant program. While the VFCA supports fire prevention efforts we do not feel this approach is the best way to accomplish these goals.

In the Commonwealth of Virginia, the state fire marshal's office plays an important role in fire prevention through inspections of state facilities. However, they do not train front line firefighters. The purpose of the AFG program is to help offer support to local fire departments and other qualified groups in improving their all-hazards response. As such, this proposal would earmark funding to state agencies that in many cases do not provide fire response.

Currently, state fire marshals' offices have applied for and received grants through this program based upon the peer review merit based competitive process. The most recent example is New Hampshire State Fire Marshal's office received a grant for approximately \$680K in September 2016.

In reviewing the list of past awards there have been numerous other awards made to State Fire Marshals' officers over the past few years. Again, the VFCA is deeply concerned about efforts to modify this process and provide earmarked funds for state agencies. The existing program has been in place for some time and is working very well in providing equal opportunities for departments and qualified agencies to apply for support on a level playing field and go through a thorough review of qualified peer reviewers.

Thank you for the opportunity to share our feedback on this important matter. If you need additional information please feel free to contact me or our President – Jay Cullinan- Fire Chief Spotsylvania County at JCullinan@Spotsylvania.va.us or by phone 804-543-8520.

Sincerely,

R. Christian Eudailey
Executive Director
Virginia Fire Chiefs Association

cc The Honorable Dave Brat

LETTER SUBMITTED BY SUBCOMMITTEE
RANKING MEMBER DANIEL LIPINSKI



Property Casualty Insurers
Association of America
Advocacy. Leadership. Results.

NATHANIEL F. WIENECKE
SENIOR VICE PRESIDENT

July 11, 2017

The Honorable Barbara Comstock
Chair, Subcommittee on
Research and Technology
The House Science, Space and
Technology Committee
Washington, D.C. 20515

The Honorable Daniel Lipinski
Ranking Member, Subcommittee on
Research and Technology
The House Science, Space and
Technology Committee
Washington, D.C. 20515

Dear Chair Comstock and Ranking Member Lipinski:

The Property Casualty Insurers Association of America (PCI) appreciates the opportunity to write in advance of the House Science, Space and Technology Subcommittee on Research and Technology hearing titled, *U.S. Fire Administration and Fire Grant Programs Reauthorization: Examining Effectiveness and Priorities*, scheduled for Wednesday, July 12, 2017. PCI members strongly support grant programs and mitigation efforts that promote public safety and reduce the property damage risk from fire. Our association represents nearly 1,000 member property casualty insurance companies comprising the broadest cross-section of insurers of any national trade association. PCI members write over \$202 billion in annual premium, with policyholders in every congressional district and state.

According to FEMA, the Staffing for Adequate Fire and Emergency Response (SAFER) grants were created to provide funding directly to fire departments and volunteer firefighter interest organizations to help them increase or maintain the number of trained, "front line" firefighters available in their communities.¹ In recent years, budget appropriations for firefighting efforts have been far less than necessary, requiring the U.S. Forest Service to redirect funds originally intended for wildfire prevention and other purposes.

Wildfires pose an increasingly serious threat to public safety and place thousands of homeowners across multiple states at risk for losing their homes. According to the National Interagency Fire Center, so far this year, 33,158 wildfires have charred nearly 3.6 million acres across the United States as of July 11, 2017. For the same reporting period last year, 28,496 wildfires consumed 2.3 million acres across the country.² The insurance industry recognizes the value of properly funding emergency responders to protect the public both during and after natural disasters such as wildfires, hurricanes, and tornados. PCI members support federal programs that provide the resources necessary to effectively prevent and fight wildfires. Preventing or reducing the severity of wildfires should be a priority for federal, state, and local government as well as for private industry.

Effective response to wildfires will save untold numbers of homes and businesses. This important hearing to evaluate the effectiveness of SAFER grants could not come at a more appropriate time as tens of thousands of wildfires are currently raging across the U.S. PCI members strongly support effective grant and mitigation programs that promote public safety and reduce the risk of wildfire property damage. Please do not hesitate to contact us if we can be of further assistance.

Sincerely,

Nathaniel F. Wienecke

¹ <https://www.fema.gov/staffing-adequate-fire-emergency-response-grants>

² <https://www.nifc.gov/fireInfo/nfn.htm>