



U.S. Fire Administrator's Summit on Fire Prevention and Control Proceedings

Oct. 11-12, 2022

Published January 2023



FEMA



U.S. Fire Administration
Working for a fire-safe America



Letter From the U.S. Fire Administrator to the President of the United States

Jan. 9, 2023

The President
The White House
Washington, D.C.

Dear Mr. President:

It is my honor to present the Proceedings Report from the 2022 U.S. Fire Administrator's Summit on Fire Prevention and Control, held Oct. 11, 2022, at the National Emergency Training Center in Emmitsburg, Maryland. This historic meeting of governmental officials, fire service leaders and scientists convened to address America's fire problem.

The summit marked the 75th anniversary of President Truman's 1947 National Conference on Fire Prevention. The federal government has historically played a significant role in combating the "menace of fire," as President Truman described at the 1947 conference. This most recent summit identified the top issues and outlined a national strategy to address the fire problem currently facing our nation.

You continued President Truman's legacy with your virtual remarks illustrating your commitment to reducing the death toll caused by fires and your profound and personal respect for America's fire service. Thank you for being part of this historic summit and reminding firefighters that they are the "heart of the community."

Now, more than ever, we have the means to address the fire-related challenges we face, including wildfire due to climate change, improvements in codes and standards to protect our most vulnerable citizens, developing recruitment programs for a diverse and well-trained American fire service, and the reduction of cancer-causing chemicals affecting firefighters, as well as supporting the mental health of our first responders. Innovative thinking, the willingness to use all available tools, and, perhaps most importantly, the collaboration of all parties is necessary to meet these challenges. The summit was only the beginning of a comprehensive and strategic approach to addressing these challenges.

Since the summit, the U.S. Fire Administration and national fire service organizations have been working together to develop comprehensive and actionable solutions. I look forward to discussing this progress with you at the 2023 Summit on Fire Prevention and Control, which will take place the week of Oct. 8, 2023.

Sincerely and respectfully,

Lori Moore-Merrell, DrPH, MPH
U.S. Fire Administrator
USFA



Table of Contents

Letter From the U.S. Fire Administrator to the President of the United States ..	i
Executive Summary.....	1
Summit background	1
National Roundtable	2
Facilitated discussion	4
State of Science	4
State of Science highlights.....	7
Summit deliberations.....	7
Additional information.....	7
Fact Sheets	
Impact of Climate Change	9
Fire Service Apprenticeship Program	11
Impact of Occupational Cancer	12
Impact of Behavioral Health	13
Elevation of the Fire Service in Federal Policy Development	14
Impact of Codes and Standards.....	16
National Roundtable Agenda	17
State of Science Agenda	18
Summit Transcripts	19
National Roundtable	19
State of Science: President Joseph Biden	41
State of Science: Opening remarks from U.S. Fire Administrator Dr. Lori Moore-Merrell.....	46
State of Science: Opening remarks from Chief Ron Siarnicki, Executive Director of the National Fallen Firefighters Foundation	48
State of Science: Closing remarks from U.S. Fire Administrator Dr. Lori Moore-Merrell.....	49
State of Science Presentations.....	51
National Roundtable Facilitated Discussion.....	81
2022 Presidential Proclamation on Fire Prevention Week	83
Report: Impact of Climate Change.....	85
Issue statement	85
A wicked problem	85
Defining the issue	86
Targeted actions.....	86
Impact Areas	87
Occurrence of wildfire.....	87
Firefighting resources	87
Response differences between types of fires	87
Training, equipment and personal protective equipment.....	88
Water access.....	89

State of Science.....	91
Fires in the WUI: Facts and figures.....	91
The role of climate change	92
Land management impacts.....	93
Demographic and community changes.....	93
Emerging Issues Identified at the Summit.....	95
A wicked, but solvable, problem.....	95
Modern building codes.....	95
Training.....	96
Next steps	96
Report: National Firefighter Apprenticeship Program	97
Report: Comprehensive Firefighter Cancer Strategy.....	103
Report: Firefighter Behavioral Health Resources	109
Report: Codes and Standards Implementation and Enforcement.....	113
Report: Elevation of the Fire Service in Federal Policy Development.....	119
Appendix A: Organizations Represented at the Summit.....	121
Appendix B: Summit Attendees	123
Appendix C: Summit Speakers Biographies.....	127
National Roundtable	127
State of Science	136
Appendix D: Summit Media	145
Media advisory.....	145
Social media samples	147
Articles.....	151
NFPA Journal: Fall 2022.....	151
FireRescue1 by Lexipol	154
Firehouse	156
Homeland Security Today.....	159
UL Research Institutes	161
Appendix E: National Emergency Training Center (E Auditorium): Site of the 2022 U.S. Fire Administrator's Summit on Fire Prevention and Control.....	165
Appendix F: National Roundtable Briefing Document.....	167
Appendix G: State of Science Program	192

Executive Summary



Summit background

The mission of the U.S. Fire Administration (USFA) is to support and strengthen fire and emergency medical services (EMS) and stakeholders to prepare for, prevent, mitigate and respond to all hazards. The USFA is part of the U.S. Department of Homeland Security's (DHS's) Federal Emergency Management Agency (FEMA). An annual conference is authorized by 15 U.S.C. § 2213:

"The Administrator is authorized to organize, or to participate in organizing, an annual conference on fire prevention and control. He may pay, in whole or in part, the cost of such conference and the expenses of some or all of the participants. All of the Nation's fire services shall be eligible to send representatives to each such conference to discuss, exchange ideas on, and participate in educational programs on new techniques in fire prevention and control. Such conferences shall be open to the public."

The 2022 U.S. Fire Administrator's Summit on Fire Prevention and Control was held on Oct. 11 at the National Emergency Training Center in Emmitsburg, Maryland. The summit included 4 segments:

1. National fire service leaders participated in an invitation-only National Roundtable to brief the Biden Administration, the DHS and FEMA on the fire service's critical issues.
2. National fire service and research experts presented the State of Science to an in-person and virtual audience.
3. Attendees of the National Roundtable were invited to participate in a facilitated discussion about the National Roundtable testimony.
4. Summit deliberations were held on Oct. 12 with key stakeholders representing national fire service organizations and academic and scientific partners.

The summit marked the 75th anniversary of President Harry S. Truman's Conference on Fire Prevention which took place in Washington, D.C. The summit also coincided with the 100th anniversary of the National Fire Protection Association's (NFPA's) Fire Prevention Week.

The topics of the National Roundtable testimony were based on recommendations from attendees at 2 previously held meetings hosted by the National Fallen Firefighters Foundation (NFFF). The Truman Fire Forum was held in August 2022 in Independence, Missouri. The National Firefighter Life Safety Summit was held in September 2022 in San Antonio, Texas. The reports from these 2 meetings are included in the QR code at the conclusion of this Executive Summary.

The testimonies, delivered by national fire service leaders, were related to 6 identified problems in America's fire service and recommended solutions. These proposed solutions have become the Fire Service National Strategy, championed by the USFA. The strategies are:

1. Prepare all firefighters for the climate-driven increase in wildfires in the wildland urban interface (WUI) by providing them with the proper training and equipment.
2. Invest in a national apprenticeship program to address the shortage of firefighters and to make the fire service more diverse and inclusive.
3. Establish a comprehensive firefighter cancer strategy that invests in research, provides access to screening for firefighters, and reduces and eliminates PFAS exposure.
4. Provide behavioral health resources and suicide prevention initiatives for all firefighters.
5. Create safer communities by implementing and enforcing codes and standards, especially in the WUI and underserved and vulnerable populations providing affordable and fire-safe housing.
6. Elevate the fire service in federal policy development to an equal basis with law enforcement. (**Please note that this strategy was changed during the summit deliberations from "involve" to "elevate.")

National Roundtable

U.S. Fire Administrator Dr. Lori Moore-Merrell began the National Roundtable noting that there was only 1 day from Jan. 1 through Oct. 11 for which there was no reported loss of life from a residential fire. Dr. Moore-Merrell stated, "We should do everything we can on the federal, state and local levels to achieve a fire-safe America." She also noted that the fire service representatives at the National Roundtable were representing the fire service as a whole rather than their individual organizations.

The National Roundtable provided national fire service organizations representatives the opportunity to provide testimony to the following President Biden Administration representatives:

- 🔗 Alejandro Mayorkas, DHS Secretary (virtual remarks).
- 🔗 John Tien, DHS Assistant Secretary.
- 🔗 Deanne Criswell, FEMA Director.

-
- ④ Dr. Lori Moore-Merrell, U.S. Fire Administrator.
 - ④ Caitlin Durkovich, Special Assistant to the President and Senior Director for Resilience and Response for the National Security Council (NSC).

Highlights of their opening remarks include:

- ④ DHS Secretary Alejandro Mayorkas: “The bottom line is that you all take care of us, and we must take care of you. You have my commitment to fight for the resources you need and deserve to make the progress that the firefighter community needs, to address the increasing challenges we face today.”
- ④ DHS Deputy Secretary John Tien: “We know, as the secretary often will say, that we are a department of partnerships. We must be connected to all of you. And not just connected to all of you in understanding what you go through, but figuring out how we can resource, whether it’s through funding, whether it’s through offices, especially in terms of medical support through our new Office of Health Services or our chief medical officer, Dr. Pritesh Gandhi. We must determine ways to find out how we can support you specifically.”
- ④ FEMA Administrator Deanne Criswell: “I just want to underscore that the work that we put forth today, and in the weeks and the months to come, is an investment towards the safety of our future generations. This was the vision that President Truman had when he held the first fire conference 75 years ago. And it will remain true 75 years from now. And I want everyone here to know that your voices and your perspectives, they matter, and that together we can meet the mission to advance fire and life safety for all Americans.”
- ④ Senior Director for Resilience and Response for the NSC Caitlin Durkovich: “Whether it is a major disaster, a multialarm fire like has been mentioned in Philadelphia or in the Bronx, or a single emergency call, a wildfire, a mass casualty event, a hazmat spill, or a medical emergency, you are there. Firefighters are all-hazards responders, and local fire departments are foundational to the resilience of our communities. The president understands this implicitly, which is why he is such a strong supporter of the fire service and is committed to ensuring you have the resources and support you need to do your jobs.”



The following National Roundtable participants represented the fire service and provided testimony related to the fire problem in America:

- ❖ Chief Donna Black, International Association of Fire Chiefs (IAFC).
Topic: “Impact of Climate Change”
- ❖ Chief Kevin Quinn, National Volunteer Fire Council (NVFC).
Topic: “Fire Service Apprenticeship Program”
- ❖ General President Edward Kelly, International Association of Fire Fighters (IAFF).
Topic: “Impact of Occupational Cancer”
- ❖ Chief Ernest Mitchell, Jr., NFFF.
Topic: “Impact of Behavioral Health and Equality with Law Enforcement in Federal Policy Development”
- ❖ Mr. James Pauley, NFPA.
Topic: “Impact of Codes and Standards”

Open discussion took place after each of the fire service representatives delivered their testimony. The federal representatives noted the importance of partnering with other federal agencies to work on the strategies. For example, Deputy Secretary Tien commented on the similar challenges the Veterans Administration faces in dealing with veterans exposed to toxic chemicals resulting in cancer. FEMA Administrator Criswell stated that she is committed to working with Dr. Moore-Merrell to support the USFA’s development of mental health and suicide prevention programs.

There was also a recognition of the 100th anniversary of Fire Prevention Week with a reading of the Fire Prevention Week Presidential Proclamation by Senior Director Caitlin Durkovich.

The transcript of the National Roundtable is included in the Proceedings Report. The video of the National Roundtable is included in the QR code at the end of this Executive Summary.

Facilitated discussion

Commissioner Adam Thiel, Philadelphia Fire Department, led a discussion with summit attendees immediately following the National Roundtable about the testimony delivered during the National Roundtable.

State of Science

The State of Science began with opening remarks from U.S. Fire Administrator Dr. Lori Moore-Merrell. She provided a summary of the National Roundtable discussions and emphasized that the National Roundtable fire service representatives spoke with 1 voice, the voice of the whole fire service. She also noted the importance of partnerships, both within the fire service and with federal partners, to tackle the challenges facing the fire service and the fire problem in America.

Chief Ron Siarnicki, Executive Director of the NFFF, was the next speaker. The NFFF was the co-host of the State of Science portion of the U.S. Fire Administrator’s Summit on Fire Prevention and Control. Chief Siarnicki acknowledged the more than 100 firefighter recruits from Prince George’s County, Maryland; Loudon County,



Virginia; and the District of Columbia who were in the audience for the State of Science. "You are the future of the American fire service," Siarnicki stated, "and being a part of this historic event is going to set you on a journey to learn so much about what's happening in your industry." Chief Siarnicki also thanked the sponsors of the State of Science, including the premier sponsor, the NFPA. Leading sponsors included the National Association of State Fire Marshals (NASFM), the National Fire Sprinkler Association (NFSA), and Underwriters Laboratories' (UL's) Fire Safety Research Institute. Supporters included the International Code Council (ICC) and Milliken.

President Joseph Biden provided virtual remarks at the State of Science discussing many of his administration's initiatives related to firefighters and the fire problem in America. For example, the Cancer Moonshot is addressing environmental and toxic exposures to prevent cancer. There is a special claims unit at the U.S. Department of Labor (DOL) that can now process federal firefighters' cancer claims more efficiently. The new Protecting America's First Responders Act extends the benefits under the Public Safety Officers' Death Benefits Program to the families of firefighters killed in training. The U.S. Department of Defense is using satellite imagery to detect wildland fires in the early stages. President Biden confirmed his lifelong commitment to the fire service by stating, "I want you to know that my administration is doing everything we can to make sure you have the resources you need to do your job as safely and effectively and efficiently as possible."

The format of the State of Science included presentations divided into 4 panels. Each presentation segment was introduced by a member of the summit planning team.

Impact on Communities

Introduced by Dr. Lori Moore-Merrell

Commissioner Adam K. Thiel, City of Philadelphia Fire Department
Topic: "Retrospective of Fire Fatalities in Philadelphia"

Deputy Assistant Chief Frank Leeb, City of New York Fire Department (FDNY)
Topic: "Twin Parks Fire (Jan. 2, 2022)"

Dr. Susan M. Moore, National Institute for Occupational Safety and Health (NIOSH)

Topic: "Impact on Firefighters Working in Underserved Communities"

Dr. Steve Kerber, Fire Safety Research Institute

Topic: "Risks in the Changing Built Environment"

Chief Shane Ray, NFSA

Topic: "A Fire Safe America: A Happy and Safe Quality of Life Through Fire Safety"

Climate Change Impact on the Fire Service

Introduced by Ms. Lorraine Carli, Vice President, Outreach and Advocacy, NFPA

Karl Fippinger, ICC

Topic: "Wildland Urban Interface (WUI) Codes and Standards"

Michele Steinberg, NFPA

Topic: "Wildfire Disasters: A Wicked Problem"

Rick Swan, IAFF

Topic: "Responding to the Interface: Training to Prepare Structural Firefighters for WUI"

Impact on Firefighter Recruitment, Retention and Training

Introduced by Ms. Vickie Pritchett, Executive Officer, NFSA

Chief John H. Oates, International Public Safety Data Institute

Topic: "Data-Informed Insights on Recruitment and Retention"

Chief John S. Butler, Fairfax County Fire and Rescue Department (Virginia)

Topic: "Recruitment Challenges for Career Departments Focused on Diversity, Equity, and Inclusion"

Chief Brita Horn, Rock Creek Volunteer Fire Department (Colorado)

Topic: "Recruitment Challenges for Volunteer Fire Departments"

Impact on Firefighters' Health

Introduced by Chief Tonya Hoover, Deputy U.S. Fire Administrator

Dr. Kenneth Fent, NIOSH

Topic: "National Firefighter Registry: The Missing Piece"

Dr. Jeff Burgess, University of Arizona Mel and Enid Zuckerman College of Public Health

Topic: "The Fire Fighter Cancer Cohort Study (FFCCS): A Scientist-Fire Fighter Collaboration"

Dr. Sara Jahnke, Center for Fire, Rescue & EMS Health Research

Topic: "Women Firefighters & Cancer"

Dr. Denise L. Smith, Skidmore College

Topic: "Firefighter Cardiovascular Health"

Patrick Morrison, IAFF

Topic: "Firefighter Behavioral Health"

State of Science highlights

- ❖ Despite our vast technological advances these truths remain –
 - ▶ During a fire today, you have the least amount of time to safely exit your burning home than at any time in history.
 - ▶ Your chance of dying in a fire today is higher than 40 years ago.
- ❖ Fire deaths, injuries and displacement disproportionately affects lower income communities and people of color. Safe and affordable housing should not be mutually exclusive.
- ❖ 99 million people or a third of the U.S. population now live in the WUI environment, yet most have no idea what WUI is or the dangers it poses.
- ❖ Fire departments across the United States, both career and volunteer, are experiencing dramatic personnel shortages. This situation is a national problem and without intervention will continue to worsen affecting the ability to meet emergency call volume demand in many areas.
- ❖ Technology including micro-mobility products powered by lithium ion batteries are providing a new wave of fire causes.
- ❖ Automatic fire suppression systems like sprinklers save lives, yet resistance for these devices remains.

The State of Science was livestreamed to a virtual audience representing every state in the U.S. and 18 countries. The PowerPoint presentations from the State of Science are included in the Proceedings Report. The video from the State of Science is included in the QR code at the end of this Executive Summary.

Summit deliberations

The summit deliberations took place on Oct. 12, immediately following the Summit on Fire Prevention and Control. National fire service organizations and lead academic and scientific partners collaborated and committed to strategies to address the challenges discussed at the summit. There were 6 work groups formed based on the 6 topics from the National Roundtable. The work groups will meet during 2023 in preparation for the 2023 Summit on Fire Prevention and Control.

Additional information



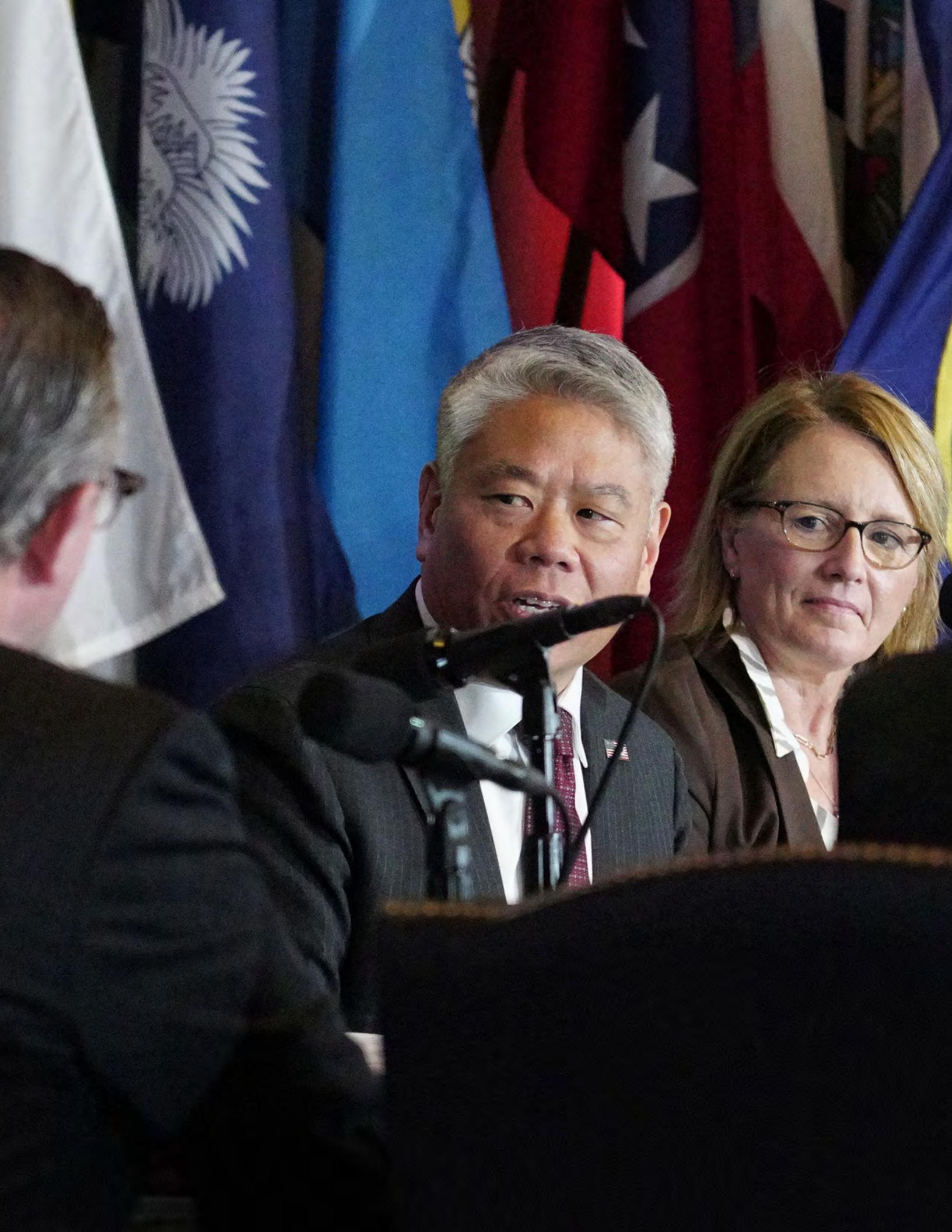
National Roundtable
and State of Science



NFFF reports



1947 report from
the President's
Conference on Fire
Prevention



Impact of Climate Change



Prepare all firefighters for the climate-driven increase in wildfires in the wildland urban interface (WUI) by providing them with the proper training and equipment.

Issue

WUI fires are one of the most devastating fire problems in the United States. Currently, most structural firefighters receive little to no training on how to respond, remain safe, and/or how to operate effectively in an extremely dangerous and dynamic fire environment.

Impact Areas

Occurrence of Wildfire

According to a June 2022 U.S. Congressional Budget Office report, the intensity of wildfires has increased, as has the number of wildfires impacting the built environment over the past 30 years. As our nation continues to grow and develop in the WUI, our communities are faced with increased wildfire threats associated with:

- ▶ **Increased populations.**
- ▶ **Reduced land management practices.**
- ▶ **Dangerous increase of fuel buildup.**
- ▶ **Climate change.**

The fire service today is faced with three main fire types:

1. **Structural fires** — fires involving built construction where trained firefighters have specific strategies and tactics to maintain life safety and gain control of a fire, including interior attack, exterior attack, search and rescue, ventilation, salvage, and overhaul.
2. **Wildland fires** — fires typically involving trees and other vegetation where wildland trained firefighters use specific strategies and tactics to gain control and suppress the fire, including offensive (direct attack) and defensive (indirect attack), backfire burning, and trenching. These strategies use equipment and/or resources such as bulldozers, aircraft, hand crews, and fire engines to construct fire lines that provide control and containment of the fire.
3. **WUI fires** — fires occurring in the built (structural) environment directly adjacent to or intermixed with a wildland area. WUI fire operations have non-standardized and relatively new and different strategies and tactics when compared with either strictly structural or wildland firefighting. Firefighters operating in the WUI use primary and secondary tactics typically conducted by structural engine crews attempting to adapt these tactics to fit the wildland fire situation.



FEMA



U.S. Fire Administration
Working for a fire-safe America



Firefighting Resources

Wildfire knows no boundaries. Fires can start and burn across federal, tribal, state, local, and private lands. That means fires are often fought with a combination of agencies and firefighters from different training backgrounds and employers. These differences include seasonal federal and state wildland firefighters, state and local career firefighters, and volunteer firefighters from community-based fire stations. While some firefighters trained to operate in the built environment are also specifically trained to engage in wildland firefighting, the majority have little to no training for operating in an urban or suburban conflagration with multiple structures burning simultaneously.

Advances in command and coordination, especially at large, long-duration wildland and WUI fire events, have improved resource deployment and operations on the ground. However, these resources often take time to get into place. Therefore, initial response often comes from state and local fire departments, many of which are already dealing with limited and overworked staff.

Training, Equipment, and Water

Local fire department responders are typically trained as structural firefighters given that single family dwellings are the most common fire risk they encounter. Structural firefighters, accustomed to fighting one structure fire at a time, are now being confronted with multiple structures burning simultaneously. They must react and respond with uncharacteristic tactics and strategies to successfully mitigate the event by reducing or eliminating fire spread. The reality is that they must add urban interface wildfire strategies and tactics to their operational repertoire.

As the risk of losing entire communities from wildfire extends to a year-round threat, staffing resources, proper training, and equipment are necessary to fight these WUI fires.

Training and Equipment

Communities across the nation are experiencing an increasing number of larger and more destructive wildland, urban interface, and suburban conflagration fires. Because these fires are occurring more often in both suburban and rural areas adjacent to or intermixed with the wildland, structural firefighters are regularly involved in suppression efforts and responsible for defending homes and critical infrastructure. According to the National Fire Protection Association Needs Assessment, 88% of structural fire departments in the U.S. respond to urban interface fires, but only 40 percent of those fire departments provide training on urban interface strategy and tactics.

Additionally, there is often difficulty accessing wildland firefighting equipment including PPE and proper footwear, for both women and men who attend training and are involved in WUI firefighting.

Water Access

Particularly in the West, water is a limited and often contested resource. Drought conditions elsewhere in the country are causing similar effects to spread eastward. Scarcity of water has a severe impact on firefighting efforts. Additionally, fire in watershed areas and burn scars following a fire can contaminate water resources as debris and other contaminants affect both availability of potable water and treatment efforts.

More Information



FEMA



U.S. Fire Administration
Working for a fire-safe America



Fire Service Apprenticeship Program



Invest in a national apprenticeship program to address the shortage of firefighters and to make the fire service more diverse and inclusive.

Issue

In recent years there has been a steady decline in the number of firefighters in the nation. This decline is impacting both career and volunteer departments, leaving the communities they serve vulnerable to threats, and increasing the stresses among firefighters and the municipalities. It is imperative that we invest in programs to incentivize individuals to join volunteer and career fire departments.

Figure 1. Number of Career Firefighters and Rate per 1,000 People

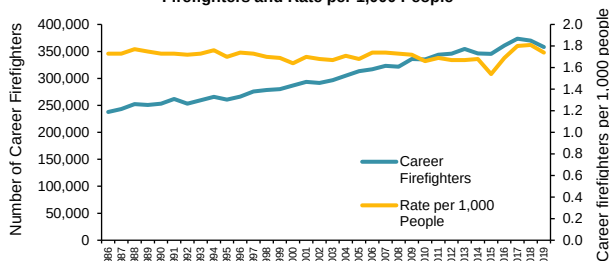
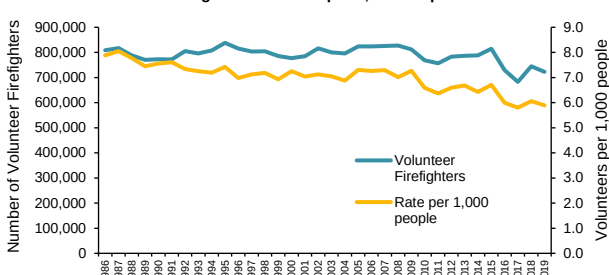


Figure 2. Number of Volunteer Firefighters and Rate per 1,000 People



NFPA. US Fire Department Profile 2019 Rita Fahy, Ben Evarts and Gary P. Stein, December 2021. <https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/osfdprofile.pdf>

Impact Areas

Local communities are facing numerous challenges when it comes to staffing local fire departments. The COVID-19 pandemic, civil unrest, active shooter, and mass casualty events have all contributed to recruitment and retention challenges for career and volunteer fire departments. In addition, increasing emergency call volumes, greater time demands, time-consuming training requirements, aging communities, and the physical and behavioral risks of the occupation create further challenges to fire departments struggling to maintain sufficient staffing levels.

The fire service struggles to recruit and retain women and people of color. The most recent data from the Bureau of Labor Statistics in 2019 reported that 11.6% of career firefighters were Hispanic or Latino, 8.5% were African American, and 1.3% were Asian-Pacific Islanders. Women represent 11% of volunteer firefighters and 5% of career firefighters, according to the NFPA's 2022 "U.S. Fire Department Profile" report based on 2020 data.

The creation of a National Fire Service Apprenticeship program would assist local communities in addressing the shortage of firefighters in both career and volunteer departments and help make the fire service become a more diverse and inclusive vocation. The fire service apprenticeship program should be designed to mirror the Department of Labor's Registered Apprenticeship and the Industry-Recognized Apprenticeship Programs.

More Information



Impact of Occupational Cancer



Establish a comprehensive firefighter cancer strategy that invests in research, provides access to cancer screening for firefighters, and reduces and eliminates PFAS exposure.

Issue

Firefighters have a 9% higher risk of developing cancer and a 14% higher risk of dying from cancer compared to the general public.

Impact Areas

Research

Greater investment in research will expand our understanding of the mechanisms between occupational exposures and cancer, why firefighters are at heightened risk from some cancers, and to better understand the cancer risks of our under-studied populations, including women and minorities.

Access to cancer screenings

Preventive screenings can identify cancer in its earliest stages when positive treatment outcomes are more likely. However, it remains difficult for individual firefighters to receive early screenings as current screening guidance does not account for their occupational exposures. Revised screening guidance can help medical professionals and insurance companies understand the need to screen firefighters based on their higher cancer risk.

Reduce and eliminate PFAS exposures

PFAS are likely carcinogenic chemicals that degrade very slowly, earning the label "forever chemicals." PFAS are found in a firefighter's blood, their firehouses, some firefighting foams, and perhaps most concerning, bunker gear. These chemicals are intensifying exposures, even though it is coming from the very gear meant to protect firefighters. Next-generation PPE can remove this risk.

CANCER RESEARCH

Fire Fighter Routes of Cancer Exposure



Inhalation

From breathing contaminants due to not wearing a SCBA, or to ill-fitting or defective SCBA



Absorption

From contaminants going through, around, or under gear and contacting the skin



Ingestion

From touching contaminated gear and not washing hands properly

Fire Service: Increase training and education about safe work practices to reduce cancer exposures.



Source: <https://www.fda.gov/oc/ohrt/ohrt-report-2018>

More Information



FEMA



U.S. Fire Administration
Working for a fire-safe America



Impact of Behavioral Health



Provide behavioral health resources and suicide prevention initiatives for all firefighters.

Issue

An increasing number of firefighters are dying by suicide suffering from behavioral health issues, including post-traumatic stress, from exposures that they have suffered while delivering emergency medical services to the public. There is a lack of culturally competent behavioral health specialists to assist firefighters, and local Employee Assistance Programs are ill-equipped to assist first responders.

Impact Areas

Firefighters and other rescue personnel develop PTSD at a similar rate to military service members returning from combat, according to an August 2016 study from the Journal of Occupational Health Psychology. The report reveals that approximately 20 percent of firefighters and paramedics meet the criteria for PTSD at some point during their career.¹ This compares to a 6.8 percent lifetime risk for the general population. The connection between PTSD and traumatizing rescue work is clear.

The number of firefighter suicides is estimated to be at least 100 per year. According to the "Ruderman White Paper on Mental Health and Suicide of First Responders," the suicide rate for firefighters is 18 per 100,000 compared to 13 per 100,000 for the general public.

The federal government has a responsibility to protect those who protect us by investing in the protectors' mental health. Grant programs funding peer-supported behavioral health and wellness programs within fire departments should be established by Congress. Resources should be available to health care providers highlighting best practices for addressing post-traumatic stress among public safety officers. Accurate data on the prevalence and causes of post-traumatic stress and suicide with the fire service must be collected. According to evidence-based research, behavioral health awareness campaigns provide effective intervention methods. It is our collective responsibility to provide those who serve with the tools they need to help themselves and each other.

The FBI launched the Law Enforcement Suicide Data Collection on January 1, 2022.² to help improve understanding and prevent suicide among law enforcement officers. We applaud this effort, and a similar data collection model is needed at the U.S. Fire Administration.

It is our position, that we need to provide behavioral health resources and suicide prevention initiatives for all firefighters. Like other injuries, early detection, access to culturally competent behavioral health specialists and proper screening can help reduce the effects of post-traumatic stress. Many insurance providers cap the costs related to behavioral health assistance and treatment centers for behavioral health programs are often out of the reach of the average firefighter.



More Information



¹ <https://www.iaffrecoverycenter.com/blog/trauma-firefighting-and-ptsd/>

² <https://www.fbi.gov/services/cjis/ucr/law-enforcement-suicide-data-collection>



FEMA



U.S. Fire Administration
Working for a fire-safe America



Elevation of the Fire Service in Federal Policy Development



Involve the fire service in federal policy development on an equal basis with law enforcement.

Issue

The fire service must be included in federal policy development on an equal basis with law enforcement when federal agencies develop policies and programs related to public safety, such as first responder behavioral health, building and fire codes, and the five mission areas of the National Preparedness Goal (prevention, protection, mitigation, response and recovery).

Impact Areas

The White House Fiscal Year 2023 budget proposal includes \$1.97 billion in discretionary funding to support state and local law enforcement, an increase of 12% over the previous fiscal year.¹ This represents a significant investment in local law enforcement and is much needed. Despite the significant fire problem our nation faces, the Administration requested \$740 million for grants to local fire departments.² The National Fire Protection Association estimated the total cost of fire in the United States in 2014 was \$328.5 billion, approximately 1.9% of the U.S. Gross Domestic Product.³ Federal investments in fire protection and response are not sufficient to address the scope of the problem.

In addition to supporting local law enforcement, federal law enforcement agencies have a significant presence in the federal government. These agencies include the Air Force Office of Special Investigations, Army Criminal Investigation Division, Defense Criminal Investigative Service, Naval Criminal Investigative Service, Coast Guard Investigative Service (Department of Defense), Customs and Border Protection, Federal Protective Service, Immigration and Customs Enforcement, U.S. Secret Service (Department of Homeland Security), Bureau of Alcohol, Tobacco, Firearms and Explosives, Drug Enforcement Administration, Federal Bureau of Investigation, U.S. Marshal Service (DOJ), U.S. Park Police (Department of Interior), IRS Criminal Investigations Division (Department of Treasury), U.S. Postal Inspection Service (U.S. Postal Service), Probation and Pretrial Services (Judicial Conference of the U.S.), and U.S. Capitol Police (United States Congress).

Nearly every department and agency in the federal government touches upon fire and emergency services. These departments are responsible for engaging with fire service stakeholders — inside and outside of the federal government — when developing policies and

¹[FACT SHEET: President Biden's Budget Invests in Reducing Gun Crime to Make Our Communities Safer](#) (White House; March 28, 2022)

²[Fiscal Year 2023 President's Budget](#)

³[Total Cost of Fire in the United States](#) (NFPA; October 2017)

More Information



procedures impacting fire and life safety. Despite the fire service's significant footprint within these departments' mission, there is a lack of coordination and cohesive policy development among these agencies. Consistent, competent and effective leadership at the U.S. Fire Administration level can coordinate these policies and ensure that the fire service stakeholders can effectively operate at the national level.

The U.S. Fire Administration (USFA) should be elevated within the Federal Emergency Management Agency (FEMA) and transformed into a multi-disciplinary response, preparedness, and mitigation agency. As many response agencies already have, each FEMA region should have a dedicated USFA specialist to assist in the planning and response to disasters. USFA must be fully funded and appropriately staffed in order to execute its mission.

The federal government has numerous agencies and programs impacting the nation's fire and emergency services. Nearly every department in the federal government touches upon fire and emergency services. Here is a snapshot of some of the various programs in the federal government impacting fire and life safety.

Department of Defense

- ▶ Military firefighter health and safety

Department of Justice

- ▶ Bureau of Justice Assistance
- ▶ Public Safety Officers' Benefits Program

Department of the Interior

- ▶ Bureau of Land Management
- ▶ Wildland firefighting

Department of Agriculture

- ▶ U.S. Forest Service
- ▶ Wildland firefighting

Department of Commerce

- ▶ National Telecommunications and Information Administration
- ▶ First Responder Network Authority (FirstNet)

Department of Labor

- ▶ Occupational Safety & Health Administration

Department of Health and Human Services

- ▶ Centers for Disease Control & Prevention/
National Institute for Occupational Safety & Health
- ▶ National Firefighter Registry

Department of Housing and Urban Development

- ▶ Public and Indian Housing
- ▶ Safe and affordable housing for our most vulnerable populations

Department of Transportation

- ▶ National Highway Traffic Safety Administration
- ▶ Office of EMS

Department of Energy

- ▶ Office of Environment, Health, Safety & Security
- ▶ Fire Protection Program

Department of Education

- ▶ Office of Postsecondary Education
- ▶ Campus Safety & Security

Department of Veterans Affairs

- ▶ Safe and affordable housing for veterans and their families

Department of Homeland Security

- ▶ Federal Emergency Management Agency/U.S. Fire Administration
- ▶ National Fire Academy
- ▶ Assistance to Firefighters/Staffing for Adequate Fire & Emergency Response/Fire Prevention & Safety Grants



FEMA



U.S. Fire Administration
Working for a fire-safe America



Impact of Codes and Standards



Create safer communities by implementing and enforcing codes and standards, especially in the wildland urban interface (WUI) and under-served and vulnerable populations providing affordable and fire-safe housing.

Issue

State and local governments are responsible for promoting the use and enforcement of current codes and standards. The federal government can help by incentivizing compliance and providing funding to local jurisdictions for code implementation, inspection, and enforcement. This will increase fire and life safety in our communities, especially in the WUI and among under-served and vulnerable populations.

Impact Areas

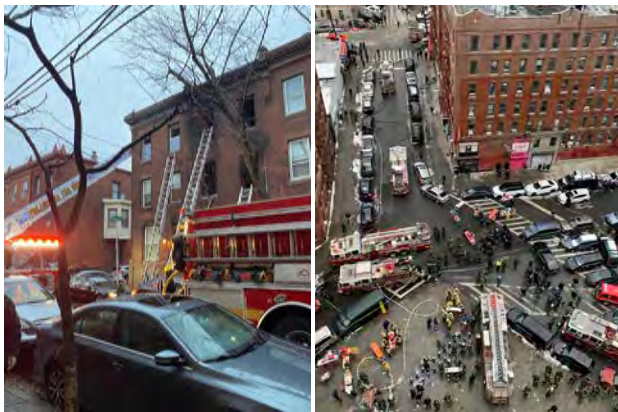
Model building codes improve building resilience to natural disasters and save \$11 for every \$1 invested.¹

All nationally recognized modern building and fire codes require the use of life-saving technology, like smoke alarms, carbon monoxide alarms, and automatic fire sprinkler systems.

Nearly a million households live in public housing units in the United States,² and fire safety improvements in public housing must receive heightened attention. In 1992, Congress passed the Federal Fire Safety Act (15 USC 2227), requiring newly constructed multi-family housing units to have fire sprinklers. HUD estimates that approximately 570,000 multi-family public housing units are in their inventory that were constructed before the sprinkler requirement. A significant portion of these units lack the protection offered by fire sprinklers.

In buildings with automatic fire sprinkler systems, the civilian fire death rate is 89 percent lower than non-sprinklered buildings and the injury rate is 27 percent lower. Furthermore, property damage decreases significantly in buildings protected by fire sprinklers.³ Investments must be made in retrofitting public housing with fire sprinkler systems.

Nearly three out of five home fire deaths are caused by fires in properties without smoke alarms or smoke alarms that failed to operate.⁴ HUD must provide resources to public housing authorities to either retrofit housing units with hardwired smoke alarms or require the installation of tamper-resistant long-life battery-powered smoke alarms.



Philadelphia Fire Department units operating at January 2022 multi-fatality fire in the city's Fairmount neighborhood. Photo credit: PFD Community Action Team

January 9th 2022: Bronx, New York: FDNY units operating at the Twin Parks Fire. Tragically, 17 people died at this fire. However, many more were rescued by the FDNY. Photo credit: Frank Leeb

More Information



¹Natural Hazard Mitigation Saves: 2019 Report (National Institute for Building Sciences; December 1, 2019)

²U.S. Department of Housing & Urban Development, Office of Public and Indian Housing

³US Experience with Fire Sprinklers (NFPA; October 2021)

⁴Smoke Alarms in US Home Fires (NFPA; February 2021)



FEMA



U.S. Fire Administration
Working for a fire-safe America



National Roundtable Agenda

From the National Roundtable Briefing Document (Appendix F)

Welcome and Opening Remarks

Dr. Lori Moore-Merrell
U.S. Fire Administrator

Mr. Clifton Truman Daniel*

National Roundtable

Chief Donna Black
President, IAFC

Chief Kevin Quinn
First Vice Chair, NVFC

General President Edward Kelly
IAFF

Chief Ernest Mitchell, Jr.
Board of Directors Member, NFFF
Former U.S. Fire Administrator

Mr. James Pauley
President and Chief Executive Officer (CEO), NFPA

Presidential Proclamation of the 100th Fire Prevention Week Closing Remarks

*Mr. Daniel was unable to attend the summit.

State of Science Agenda

From the State of Science Program (Appendix G)

Opening Remarks

Dr. Lori Moore-Merrell, U.S. Fire Administrator

Chief Ron Siarnicki, NFFF

Impact on Communities

Introduced by Dr. Lori Moore-Merrell

Commissioner Adam K. Thiel, City of Philadelphia Fire Department Deputy
Assistant Chief Frank Leeb, FDNY

Dr. Susan M. Moore, NIOSH

Dr. Steve Kerber, Fire Safety Research Institute

Chief Shane Ray, NFSA

Climate Change Impact on the Fire Service

Introduced by Ms. Lorraine Carli, Vice President, Outreach and Advocacy,
NFPA

Karl Fippinger, ICC

Michele Steinberg, NFPA

Rick Swan, IAFF

Impact on Firefighter Recruitment, Retention and Training

Introduced by Ms. Vickie Pritchett, Executive Officer, NFSA

Chief John H. Oates, International Public Safety Data Institute

Chief John S. Butler, Fairfax County Fire and Rescue Department (Virginia)

Chief Brita Horn, Rock Creek Volunteer Fire Department (Colorado)

Impact on Firefighters' Health

Introduced by Chief Tonya Hoover, Deputy U.S. Fire Administrator

Dr. Kenneth Fent, NIOSH

Dr. Jeff Burgess, University of Arizona Mel and Enid Zuckerman College of
Public Health Dr. Sara Jahnke, Center for Fire, Rescue & EMS Health Research

Dr. Denise L. Smith, Skidmore College

Patrick Morrison, IAFF

Closing Remarks

Dr. Lori Moore-Merrell

Summit Transcripts

National Roundtable

Dr. Lori Moore-Merrell:

Good morning. I'm Dr. Lori Moore-Merrell, the U.S. Fire Administrator, and it is my pleasure to welcome you to the United States Fire Administrator's Summit on Fire Prevention and Control at the National Emergency Training Center here in Emmitsburg, Maryland. The Summit on Fire Prevention and Control begins this morning with a National Roundtable, where we have renowned fire service leaders prepared to brief homeland security leadership, FEMA and the administration on the critical issues facing the fire service and our nation. Later today, in a livestream event, we will hear from leading fire service researchers and subject matter experts on the current state of science for fire and firefighter health and safety.

June 8th was a historic day this year, because on June 8th, it was the only day this year so far that there have been no known reported civilian home fire fatalities. Every other day this year, civilians have died in a fire at home, where they should be safest. Some of these tragedies make the evening news, like the January 5th fire in Philadelphia that killed 12 people, among them 9 children. And just 4 days later on January 9th, 17 people, including 8 children, were killed in the Bronx, New York. 44 civilians were injured, and 17 of those injured were under the age of 18.

But the many other lives lost so far this year did not make the national headlines. As your U.S. Fire Administrator and with my 35 years of experience in the fire and emergency services, I know that these are preventable deaths. We gathered this National Roundtable from different organizations, but today we stand together as a unified fire service. Some of the issues discussed may take some time to resolve, but others can begin immediately.

We must begin today, because climate change affects where fires occur, and directly impacts firefighters without sufficient training and protective equipment. Chief Donna Black from Duck, North Carolina, and the president of the International Association of Fire Chiefs will speak to this issue.

We must begin today because we're facing a fire problem in America with fewer firefighters than we need. Chief Kevin Quinn from the Union Fire District in Rhode Island and the National Volunteer Fire Council will present a plan to increase the number of firefighters with a similar program already underway in the U.S. Department of Labor.

We must begin today, because somewhere in our country today, a firefighter is being diagnosed with cancer from their exposures on the job. General President Ed Kelly from the International Association of Firefighters will speak about this issue.

Firefighters also face a mental toll that must be addressed. Chief Ernie Mitchell, former U.S. Fire Administrator and representative of the National Fallen Firefighters Foundation will discuss the efforts needed to prevent firefighters dying from suicide. We are not just here today to talk about the fire problem in America. We're also here to offer solutions. Therefore, Chief Mitchell will also offer a possible solution to elevate the fire service within the federal government to work side by side with other agencies working to protect and serve their communities.

And finally, we must do a better job at ensuring that no more lives are taken from fires that could have been prevented by the codes and standards that are in place if they were only enforced. Mr. Jim Pauley, president and CEO of the National Fire Protection Association, will be speaking about this issue.

We must begin today, because until every day is like June 8th, we must do everything we can at the federal, state and local levels to achieve a fire-safe America.

To start this roundtable is a leader whose passion for the security of the homeland is only surpassed by his integrity and his compassion for people. It is now my honor to introduce to you the secretary of the Department of Homeland Security, Alejandro Mayorkas.

Secretary Alejandro Mayorkas (appeared virtually):

Thank you very much Dr. Moore-Merrell, and I'm very sorry that I'm not there in person, but I greatly appreciate the opportunity to share a few thoughts with you this morning. And you'll see that the subjects that I touch upon briefly are those that Dr. Moore-Merrell referenced in her opening remarks just now. I do want to recognize Dr. Moore-Merrell for being such an extraordinary U.S. fire administrator. She's such a powerful voice for the firefighter community across our entire country.

I think that the recent and devastating Hurricane Ian showed our nation yet again the bravery and selflessness of our firefighter community, with so many of you and other emergency responders being the first on the scene to rescue people and address their most urgent needs.

In August, I learned a great deal more about the needs of firefighters when I sat down with the leadership of the International Association of Fire Chiefs and heard them speak of the challenges all of you face. Some were heartbreaking, frankly, but so important to know. They define the work that Lori, I, Administrator Criswell, our superb leader of FEMA, and many others must do for you and with you. Firefighters respond not just to fires and extreme weather events, but increasingly to events such as protests or mass gatherings that could become violent and jeopardize people's safety.

When one fire chief lamented in our International Association of Fire Chiefs' discussion that he needed help to equip his squad with ballistic gear, like bulletproof vests, which they don't yet have, there were nods all around the table. Traditional equipment is also much in need, and supply chain delays are presenting acquisition and timing challenges. We are, I want you to know, tackling your equipment needs with the urgency that the situation requires.

I learned also at the IAFC leadership meeting how widespread certain cancers are among firefighters past and present. Dr. Moore-Merrell referenced that a moment ago. Since then, I've pulled more specific data, which has only increased and elevated my concern. Our new office of health security can and will play an active role in really supporting prevention programs and responsive care.

I also heard of our need to grow our SAFER and AFG grant programs. I learned about the importance of simplifying our grant application process to make these resources more accessible to fire departments of all sizes and of all resources across the country. And we will make that a priority.

We also need to increase the funding for the fire administrator and build capacity in response to increasingly dynamic fire events. The bottom line is that you all take care of us, and we must take care of you. You have my commitment to fight for the resources you need and deserve to make the progress that the firefighter community needs to address the increasing challenges we face today.

I want to thank you for everything that you do, and please know that you have the full support of our department behind your noble mission. Thank you so much.

Dr. Lori Moore-Merrell:

Thank you, Mr. Secretary. We really appreciate your spending some time with us this morning and continuing to engage with the fire service to make our nation safer. Thank you, sir.

Our next leader is also from the Department of Homeland Security. Deputy Secretary John Tien is here with us today, and Deputy Secretary Tien certainly understands public service and what it's all about. He is a graduate of the United States Military Academy and a veteran of 3 combat tours. His military decorations are numerous. We are so grateful that you are here this morning, sir. Thank you.

Deputy Secretary John Tien:

Great. Thanks very much. I appreciate that. And you mentioned, Lori, that I understand service. I certainly do from a United States Army side, 3 combat tours in Iraq. But I also understand the service and the sacrifices, the bravery and the courage of all of you in the firefighting community. On my stepfather's side, I am the grandson of a fire chief from Staten Island, and I am also the nephew of a fire chief from Staten Island. If you probably put those 2 dots together, it was my uncle who replaced my grandfather in Staten Island a while back, in the '40s and '50s. If you guys want to do any Googling around that, Bud Hennessy and Bill Hennessy.

So, I certainly appreciate that. I've heard the many stories of them from them, and again, of the sacrifices and of the courage. And he's still alive. Bud Hennessy, up in Staten Island, in his mid-90s, and he tells me about all of the challenges that are ongoing today for all of you. The line-of-duty deaths, as the secretary just mentioned, we certainly appreciate. I think it's 70% line-of-duty deaths due to cancer.

The PTSD, which I can connect to from a United States Army veteran piece, it is hard to go in literally on the front line and to experience the sorts of things that you first responders — those who are in combat tours — experience and not at some point be impacted by that mentally, emotionally and quite honestly, physically.

When I was looking through your amazing National Fallen Firefighters Memorial Weekend book here, as I was flipping through, I came across Lieutenant Bud Hills from Aurora, Colorado, and it immediately jumped to mind, my uncle Bud Hennessy. And I was reading through his bio, and I just saw a lifetime of service to protecting, as the secretary just said, protecting all of us.

So as the secretary said, the Department of Homeland Security, through our great administrator, Deanne Criswell, through our great fire administrator, Dr. Lori Moore-Merrell, the Department of Homeland Security is with you. We know, as the secretary often will say, that we are a department of partnerships. We must be connected to all of you. And not just connected to all of you in understanding what

you go through, but figuring out how we can resource, whether it's through funding, whether it's through offices, especially in terms of medical support through our new Office of Health Services or our chief medical officer, Dr. Pritesh Gandhi. We must determine ways to find out how we can support you specifically.

So with that, I'm honored to be here today. I look forward to being educated even more so on all of, not only what you do, but the challenges that you face, and looking forward to the testimony. So with that, back to you, Dr. Moore-Merrell.

Dr. Lori Moore-Merrell:

Thank you so much, sir. Thank you. We really appreciate that and the very personal touch you just put on that story. So, thank you so much.

Our next leader is someone that you have all seen in action, particularly in the last couple of weeks. Our FEMA administrator, Deanne Criswell. She began her career as a firefighter in Aurora, Colorado, later leading up that city's Office of Emergency Management. She served also as commissioner of the New York City Office of Emergency Management, coordinating the COVID-19 response. Administrator Criswell also proudly served for 21 years in the Colorado National Guard as a firefighter.

And she is an advocate for the fire service, she is an advocate for firefighters, and she is an advocate for the USFA. I can't tell you how many doors she is opening to make sure we can elevate this administration to what it should be. And so, I am very happy and honored to introduce you to my friend, Deanne Criswell.

Deanne Criswell:

Lori, thank you so much. It's such an honor to be here today at the United States Fire Administrator's Summit on Fire Prevention and Control, and to join everybody as we kick off the 100th annual Fire Prevention Week. It takes, like you said, partnerships to do this. And so I am also extremely grateful that President Biden, who you'll hear from later today, as you just heard from DHS Secretary Mayorkas and Deputy Secretary Tien, that leadership is listening, and that we want to hear from all of you so we can continue to improve on the important work that you do.

And Lori, I just want to thank you personally. Your leadership with the USFA has been instrumental, making great changes. Happy to be part of this team.

Dr. Lori Moore-Merrell:

Thank you.

Administrator Deanne Criswell:

So the discussion that we're going to have today about the challenges that our fire service face, as well as our communities, is very timely. It's needed, and it's something that I personally take very seriously. I began my career nearly 3 decades ago in Aurora, Colorado. Bud Hills, worked with him in Aurora, and I saw firsthand the danger that fire poses, not only to the citizens, but to our firefighters, to our first responders.

And I was honored to be able to participate in the remembrance just this past Sunday, and speak at, and join many of you, at the National Fallen Firefighters

Memorial Service. The stories at this service that were shared by the leaders of the fallen and their loved ones were deeply moving, and they serve as a real solemn reminder of the serious consequences of the work that you all do. Tragically, in 2022, so far more than 1,600 people have been killed by a fire, and that includes 77 firefighters.

But the threats to the lives of these public servants extends well beyond the calls that they take. As was the case for the recent loss of FDNY EMS Lieutenant Alison Russo, who was senselessly murdered just steps from her station house just a few weeks ago. So let us never forget the ultimate sacrifices made on behalf of our safety, the heroes who made them, and the loved ones who were left behind.

And on top of the fire danger are the cascading impacts of increased cancer rates and mental health issues of our first responders, and everything that they're facing. These factors — as well as a growing call, volumes of increased responsibilities — have led to a steady decline in the number of firefighters that we have. And this is a deeply concerning problem for me. And it's a problem we must face, we must come together to address. So, I am confident that the voices at the table today have the power to define the solutions that we need to protect those who vowed to put the needs of others before their own.

So now, while any community can face the dangers of fire, we have unfortunately seen time and again that it disproportionately impacts our most vulnerable populations: older adults, children, people with access and functional needs, low-income families. The recent devastating fires in Philadelphia and the Bronx really highlight this tragic truth.

But the impacts of fire is not limited to our cities. Our precious wildlands are also being ravaged by unforgiving impacts of wildfire. As we continue to see across the western United States, extreme heat, prolonged drought and high winds are serving as compounding factors to the year-round wildfire crisis. The call to mitigate these threats is growing louder each and every day. That is why FEMA, the U.S. Fire Administration and our federal partners are leaning into a national cohesive strategy to develop resilient landscapes, fire-adapted communities and effective response capabilities.

For example, we are helping lead the new Wildland Fire and Management Commission that is going to deliver workable and impactful solutions to Congress. This commission, comprised from partners across all levels of government and the private sector, is focused on creating safer communities by implementing and enforcing higher codes and standards, especially in the wildland urban interface and in our underserved communities. This is just 1 step that FEMA is taking to ensure that we are building a safer and more fire-resilient nation. The work ahead of us is extensive, but it's not impossible if we have a strong set of partners with us each step of the way. And today is the start of that process.

And finally, I just want to underscore that the work that we put forth today and in the weeks and the months to come is an investment towards the safety of our future generations. This was the vision that President Truman had when he held the first fire conference 75 years ago. And it will remain true 75 years from now. And I want everyone here to know that your voices and your perspectives, they matter, and that together we can meet the mission to advance fire and life safety for all Americans. So, thank you so much for taking the time to join us here today to have this important discussion.

Dr. Lori Moore-Merrell:

Thank you, ma'am. We really obviously appreciate your personal touch on this meeting as well. We're very excited also to have Director Caitlin Durkovich here, representing the president and the team at the National Security Council. Caitlin is the NSC Senior Director for Resilience and Response, and quarterbackes the White House's response to major domestic incidents, including wildfires, hurricanes, floods and terrorist attacks. She's also responsible for coordinating national policy in these areas and has been a tremendous voice and advocate for firefighters since day 1 of the Biden administration. At this time, please welcome Caitlin Durkovich.

Senior Director Caitlin Durkovich:

Lori, thank you very much, and good morning to all of you. I am honored to be here today, and honored to represent President Biden and his White House at this important roundtable. As Lori mentioned, I am senior director for resilience and response at the National Security Council. And I'm sure the words resilience and response resonate with all of you.

As recent events continue to show us, firefighters are a critical and essential part of the nation's incident response infrastructure and play a major role in sustaining our national resilience. Like other Americans, we at the White House watched anxiously as Hurricane Ian made landfall in Fort Myers, wondering what was happening on the ground and what type of damage and destruction the storm would leave in its wake. Then we all saw what happened next. Local firefighters and other first responders doing what they do best, running into the devastation as soon as it was humanly possible to begin search and rescue efforts and help those in needs, often putting their own needs to the side.

Firefighters from both local departments and urban search and rescue teams from across the country have spent days searching, rescuing and providing vital assistance to survivors. And as Florida begins to recover, firefighters will be a stabilizing factor for those communities, helping them stay resilient while they navigate the long road to recovery that we all know lie ahead.

Whether it is a major disaster, a multialarm fire like has been mentioned in Philadelphia or in the Bronx, or a single emergency call, a wildfire, a mass casualty event, a hazmat spill, or a medical emergency, you are there. Firefighters are all-hazards responders, and local fire departments are foundational to the resilience of our communities.

The president understands this implicitly, which is why he is such a strong supporter of the fire service, and is committed to ensuring you have the resources and support you need to do your jobs. I look forward to hearing directly from all of you today, and to discussing where we can work together to address the emerging challenges within your community. Thank you, Lori, for the opportunity. Thank you for your service, and back over to you.

Dr. Lori Moore-Merrell:

Thank you so much, Caitlin. So let's get to it. Our first testimony this morning is coming from Chief Donna Black. Donna, please share your thoughts on the impact of climate change, firefighting, including what you have seen in your hometown.

Chief Donna Black:

I'm honored to speak with you this morning. As fire chief of Duck, North Carolina, I have witnessed the effects of climate change. I have seen hurricane-driven storm surges and wind endanger our residents and visitors, and damage our buildings, beaches and roads. As climate change drives extremes in weather, we see extremes emerging in our nation's fire problem. Due to climate change, more fire departments are responding to an increasing number of wildland urban interface in suburban conflagration fires.

The wildland urban interface is where suburban and rural areas merge with the wildland. About one-third of our population lives in this built environment. My state ranks fourth in terms of houses in the wildland urban interface, trailing only California, Texas and Florida. Fires in the wildland and wildland urban interface are also larger and more destructive. The western states continue to experience significant impacts, including increases in fires so severe that they threaten forest recovery.

These fires are not limited to the western U.S. The Southeast may see these large fires increase by 300 to 400% in the next 30 years. Nor are these fires limited to a season. Colorado's Marshall fire burned 6,000 acres, destroyed more than a thousand homes and businesses, and caused over \$500 million in damages in December. Well outside the traditional wildland fire season.

With suburban conflagration fires in the wildland urban interface, structural firefighters are not fighting a single-family house fire. Instead, they're responding to entire neighborhoods and communities under threat. The NFPA's needs assessment found that while 88% of structural fire departments respond to interface fires, only 50% have training on interface fires involving multiple structures. This must change. We need funding to provide all firefighters, career and volunteer, with the training and equipment necessary to meet these challenges. Properly equipped and trained firefighters can conduct rapid fire attack operations, reducing life and property loss, preserving scarce firefighting resources, and lessening environmental impacts.

Finally, water is a critical issue. As droughts continue, limited water for firefighting is not something that may happen someday; it's happening now, today. In July, firefighters in Pembroke, Massachusetts, could not use their fire hydrants because of a water shortage. Officials in Las Vegas, New Mexico, announced they had about 20 days of water left after ash and debris from the state's largest wildfire contaminated the supply. Without readily available water, firefighters may not be able to stop a small brush fire from becoming a disaster.

In closing, we cannot continue this cycle. Our current system, while much improved, cannot overcome climate change, population growth, and complex changes in both our society and the built environment. We must prepare our firefighters for the climate-driven increase in wildfires in the wildland urban interface by providing them with the proper training and equipment. Thank you again for this opportunity. Appreciate it.

Dr. Lori Moore-Merrell:

Thank you, Donna. Chief, I appreciate those comments. I want to turn now to our leaders and see if they have any questions regarding your testimony.

Deputy Secretary John Tien:

Chief, actually, I do. You mentioned briefly in your comments, which were all terrific and really strong identification of some very specific things. And as you heard Secretary Mayorkas speak during his comments about being there to be supportive through programs, but also through funding. If, and now this is a big if, if funding was no object, what would you actually specifically focus on for your department and as a representative of the firefighting service for funding?

Chief Donna Black:

Absolutely. So we all are sitting here, and we have firefighters that are very structurally focused, and then we have our wildland firefighters. And where we need to bridge that gap is with funding and training, to make sure that all of us have the ability to help when we face these WUI situations. So again, funding and training that gets disseminated down to the smallest department, to the largest metro department that's in that wildland environment, that interface.

Administrator Deanne Criswell:

Well, let me piggyback on that for a second, Chief Black, too.

Chief Donna Black:

Sure.

Administrator Deanne Criswell:

So, I was in Colorado at the Marshall Fire maybe 48 hours afterwards, and it's not your traditional wildfire. It was really a conflagration of that community and those neighborhoods. And the wildland firefighters that we normally see come in, it was really the structural firefighters that managed that entire incident. And so, when you talk about training, what training exists already, or what training would you recommend we put forth to help that? Because we're going to see more situations, I fear, like we saw in Colorado in the future, because it was extreme drought, and it was high wind. It was just a perfect confluence of climate-related events that then drove that fire into what we saw.

Chief Donna Black:

Sure, sure. So NWCG, IAFF, IAFC all have programs for training. I think what we're realizing with these wildland urban interface fires is we have to cross-train for that fire behavior. Again, wildland firefighters are very skilled in what they're looking at and what are the risks, and then the structural firefighters know what to do. I think that bridge to training between both, because we are meeting in the middle with these terrible fires.

Administrator Deanne Criswell:

Does anything exist already for structural firefighters? Or is it something that we have to really get within NWCG to start to bridge that?

Chief Donna Black:

Yeah. We need to bridge that. There are structural firefighters that have no training at all in wildland.

Dr. Lori Moore-Merrell:

Okay. Anybody else have comments?

President Ed Kelly:

I'd just point out that it's an interesting dilemma, because as a city firefighter, I work in Boston downtown, you wouldn't think this would be a city firefighter problem. But as I was educated by what we call our RTI — responding to the interface — instructors, is that when wildfire hits the interface where people live, it's usually in rural communities. And who do they call? Who has numbers? They call the cities and say, "Can you send 100, 200, 300 firefighters right away?" So what we see is firefighters that might be in downtown high-rise districts being pulled and immediately deployed an hour or 2 out of the city to go right into this wildfire interface response. So it doesn't just affect what would be considered rural structural firefighters that need this training. It's actually every firefighter who needs this; that's what we're learning.

Senior Director Caitlin Durkovich:

Chief, technology is changing how we fight wildland fires. And in addition to additional training and resources, what data and technology do our urban firefighters need both to better understand the hazards within their particular community, but to help them get ahead of these hazards?

Chief Donna Black:

Sure. Definitely technology changes, one, how we can fight, how we can look at a fire. And then the built environment piece is so important. The community risk reduction piece to make sure that we're paying attention to where we're building homes, and that firefighters were preplanning for that and we know what's going on there. Any type of technology that's going to help us, one, learn the environment better, but then during the event, be able to keep eyes on what's going on will be very helpful. But the built environment is such an important piece to this as well.

Dr. Lori Moore-Merrell:

And sensors, I think, for ignition. Sensing?

Chief Donna Black:

Yes.

Dr. Lori Moore-Merrell:

The closer we can get to ignition, the point of ignition. So when the fire before — so locating resources quickly is absolutely imperative. So being able to sense a fire, sense ignition and move resources rapidly to engage is really key.

Senior Director Caitlin Durkovich:

Thank you.

Dr. Lori Moore-Merrell:

Right. Yes, please.

President Ed Kelly:

The other major difference is PPE. If you look at what a wildland firefighter would respond to for PPE, when we have those interface fires, we're sending our structural firefighters sometimes into high-heat environments for long durations in PPE that is not designed for that wear, and it causes significant biological impact.

Dr. Lori Moore-Merrell:

Thank you. Excellent. Alright. We'll go to our next testimony, please. Chief Quinn, please brief us on firefighter recruitment and retention efforts.

Chief Kevin Quinn:

Thank you. In my opinion, in my 47 years in the fire service, being a firefighter, I've learned, represents one of the most significant ways to give back to your community. Sadly, the number of people interested in becoming firefighters is declining. While we must study why this is happening, I can share with you the challenges that I've heard and seen from firefighters across the country. Over the past 2 1/2 years, there have been many mass retirements in the fire departments due to COVID, the pandemic, and a number of other factors such as the decline that has happened because of civil unrest, active shooters and those mass casualty events. Both career and volunteer departments are affected by this.

In order to maintain services within their communities, fire departments are requiring mandatory overtime, and they're having difficulty recruiting and retaining employees. In Minneapolis for instance, the fire department normally receives about 2,500 applications per that year, but this year they only received 700. While there has been a decline in the number of volunteer firefighters over the past 30 years, the call volume has tripled, primarily due to increased emergency medical calls. Increasing time demands, time-consuming training requirements and aging communities make finding and keeping new volunteers very challenging.

The fire service struggles to recruit and retain women and people of color. The most recent data from the Bureau of Labor Statistics reported that 11.6% of career firefighters were Hispanic or Latino, 8.5% were African American, and 1.3% were Asian. Women represent 11% of volunteer firefighters and 5% of career firefighters, according to the NFPA's 2022 United States Fire Department Profile Report based on the 2020 data.

Dr. Moore-Merrell mentioned earlier that we are here today to provide some solutions. One solution to our firefighter shortage is to invest in a national apprenticeship program to address the shortage of firefighters, and to make the fire service more diverse and inclusive. A fire service apprenticeship program could mirror the registered apprenticeship program or the industrial recognized apprenticeship program administered by the Department of Labor.

Fire departments can benefit from apprenticeship programs by attracting people who may not be interested or think that they were interested in becoming a firefighter or joining the fire service originally as a career, or in some way to serve your community. The recent grants awarded under the Apprenticeship Building America program are grounded in equity, job quality, sustainability and evidence-based practices. Diversity, equity and inclusion are vital to the fire service and our longevity, and these types of grants support those factors. The fire service occupies

a unique place in American society, trusted and often welcomed. We need to do everything we can on every level of government to attract firefighters to serve their communities. And I heard you say leadership is listening, and we thank you for being here today.

Dr. Lori Moore-Merrell:

Thank you, Chief Quinn. We appreciate that comment. And I certainly know that as I travel and talk with fire chiefs — firefighters across the country — this subject is top of mind throughout the entire country. So let me turn and see if our leaders have questions for Chief Quinn.

Administrator Deanne Criswell:

Yeah, I'll start. Chief Quinn, thank you so much. You mentioned how much our roles have changed, and we see that across our public service industry. Our emergency managers, our firefighters, our law enforcement officers, to be a public servant today is very different than what it was to be a public servant before. But it's still not a job that you do; it's who you are. That's really what drives that. And so, when you talk about increasing the number of people, how have you worked, or what kind of relationships have you had with the Department of Labor? Where has that worked for you, or where could we do improvement to make them a partner in this as well?

Chief Kevin Quinn:

Thank you. It's a good question. We do have, through the Department of Education, some very successful pockets of programs where we're involved with the high schools and we're involved with the junior colleges, but the Department of Labor, we're really looking for a national program, an apprenticeship program that brings fire individuals into the service, the fire service. And the shortage is really impacting career and volunteers, and I think we need to look at those services that are working in other areas, the industrial and some of the trades, that grab them early and often, and then they get rewarded by becoming a career firefighter or serving your community. So I think the Department of Labor is really what we're looking to develop, a brand-new national apprenticeship program for the fire service. That's the ask.

Dr. Lori Moore-Merrell:

Any other comments?

Senior Director Caitlin Durkovich:

How do you use new recruits to go out and be a force multiplier in terms of recruitment, and for them to advocate? Because we are facing shortages in many professions, but in some ways the best way to recruit are to have your folks go out and do it. What programs do you have around that?

Chief Kevin Quinn:

Current programs that we have obviously are very localized in the commitment and the connections and the partnerships that may exist, but there's so many pockets of non-programs that are out there. So we are looking at approaching the youth and getting them in early. And it's a long-term problem, but it's a better solution to that. So we do have pockets that are working very well, extremely well. And we try to

replicate those that are in existence now through the Department of Ed or whatever credits we're given. But we're really looking at this as a complete labor change in the fire service, both career and volunteer through the apprenticeship program. So we really want you to look at what's working now in the trades and let's replicate.

Dr. Lori Moore-Merrell:

Other questions? Any comments?

Chief Kevin Quinn:

Thank you.

Dr. Lori Moore-Merrell:

Thank you, Chief Quinn. So now let's move on to President Ed Kelly. President Kelly, please talk to us about firefighter cancer.

President Ed Kelly:

Thank you. And thank you to President Biden and Secretary Mayorkas and the tremendous leadership from the administration that's here today. In particular, your own Dr. Moore-Merrell for what you've done to lead the fire service. Very important part of what the governmental responses for the citizens of this country. And what we're asking the federal government to establish is a comprehensive firefighter cancer strategy that invests in research, provides access to cancer screening for all firefighters, and reduces and ultimately eliminates exposure to PFAS and other dangerous chemicals.

In 2010, NIOSH found firefighters have excess cancer risk compared to the general population for multiple cancers, including testicular, brain, prostate, colon, mesothelioma, multiple myeloma and leukemia. Recently, the World Health Organization's International Agency for Research on Cancer, IARC, declared a firefighter's occupational exposure at the highest level: a class-1 threat carcinogenic to humans. Given that there is no doubt that the higher risk is due to our occupational exposures, what we need now is to further understand the link between these exposures and cancer development.

Some critical research has been done to define the connection between exposures and genetic mutations. That research must continue and expand until we know enough about the causation of cancer and firefighters to change our outcomes. Thus far, what we are learning from the science on this matter is of great concern to our profession.

Second, we need access to health screenings for all firefighters throughout their time as a firefighter, and in retirement when the chronic exposures usually manifest. For example, firefighters have a higher risk of lung cancer, yet it's often difficult for individual firefighters to get lung screenings due to existing recommendations that do not take into account that our profession is a significant risk factor for cancer. We must direct medical professionals and insurance companies to account for this occupational risk when making coverage decisions. A comprehensive, aggressive screening program will help us find and treat cancer early, when there is a greater likelihood of a positive outcome.

Finally, we need to reduce PFAS exposures. Because of the slow rate in which they degrade, PFAS have been termed forever chemicals. None of the over 12,000 types of PFAS have proven to be safe. PFAS are in some of the foams we use to put out particularly difficult fires, and we urge action to ban the production and use of these foams as they have in European countries. PFAS accumulate in our bodies, compounds our exposures, and contribute to higher rates of several cancers and other health complications. They can pass in utero and via breast milk to the children of female firefighters. And PFAS are a driver of higher rates of testicular and prostate cancers in male firefighters.

Most concerning, our bunker gear, our PPE, the very gear we rely on to protect us is making us sick. It's manufactured with this PFAS in it. Next generation PPE must be developed, evaluated and manufactured as quickly as possible. Most fire departments cannot afford to simply replace their bunker gear, and we need to make sure that funding isn't a barrier to that replacement. We also need to plan for the safe disposal of our existing gear so we're not spreading PFAS contamination into the environment. Time is of the essence. We must act now. Together, we can ensure that other families do not experience the pain that so many of our families have felt. Thank you.

Dr. Lori Moore-Merrell:

Thank you, President Kelly. Any questions from our leaders?

Deputy Secretary John Tien:

Sort of a question, but I'll start with a comment. And I know not everything necessarily parallels to what's happening in the Department of Veterans Affairs, but I'm sure you're very aware of the recent passage of the PACT Act, and around burn pits and things of that nature, which especially in Iraq and Afghanistan, that veterans were exposed to. And one of the things that the VA found was that was a bit of a challenge, was first to get their own medical staff understanding what was going on during, but also after. And then the second was actually a recognition on the part, and this case would be for the firefighters, to acknowledge this need. So do you find that both during and particularly after, based on what you just said, President Kelly, that your firefighters are appreciative of this need to go get these physicals, to get the screenings? The first thing has got to be to have them available. I get that, and we'll look to see how we can support that. But how is the culture in terms of seeking the proactive care?

President Ed Kelly:

We've gone — as a union, we've developed recommended protocols for fire departments to adopt which require certain levels — in many cases higher levels — of screening for not only cancers but other physiological screenings. So, we have aggressively pursued earlier detection, and that has — I was just with one of our young firefighters that was just diagnosed at 30 years old, and he went for his annual physical, which was something that the union fought to put into our contract. When he went for his physical, the bloods showed that he needed further testing, and they unfortunately diagnosed stage 4 liver cancer that had spread to his lymph nodes and his heart. And so, he's in our prayers. So, I was with him just 2 days ago.

So, we are aggressively pursuing different ways to make sure our members are aware. We've done a good job educating our members to be aggressive with their

own physicians, their own primary cares, make sure that they're getting those more advanced levels of screenings, if they can. Oftentimes without other demarcations, the doctors can't prescribe that level of screening, which is one of the challenges that we mentioned. But the VA is very much someone that we look forward to potentially partnering with in the future.

Deputy Secretary John Tien:

Let us know on the partnerships. We'll be supportive to that. Just like what the administrator's talking about labor and then education as the chief is saying. Looks like Chief Black was going to comment here.

Chief Donna Black:

Yeah. Mr. Secretary, just to add on that, it's very difficult in the volunteer combination world to have the same requirements for physicals. So it's a real challenge. It's funding, it's availability. So there is a challenge in the volunteer combination world to get physicals to start with, or to pick up on any potential issues.

President Ed Kelly:

One of the other avenues that we're pursuing is a partnership with the American Cancer Society, so that we are hopefully educating oncologists and primary care physicians, that when they have patients that are firefighters, that they are at an extreme risk, based not only on a lot of other data and research, but certainly IARC's declaring it a class-1 carcinogen. Firefighting.

Deputy Secretary John Tien:

That makes a lot of sense.

Administrator Deanne Criswell:

And President Kelly, you and I talked before we came in here about the increasing number of younger firefighters that are now being diagnosed with cancer. And in your testimony, you talked a lot about the gear. So what can be done to help develop the gear that is needed? What steps do we need to take to make sure that they have gear that will protect them from heat and fire, but also not be a contributor to this early diagnosis of cancer?

President Ed Kelly:

Well, I'm glad that you mentioned that we are seeing more and more younger firefighters diagnosed with cancer. I mentioned Mat Troy, who is fighting stage 4 liver cancer. If you went across the street from him and up 4 houses, Danny Ranahan, another firefighter, has Hodgkin's lymphoma that he's been fighting for 2 years. We have 4 firefighters on that street, 2 of them 30 years old, fighting cancer. Another firefighter in my district got diagnosed at 30 years old with non-Hodgkin's lymphoma. Younger and younger diagnoses we're seeing across the fire service.

And one of the factors that we can't avoid, the obvious exposures we're getting from our bunker gear every time we go out the door. It's mind boggling that we're in this situation. Defies logic. But if we don't work with the manufacturers, work with the NFPA, who currently their standards committee is drawing up new standards,

and develop and invest in the next generation of bunker gear and PPE in general, we are just poisoning our fire service, and beyond. We are taking that gear into people's homes every single day. Every single day. And that is just spreading contamination throughout the environment.

So we have to invest in it. We have to work with our manufacturers, work with the NFPA, develop new standards as quick as we can, turn around PFAS-free PPE, and find a safe way to dispose of what will be, ballpark, north of a million sets of contaminated gear, and replace it.

Dr. Lori Moore-Merrell:

Thank you, Chief Kelly. Any other comments on the subject? Any other questions?

Our next testimony is about another health impact that firefighters experience. PTSD affects far more of our ranks than we even know, and unfortunately often ends in death by suicide. Chief Mitchell, please speak to us about the impact of the job on firefighter mental health.

Chief Ernie Mitchell:

Thank you. As my esteemed colleagues have discussed, preventing and mitigating fires is crucial to protecting the lives of citizens, and protecting firefighters from a toxic environment is vital. Today I want to share another issue affecting families and fire departments across the country: the increased number of firefighters dying by suicide and suffering from behavioral health issues. It is our position that we need to provide behavioral health resources and suicide prevention initiatives for all firefighters. According to organizations tracking the issue, the number of firefighter suicides is estimated to be at least 100 per year. Additionally, the Ruderman white paper on mental health and suicide for first responders noted that the suicide rate for firefighters is 18 per 100,000, compared to 13 per 100,000 of the general public.

We are responsible for protecting those who protect us by investing in their mental health, including collecting accurate data. According to evidence-based research, behavioral health awareness campaigns provide effective intervention methods. It is our collective responsibility to provide those who serve with the tools they need to help themselves and each other.

The fire service, as well as our brothers and sisters in blue, are both dealing with occupational-related behavioral health issues. The FBI launched the Law Enforcement Suicide Data Collection on January 1st, 2022, to help improve understanding and prevent suicide among law enforcement officers. We applaud this effort and see this data collection as a model for what is needed in the fire service. Federal agencies have poured millions of dollars into addressing the suicide problem for our colleagues in blue, but there is no comparable effort for the fire service. As policies and programs are developed by federal agencies on first responders' behavioral health and other topics, it is time to involve the fire service in federal policy development on an equal basis with law enforcement.

Nearly every cabinet-level department in the federal government plays a role in addressing fire prevention in America. Each has programs to address fire safety issues, in keeping with its specific mission. Our fire administration must be elevated to adequately represent the 1.1 million firefighters serving in this country. Where relevant issues touch law enforcement, emergency medical services, and the fire

service, it is essential that the federal government gives equitable consideration to each discipline. Initiatives addressing sustainable infrastructure, resiliency in the built environment or public health initiatives cannot operate in silos. Public safety must be approached holistically, which requires equal support to all first responders: the fire service, EMS providers and law enforcement.

Dr. Lori Moore-Merrell:

Thank you, Chief Mitchell. Any questions from our leaders?

Deputy Secretary John Tien:

Can I offer a quick thanks and then a question, and maybe I'll leave the resilience and the infrastructure parts to my colleagues to my left? Number 1, Chief Mitchell, thanks very much for your prior service as a U.S. fire administrator. I think 2011 to 2017, as I recall.

Chief Ernie Mitchell:

Yes.

Deputy Secretary John Tien:

Right. So thank you very much and for continuing your work in a mission of service to not only your community, but to America.

This is somewhat connected to what President Kelly just spoke about when we discussed the VA, and you just mentioned that every cabinet has a role in terms of fire prevention. But specifically around the piece that you began with around suicide prevention, and I spoke about at the very beginning, which obviously this is true endemic in both the active duty, the Reserve, National Guard and the veterans community. Have you had any opportunities or any success in anything you want to reinforce, or perhaps opportunities to partner with the VA Department of Defense, who clearly are going through and have been going through really since post-9/11, an increased suicide rate among veterans in active duty?

Chief Ernie Mitchell:

Not at an extensive level. There are some early initiatives. We are talking to active military about things in that same sphere of how we can benefit the firefighters in this country. But there's a level of scale, and while there are excellent programs and certain areas and communities around the country to get it to go nationwide, what we are up against is typically just that lack of resources to make it happen to the scope that it needs to happen. Because it's just a lot of folks to educate. There is a stigma attached to it at the personal level, inside. And then systemically, we are not yet able to apply the information and knowledge, and even diagnosis and treatment nationwide. But yet there are efforts, excellent efforts for instance by the IAFF. And President Kelly and their organization are doing that. The Fallen Firefighters Foundation is also working with others, the fire chiefs. But we need to elevate it, and that comes with the additional resources.

Deputy Secretary John Tien:

Thank you.

Senior Director Caitlin Durkovich:

Chief, thank you very much for your service. And my question to you is, is the model that would work for the career fire personnel different than the model that we need for the volunteer firefighters?

Chief Ernie Mitchell:

There are levels to it. As was mentioned earlier, there's some difficulty, while all need an elevation in the resources and the training, there are additional challenges for the volunteer community, because of the other demands on their time. But there are challenges specific to career as well, because there are a need to fill behind people that are in training and treatment. So they can all — but I think 1 package — they're essentially doing the same job. It's just that it's modeled in different ways. So I think yes, it could all be approached in a very similar way.

Chief Kevin Quinn:

May I follow up for that? Career-wise, they've got employee assistance programs. In the volunteer ranks, we do not. But yesterday in fact, we just broadcast a new hotline for the volunteers and their families. So we are working on the networks, but it's a different model, as Chief Mitchell just said. So thank you.

Administrator Deanne Criswell:

And I think Chief Mitchell, I just want to add on to this too. The stigma you mentioned is important, and we've really focused even in the emergency management community, and how do we de-stigmatize the need to get additional help. And I just wanted to share something that I was part of during our response to COVID-19 in New York City with the hospitals. And so, the hospitals had a program to help destigmatize this, and they called it Helping Healers Heal. And so, they had 1 very specific for the nurses and the doctors. But during COVID-19, to piggyback on what Deputy Secretary Tien said, we actually brought in combat stress mental health teams, and they adapted their program because the words that we were getting, it was as close to a battlefield as anything that they'd ever seen.

And so, we took the combat stress training that DOD had, and then combined it with the health training to create a very specific program. And so, I think listening to you speak, we really want to be able to partner with you on doing something similar. It's great to have the resources for people to call, but I think the training piece, you might agree, is where we need to help destigmatize that.

And I think that there are some good models out there. And I don't know if you had any additional examples of models like I just talked about, but I'm committed to working with Dr. Moore-Merrell here on the things that we can do to support the U.S. Fire Administration developing this kind of training that we can get out to our firefighters.

Senior Director Caitlin Durkovich:

And I would just add training also that is culturally sensitive too.

Administrator Deanne Criswell:

Yeah.

Chief Ernie Mitchell:

Yeah. Yes. And it's interesting you said it. It's because I think when we talk about the stigma and we talk about there's a tremendous need for additional education and culturally sensitive clinicians. And all of that helps. And for instance, in the fire service, the Foundation has created an arm called the First Responder Center for Excellence to deal largely with behavioral health, and partnerships and the incentivizing partnerships similar to all of us getting together, incentivizing partnerships across industries and across institutions I think would largely support this work like with the — and getting it — making it more acceptable to all. We have what we call Stress First Aid, similar to what you just mentioned. But these things are again, growing. They just need some more focus and a booster shot, if you will, no pun intended, to infuse them with the energy and the resources to make it take off. But thank you for that.

Dr. Lori Moore-Merrell:

Yes, thank you. And President Kelly, you had something.

President Ed Kelly:

Yeah. Just to piggyback on the issue, there was a book written about the fallout of the Chernobyl disaster, and what they studied and learned was the greatest health impact from the Chernobyl disaster was behavioral health. And when we look at the challenges that we have as a society, but certainly those of us that work in a profession that has acute stresses, we've seen in our ranks what has become a very serious factor for us.

And our response has been to — we've developed our own Center of Excellence for Behavioral Health right here in Maryland. We're in the process of opening up one on the West Coast in Temecula, California, with specialized training focused on post-traumatic stress injury. Because we define it as an injury because you can recover from it. And we also have over 8,000 peer support-trained members that will deploy in places like Hurricane Ian last month.

And when we have critical incidents where our members are exposed to very acute stresses, that we can get them educated and trained. We're also working through our behavioral health team to educate clinicians so they get the training they need to identify specific needs from our profession. And another interesting one this morning is our service dogs are — we're in our program more and more utilizing canines, which have proven through studies and more and more studies to be a tremendous value in high-stress situations. And we are dealing with trying to make sure that we have the funding for them, get the dogs the treatment that they need. And that was one of our issues this morning, talking to Dr. Whu, who's our head of health and safety, our chief medical officer. So those are challenges that we have that we deal with, that we're working, that we fund as the union, trying to get help in there that we could use assistance through grants to try to provide those services to our members and their families.

Administrator Deanne Criswell:

Just before you go on, Lori, just one more follow-up to what President Kelly talked about with cancer and Chief Mitchell on the mental health needs. You heard the secretary talk about the Office of Health Security. How can this office, and it's

new — it's a new office, right? How can we tap into that? How can it be beneficial to help address some of these issues?

President Ed Kelly:

Well, certainly with the resources that the federal government brings to bear, there are so many needs that the Health Securities mission would synergize with what we are trying to accomplish as leaders in the fire service from all sides to try to make sure that we are protecting our greatest asset, which is the people we send in when people need help. And that's a wide mission. And we certainly welcome all the help we can get.

Dr. Lori Moore-Merrell:

Right. Excellent conversation. Did you have something, Chief Mitchell? Please.

Chief Ernie Mitchell:

Not to be — not to just repeat, but I think just coming together. Like you said, it's new, but can we sit down and talk about how we pull together on this? I know there was a behavioral health conference for the fire service a couple of years ago. And I can remember just letting people know what's going on. You sit there — I sat there listening to clinicians talk about — telling us that we are an at-risk population, the fire service. And then I heard a description of symptoms, and I go, "Oh, maybe that's what was wrong with me back then." But I just think we need to get together and explore. It's fairly — relatively new for us to really tackle, but I'm just — thank you that it's stood up and that that's available.

Dr. Lori Moore-Merrell:

Excellent. Thank you, Chief. So we're going to wrap it up with Mr. Pauley. So Mr. Pauley, as we're nearing the end of this roundtable, please share your thoughts on the 1 thing that I mentioned earlier. There's 1 thing that we can start immediately, and I'd love to hear your thoughts on how do we reduce death and injury from fire.

Mr. Jim Pauley:

Well thank you, and good morning, and thank you for your leadership, and thank you for taking the time to be here this morning. There are more than 300 codes and standards that influence fire and life safety in the built environment in the United States. And we can create safer communities by assisting local jurisdictions in implementing and enforcing these codes and standards. And this will in turn help keep Americans safe from the menace of fire as described by President Harry S. Truman in 1947.

Now, state and local governments are responsible for promoting the use and enforcement of current codes and standards, but the federal government can help. It can help by incentivizing compliance and providing funding for local jurisdictions for code implementation, inspection and enforcement. There's also proper use of life-saving technology, things like smoke alarms, carbon monoxide alarms, automatic fire sprinkler systems. All of these have been proven to save lives, and all modern buildings require these systems, and the fire codes need to be consistently and aggressively enforced to back up these systems.

In addition, we strongly urge that all federally funded construction projects be required to the most current fire and building codes. And that federal housing assistance needs to be tied to the compliance of the most current fire life safety, electrical and building codes. Fire disproportionately impacts our most vulnerable populations: older adults, children, people of color, low-income populations and people with disabilities. This is an equity issue. Safe housing and affordable housing should not be mutually exclusive concepts.

Nearly a million households live in public housing units in the United States. Fire safety improvements in public housing must receive heightened attention. In 1992, Congress passed the Federal Fire Safety Act requiring newly constructed multifamily housing units to have fire sprinklers. HUD estimates that approximately 570,000 multifamily public housing units are in inventory today constructed before the sprinkler requirement, and of which today still a significant portion lacks sprinklers. We have to take investments in retrofitting public housing with fire sprinkler systems. An NFPA study found that in buildings with sprinkler systems, the civilian fire death and injury rates were 89% and 27% lower.

Additionally, HUD needs to ensure that all public housing units are equipped with working smoke alarms, and that they're installed and maintained under the relevant codes and standards. Nearly 3 out of 5 deaths are caused in properties without smoke alarms or that do not have a working smoke alarm. HUD should provide resources to public housing authorities to retrofit these housing units with either hardwired smoke alarms or the installation of tamper-resistant, long-life, battery-powered smoke alarms.

By embracing these current fire and life safety codes and standards at all levels of government, we can make great strides in addressing the fire problem in our nation. Together I know we can create safe communities by implementing and enforcing codes and standards, including and especially in the wildland urban interface and underserved and vulnerable populations as I talked about, in affordable and fire-safe housing.

Dr. Lori Moore-Merrell:

Thank you, Mr. Pauley. We're going to break there and see if there are any questions for Mr. Pauley.

Administrator Deanne Criswell:

So, I really appreciate your testimony there. FEMA's been — we're doing a lot of work to just advance the adoption of building codes. And I think as you would know, it's just about 40% of the counties across the nation have adopted the latest building codes. And we've released our first-ever national building code strategy that complements the initiative out of the White House to help get communities to understand the benefits of adopting these codes and how it actually saves lives. From your perspective with the NFPA, is it about the same percentage that have adopted the fire codes? Or what do you see as the biggest limitation in these communities adopting the most current fire codes?

Mr. Jim Pauley:

So, it's a great question. The percentages do tend to follow because generally those code adoptions kind of go hand-in-hand at those jurisdictions. So, whether you're

talking electrical codes, fire codes or building codes, you can see similar patterns. Generally, adoption of the code can move forward, but one of the most lacking areas is actually enforcement of the code after it's adopted. And this is where we're seeing a real decline in available inspection resources, in training. As the fire service has talked about, not having people coming into the fire service, this is happening in the inspection and enforcement community as well, where people are not entering into those professions, and we're seeing a real drop in what inspection and enforcement looks like locally.

The other challenge on the adoption side, and I'll use the sprinkler example as one. The national codes today require sprinklers in every single-family dwelling that is built today. But as those codes get adopted and used at the local level, generally pressures from the building industry write those sprinkler requirements out at the local level, and so we're building houses without this life-saving technology that's being in place. And that's another area that I know incentivizing those local jurisdictions to move to the latest codes. As FEMA has done, certainly in the flood-prone areas that we have seen, and in harder construction in the hurricane areas, we need to do that same thing as we associate it with fire safety, and apply those same incentives. DOE did it with energy codes, as the incentives that would go to the states using the latest energy code would be applied. We should be doing that with the electrical code, with fire codes, and continue with building codes.

Dr. Lori Moore-Merrell:

Any other questions for Mr. Pauley? All right, Jim, will you please tell us about Fire Prevention Week, and this week, and why it's significant, please?

Mr. Jim Pauley:

Well, thank you for that. And it is important to note, as was mentioned, this year marks the 100th anniversary of the National Fire Protection Association's Fire Prevention Week. And this year's theme is Fire Won't Wait, Plan Your Escape. And this theme clearly applies to all communities, including those that are in the urban interface. And each year the president of the United States signs the Proclamation for Fire Prevention Week signaling the federal government's support of saving lives and property. And it is my understanding that President Biden has also signed the proclamation for this 100th anniversary of Fire Prevention Week.

Senior Director Caitlin Durkovich:

Mr. Pauley, that is correct. I happen to have with me today a replication — a replica of the 2022 Fire Prevention Week Proclamation that was signed by President Biden. And if you would allow me, I would now like to read a portion of the proclamation.

"For 100 years, Fire Prevention Week has provided an opportunity to educate all Americans on the actions they can take to keep themselves and their loved ones safe from fire. No matter what time of day or night we call for help, our first responders across the nation risk their own lives to protect us and the ones we love. During Fire Prevention Week, I ask everyone to learn more about how we can better protect each other by practicing fire safety, and taking time to think about what it means to have a fire-safe environment in our homes, our businesses, our neighborhoods, and across our communities.

Fire is truly everyone's fight. I ask all Americans to renew your efforts to make our great nation a safer place by learning more about fire safety. Together we can make a difference and make America a safer place for all. Fire is a disaster we can prevent. Now, therefore, I Joseph R. Biden, Jr., President of the United States of America, by virtue of the authority vested in me by the constitutional laws of the United States, do hereby proclaim October 9th through 15th 2022, as Fire Prevention Week."

Dr. Lori Moore-Merrell:

Thank you so much, Director Durkovich. I'd now like to invite the members of our roundtable to gather just behind our 4 leaders, if you'll remain seated, we're going to have a photo opportunity to mark this point in time. So we will gather here, and you can see we've practiced that very well, right? Yeah. That — so we'll take — if you'll just lower — grab your mics and just lower the — there we go.

Thank you so much. So this concludes our National Roundtable portion of the 2022 U.S. Fire Administrator's Summit on Fire Prevention and Control. I want to thank Secretary Mayorkas, Deputy Secretary Tien, Administrator Criswell and National Security Council Senior Director Durkovich for your time and attention today. We are so grateful you've heard about the critical issues that are facing the fire service, and we know that you will consider these challenges as you continue to serve our country.

Thank you to the members of our roundtable who brought your testimony today, and to our audience who were here to observe. We have lots of collaboration, and I am grateful for you all coming together with one voice today. So, I'd like to ask our observers in the audience to please remain seated while our roundtable participants are escorted out. We're going to depart. I'm going to ask Commissioner Adam Thiel of the Philadelphia Fire Department to come and moderate a continued discussion with you, our observers, about the challenges that were just presented. And you will continue to document the content of the roundtable discussion.

State of Science: President Joseph Biden

FOR IMMEDIATE RELEASE

Oct. 11, 2022

REMARKS BY PRESIDENT BIDEN
AT THE SUMMIT ON FIRE PREVENTION AND CONTROL

South Court Auditorium
Eisenhower Executive Office Building

2:56 p.m. EDT

THE PRESIDENT: Doctor, thank you very, very much. It's very gracious of you. I appreciate it. And the U.S. Fire Administration is doing a great job.

Look, I want to take this opportunity to thank you all, to — for an opportunity to speak at this summit.

And it's wonderful to see so many good friends, you know, sitting out there looking. Eddy — Ed Kelly. And I think President Black is there. Kevin, I hope — I — I can't quite see what — I can't see you out — in the front there, I think.

And I actually wish I could be there with you in person. And you know I mean it.

You know, and I've — I've had to pay respects with you this past weekend on the National Fallen Firefighters Memorial.

30 years ago — God, it seems like 30 years ago. 30 years ago, I was the original co-sponsor with Paul Sarbanes and others of the National Fallen Firefighters Foundation Act. And over the years, I've spoken to — at too many — too many funerals for fallen firefighters. From the national events like the memorial of Arizona 19 Hotshots in 2013, to the individuals in my home state that unfortunately are too numerous to name.

And each one — each one of you is a hero to the community. You've touched people's lives. So I'd — I'd like to take a moment at the top here to honor the lives we've lost of those in the past 2 years, including from COVID: 135 on-duty firefighters in 2021, another 77 to date in 20 — 2022.

And it's a — it's an acute reminder of the risk firefighters bear and, quite frankly, of their bravery. You're the only ones who run toward flames and not away from them when that fire bell rings.

And you — look, you know, many of you — many of you heard me say before: First, God made man. Then he made a few firefighters. God made man, and then he made a few firefighters.

I grew up in Claymont, Delaware. And across — I went to a little school called Holy Rosary grade school across from the Claymont firehall. And all my buddies, they came — either became a firefighter, a cop or a priest. I wasn't qualified for any of them, so here I am.

But — (laughs) — you know, it's truly amazing that an estimated 1,041,200 local and municipal firefighters — 65% of you are volunteers. And I'm proud to say in Delaware, in my home state, it's 98.3% of all firefighters are volunteer firefighters.

And by the way, I know you're all having trouble keeping — because of COVID and because of the — the schedules people have these days — getting — attracting enough volunteers to man — man all the stations. You're the heart of the community.

You know, people don't appreciate you until they need you. But then they do, and you're always there.

Firefighters have saved my life and the life of my family. I want to just tell you for a moment — I know a lot of you know from — if anyone is from Delaware there knows — you know, way back in 1972, before I got sworn in, my family — my wife was Christmas shopping with my 3 children and — and a tractor trailer — they got in an accident — broadsided, and killed my wife, killed my daughter. And my 2 boys, who were then almost 3 and almost 4, were on top of their dead sister and mother. And it took the Jaws of Life from my local fire department volunteers to get them out and get them to the hospital. And it saved their lives.

In addition to that, what happened was — I was — I was doing "Meet the Press," and lightning struck a little pond behind my house, came up through the ground, into the air conditioning system. Ended up generating this thick, black smoke literally — literally that — of those proportions. And from the basement to the third floor, the attic, everything was ruined. And the kitchen floor — we almost lost a couple firefighters, they tell me, because the kitchen floor was — the — burning between beams in the house, in addition to almost collapsed into the basement.

And then — and then I was — I got rushed to the hospital for a — it turned out to be almost a 9-hour operation with a cranial aneurism — in the middle of a snowstorm by my fire company. They got me down. They saved my life. And so, I owe you. And so many other Americans owe you as well, so many families.

The only thing that saves lives of a firefighter are more firefighters. The only thing that saves lives of a firefighter are more firefighters. That's why, as a senator and as a — when I was out of office and then back as president, we do everything we can to support and pay for firefighters — more firefighters.

You know, and you're there for most people who've just lost everything. And by the way — again, to ad-lib a second here — I — you know, you're also — what people don't realize, you're the same folks who are there holding the boot in a corner to raise money for the people who just lost their home. Not a joke. That's what you do. That's what you do.

You're the ones who line the Little League fields. You're the one — you're just — anyway, you're an incredible group of individuals.

You know, in Delaware, we used to say — back when I first started running as a kid, I'd say, "There's 3 parties in Delaware: Democrats, Republicans and firefighters." And thank God I had the firefighters.

I just got off with the president of the Delaware volunteer fire company who said, "Joe, do you remember I was in your first campaign in 1972?" (Laughs.)

Anyway, you're on the frontlines for emergencies and disasters all across this great nation, from the devastating wildfires in the West to the thousands of fires that local firefighters respond to every day, and response to Hurricane Ian in Southwest Florida.

And, by the way, I point out that I've flown over just — just the last 18 months, flown over most of the major fires in the West. More timber, more housing has burned to the ground than all of the landmass in the state of New Jersey. That's how much has been lost.

And, you know, I went down to Florida to see the response last week. Firefighters helped rescue thousands of survivors and answered the call — not just for fires, just answered the call. And in some cases, their own homes and firehouses were damaged, destroyed or washed away. Because that's who you are. When tragedy strikes, you suit up.

And when the impacts of climate change are becoming increasingly evident, we're calling on you more and more and more.

Extreme heat and prolonged drought have turned wildfire season into wildfire years. And local firefighters are being called in more to respond to the fires in the wildland urban interface where we're moving out into the forest areas to develop and it becomes local and federal.

So I want you to know that my administration is doing everything we can to make sure you have the resources you need to do your job as safely and effectively and efficiently as possible.

You know, we invested \$350 billion in the American Rescue Plan to help states and local — states and cities keep first responders on the job, including firefighters on the job when — during COVID-19.

And between the American Rescue Plan and my 2023 budget request, we've increased federal firefighting grants by \$320 million, which includes money to fund 1,200 more local firefighters in the field, hundreds more emergency response vehicles, and thousands — thousands of sets of turnout gear. A pioneer in research on issues from — including like cancer prevention.

You know, it's close to my heart. Cancer is a leading killer of firefighters. Toxic substances you've been exposed to as part of your job are almost certainly — certainly connected to those cancer diagnoses. And we're doing — we're going to do something about it.

The Cancer Moonshot is bringing together every part of our government to cut cancer death rates in half and to end cancer as we know it, including by addressing environmental and toxic exposures to prevent cancer.

We just passed national legislation — national legislation to deal with the burn pits in Afghanistan and Iraq, and — that so many of our soldiers — we finally got it passed so that we can care for their families if they've been — lost their lives or care for them, in fact, if they — if they're going through this.

We created a special claims unit at the Department of Labor to ensure that they're processing federal firefighters' cancer claims quickly.

And we're also taking (tackling) PFAS — the so-called "forever chemicals" that for years have been in your gear, your equipment and the suppression agents that you depend on to do your job. I'm determined — I'm absolutely determined to make sure you have the gear that protects you without making you or your family sick.

And I'm urging Congress to send to my desk the Federal Firefighters Fairness Act — let me say it again: the Federal Firefighters Fairness Act — which are going to help federal firefighters and their families assess critical worker compensation resources, including making sure that several forms of cancer are presumed to be caused — presumed to be caused by the firefighter's job.

And I'm also — I'm also proud that last November, I signed into law Protecting America's First Responders Act, which extends the benefits under the Public Safety Officers' Death Benefits Program to the families of firefighters killed in training and made it easier to qualify for permanent disability.

The final point — I'm sorry to go on so long, but I feel passionately about this. The final point I'd like to make today is that we're doing everything we can to ease the burden on our firefighters by preventing fires. This is the 100th — hard to believe — it's the 100th anniversary of Fire Prevention Week. And the landmark legislation I've signed into law includes historic investments to reduce the risk of fire.

The Bipar- — the Bipartisan Infrastructure Law includes significant forest management, increases community resilience and — to wildfires, and harnesses new technologies to keep communities safe. It's also repairing vital infrastructure and — firefighters and other first responders rely on to quickly get to the — to those — those in need.

By the way, we're talking about the — all the bridges that are in tough shape. I was out in western Pennsylvania. There was a fire station, a bridge over a creek and a school not far from there. They have to go — I think it was 7 miles, if that — they couldn't go across the bridge because it wasn't strong enough to maintain and ha- — excuse me — handle the firetruck.

You know, the Inflation Reduction Act enables us to take unprecedented steps to confront climate crisis, which is going to protect forest health, reduce fire risk and supercharge our clean energy future.

We're also maximizing protections for people when fires do break out, through a national initiative to help states, local, and tribal and territorial governments adapt and adopt the most up-to-date building codes that reflect the threats from the climate — from climate change.

We're using the Department of Defense's satellite imagery to detect wildfires in their early stages so firefighters have a better chance to suppress the fires early before they can impact on local communities. And we're working to help it — we're working to help educate the public on basic fire safety, like preparing fire escape plans, testing smoke and carbon monoxide alarms monthly and replacing those alarms every 10 years. This is the simple steps we can take to save lives.

Look, on behalf of my own family and every American, I just want to close by saying again: Thank you, thank you, thank you. Fires will always be a fact of human life. And when the worst happens, when those alarms go off, when everything and everybody you love is in danger, there's no better sight in the world than that firefighter who's ready to go to work.

So, thank you for being who you are. Thank you for all the heroes you represent. You are — you are on the alert and on call in communities all across this country right now as I speak.

So, God bless you all. And may God protect our firefighters. Thank you for letting me have a chance to talk to you. I wish our — I literally do wish I were there with you. Thank you. And thank you, Lori.

3:09 p.m. EDT

Source: <https://www.whitehouse.gov/briefing-room/speeches-remarks/2022/10/11/remarks-by-president-biden-at-the-summit-on-fire-prevention-and-control/>



State of Science: Opening remarks from U.S. Fire Administrator Dr. Lori Moore-Merrell

Good afternoon. It is so exciting to see all of you here, gathered for this occasion. It's been a very exciting morning already, and now we continue on this occasion. So I'm very proud to be able to kick off this afternoon's event of the State of Science of the U.S. Fire Administrator's Summit on Fire Prevention and Control.

But as we kick off this afternoon, there are many of you who were not able to participate this morning in our roundtable discussion. And so, I want to share not only some photos with those in the room, and those who are joining us live, welcome to you as well, but I want you to see some photos from the morning, and I want to recap just a little bit of the discussion. Because this morning marked a historic event, where we had leaders who were here to listen.

The roundtable discussion had representation from the White House, with Senior Director Caitlin Durkovich from the National Security Council Resilience and Response. We had with us virtually the Homeland Security Secretary Mayorkas, to join us to offer comments. We had also the Deputy Secretary of Homeland Security present to listen. We also had the FEMA Administrator, Deanne Criswell, who is from our ranks, here in the room to listen. We also had members, prominent members of the fire service, to represent you. I want those members who are present with us this afternoon to stand as well.

So, first of all, Chief Donna Black was here to offer comments on your behalf as the president of the International Association of Fire Chiefs. Chief Kevin Quinn from the National Volunteer Fire Council, General President Ed Kelly from the International Association of Firefighters, Chief Ernie Mitchell represented the National Fallen Firefighters Foundation, and as a former U.S. fire administrator. And Mr. Jim Pauley, president and CEO of the National Fire Protection Association.

I will just say, they represented you well, as the leaders represented this morning spoke with one voice. All of those people representing those major organizations did not speak for their organization. They spoke for you, one voice of the fire service. They talked about partnering. They talked about answering and stepping up to tackle challenges currently facing the fire service. "We must address these issues," is what Deputy Secretary Tien said. "We must address them with urgency," from Secretary Mayorkas, as he expressed the department's commitment to fight for resources that you need. He said that you should not have to struggle for the resources you need to save lives. Deputy Secretary Tien also offered that DHS will have a partnership in this mission.

The FEMA administrator told us that leadership is listening. "Together, we must define solutions necessary to protect all responders. The work today is an investment in our future and the future of the next generation of the fire service." And Director Durkovich emphasized that firefighters are foundational to the resilience of our communities.

The fire service leaders each represented an issue and a fire problem or a challenge to firefighter health and safety from a much wider lens. The roundtable participants highlighted some of these issues. First, we must provide all firefighters, both career and volunteer, with the training and equipment to meet the challenges they now face due to climate change and the threat of wildfire in the interface. There was an

opportunity for the fire service to take a leadership role in helping communities prepare for the effects of climate change, and the impact on our responders. We also discussed the decline of firefighter recruitment and retention. One solution suggested is to invest in a national apprenticeship program, to address the shortage of firefighters and to make the fire service more diverse and inclusive.

Another issue discussed is the need to create a national comprehensive firefighter cancer strategy, considering the link between cancer and on-the-job exposures. We have a need for firefighter health screenings, and we must reduce PFAS exposure, particularly in our gear. The next generation of PPE must be developed and manufactured and the replacement gear disposed of safely. The point was made by General President Kelly that early detection is key in firefighter cancer diagnosis. We are responsible for protecting those who protect us. We talked a lot about mental health. Chief Mitchell noted that there's still a stigma associated with behavior health issues, and we must develop a holistic approach to help all our responders.

Finally, we discussed the need to make safer communities by enforcing codes and standards. Jim Pauley said that safe housing and affordable housing should not be mutually exclusive. Code adoption moves forward, but enforcement is where the problem begins. We must incentivize local communities to ensure that they are using the latest building codes.

And finally, the 2022 Presidential Proclamation for the 100th Fire Prevention Week was presented by Director Durkovich, and it had been signed by President Joe Biden.

The speakers' testimonies were consistent with what you will hear this afternoon, during the State of Science. Each speaker that will come forward today will bring a perspective on where we are on the current issues, and where we face gaps in particularly addressing the fire problem and firefighter health and safety in our country.

After the National Roundtable, Commissioner Thiel this morning led a discussion of the observers in the group where we consistently recorded the feedback beyond the roundtable. Today, we will be recording that same conversation as we move through the afternoon. So, everything that is said in this room today will become historic record for the proceedings of this summit.

So, this was but a brief snapshot of the morning, and with feedback already from the participants, the observers this morning, it was a historic event. I can't begin to tell you how very important this summit is. We've identified some very real issues, and we have a lot of work yet to do. I really want to thank everyone for being here to step forward and to participate in the morning events, and now we've expanded it in the afternoon events with not only our audience in house, but to our virtual audience who is watching live this afternoon.

Now, I'd like to introduce a very good friend. Ron Siarnicki is the former fire chief of Prince George's County, Maryland, Fire and EMS Department. He's been an executive director of the National Fallen Firefighters Foundation for the past 21 years, and he is a true champion of firefighter safety. I can tell you that this partnership between the USFA and the National Fallen Firefighters Foundation is what has led us to where we are today. Without that partnership, USFA would not have been able to pull off this event. Chief Siarnicki, if you will join me, please.

State of Science: Opening remarks from Chief Ron Siarnicki, Executive Director of the National Fallen Firefighters Foundation

Good afternoon. First of all, thank you for joining us for today's State of Science. As part of the United States Fire Administrator's Summit on Fire Prevention and Control, it is a real privilege and honor to support Dr. Lori Moore-Merrell's efforts to reduce the impact of fire in America. The foundation is very proud to work side by side with the United States Fire Administration on so many projects, but especially in providing this opportunity for the American fire service, and more importantly, the individuals who are working to keep our communities safe.

What better place to gather for this event than here at the National Fire Academy, only steps away from the National Fallen Firefighters Memorial. And for those of you watching, it's at Emmitsburg, Maryland. 2 days ago, the nation gathered here to honor 148 firefighters who made the ultimate sacrifice in service to their communities. Every year after the memorial, I reflect on what we as an organization and as an industry and as a nation can do to reduce the number of families, friends and colleagues who have been affected by the loss of a firefighter. All of us owe it to those who have lost a firefighter to do all in our power to prevent another firefighter from dying, and to prevent the public from suffering any loss from such an occurrence. To those of you in the audience today and watching virtually, we hope the presentations motivate you to get more involved in supporting solutions to address the fire problem in America.

As I look out into the audience, I see many friends and colleagues from our national fire service organizations and research institutes who I've had the pleasure of working with for the past 21 years. I also see, though, 100 firefighter recruits from Prince George's County, Maryland; Loudon County, Virginia; and the District of Columbia. All of you recruits, please stand. Please be seated. They won't sit down unless you tell them. I asked you to stand because you are the future of the American fire service. And being a part of this historic event is going to set you on a journey to learn so much about what's happening in your industry.

And I would like to take a second to speak to those recruits personally. You're beginning a very significant journey in a pivotal time in our fire service history. I have to say, over my fire service career, I have seen new technologies making it easier for firefighters to stay out of harm's way. The knowledge of fire behavior continues to change, and how we operate on the fire ground are lessons that have been learned. And we now know more about the actions we can personally take to decrease our chances of firefighter injuries and deaths. Each of you recruits are now responsible for learning as much as possible about the distinct aspects of being a firefighter during your fire service career.

A longstanding value of the fire service is to care for your brothers and sisters. It is your responsibility to ensure you're doing everything possible to leave the fire service better than how you found it. I have to say, your department leadership supported you in being here today, and we thank them for making that opportunity possible, and I ask that you do the same.

The State of Science presentations would not be possible without the commitment of the United States Fire Administration. Our leader, Dr. Lori Moore-Merrell, who's been a longtime champion for firefighter health and safety. I have to say, every day,

Dr. Moore-Merrell demonstrates her commitment to protecting the nation from fire, helping firefighters here learn about the training tools available and the equipment they need to do their job effectively. And she does all she can to ensure that every firefighter goes home at the end of their tour duty. So, I say to our nation's chief fire officer, Dr. Lori Moore-Merrell, thank you. Please stand.

Like any event of this magnitude, it takes resources to make it happen. The foundation has a supportive group of partners who help ensure our success by answering the call whenever we need their help. And I would like to take a moment to thank those sponsors who provided the resources to make this event possible. Our State of Science sponsors are the National Fire Protection Association, who is our premier sponsor. Jim, please. Thank you. We're fortunate to have 3 leading sponsors: the National Association of State Fire Marshals, the National Fire Sprinkler Association, and UL's Fire Safety and Research Institute. Please take a bow. And lastly, we have 2 supporters of our project today, the International Code Council and Milliken, who help fill the gap in our need for resources. Thanks to both of you.

So, as I conclude, I have to take a second and thank the team that made all this happen. It was a joint effort between the National Fallen Firefighters Foundation and the United States Fire Administration. So, all of those individuals that have been working behind the scenes, thank you, and please stand, because your efforts are truly appreciated.

So collectively, we have the opportunity today to impact fire and life safety in our nation, not just in the near term, but for generations to come. I encourage all of you to take the information discussed here today back to your fire organizations, your communities, your elected officials, and share that so that we can make our nation a safer place to live, work and play. Thank you.

State of Science: Closing remarks from U.S. Fire Administrator Dr. Lori Moore-Merrell

What a significant panel. Thank you. Thank you. Well done, all of you. I asked them just to stay. We, as you see, are well ahead of schedule, and that is due to all of our panelists today staying on point and presenting amazing information. So, I hope you all listened quickly, not just in the room, but our online watchers as well.

So, with that, this does conclude our United States Fire Administrator's Summit. I do want to recognize once again our recruits in the room. As Pat Morrison just said, you've heard a lot of very heavy information. In fact, I had staff lean over and say: "I know why you have a recruitment problem. Who would want this job?" So, we do want you to know that we are working very hard, as you've heard today, at reducing the fire problem, because the way to keep you safest and healthiest is the fires you don't go to, right? This is what we have to do.

So, prevention, community risk reduction are huge pieces of what we have ahead of us, but our continued efforts to make sure that we continue on with our health and safety, our behavior health, and certainly awareness and research in cancer, cardiovascular, behavior health and certainly our minorities — women issues, particularly.

So, with that, I want to thank you all for being part of today. This was a historic event, as I said in the beginning. I think it has been marked even more so as the day progressed today. So, leaders, for you, this is just the beginning. The recruits now, I

hope you picked up and will appreciate maybe not today, but in years to come, the significance of you sitting in this room today, because of what will happen based on this meeting. And I hope that this meeting is cited in history, in years from now, because today is just the beginning. Tomorrow, many of you will stay with us in another session where we begin to say, "What next?" So we've laid it all out on the table today, but what next? Each national organization will have a participant at the table tomorrow. Our researchers will be present, and our governmental affairs experts will be engaged. They will join in a strategic discussion about, "What next?" So once again, only the beginning.

I have to stop and make sure that once again, that I thank all of my staff, USFA staff who have worked tirelessly along with NFFF staff to make this happen. Behind the scenes, this was a yeoman's effort, and so if you would join me, please, to thank them once again.

With that said, I will now close the 2022 USFA Summit on Fire Prevention and Control. Thank you all for joining us today.

State of Science Presentations

U.S. Fire Administrator's Summit on Fire Prevention and Control

National Emergency Training Center
October 11, 2022



FEMA U.S. Fire Administration

Impact on Communities

Commissioner Adam Thiel
City of Philadelphia Fire Department

U.S. Fire Administrator's Summit on Fire Prevention and Control

JANUARY 5, 2022



12
Fire deaths



Photos: Philadelphia Fire Department

FEMA U.S. Fire Administration

2021



3,332
Structure fires

36
Fire-related deaths



Structure Fires in Philadelphia

Photos: @ThielAdam

FEMA U.S. Fire Administration

2021



3,332
Structure fires

36
Fire-related deaths



Structure Fires in Philadelphia

Photos: @ThielAdam

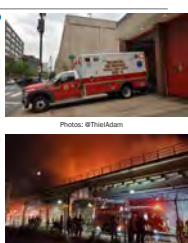
FEMA U.S. Fire Administration

2021

FY20 BY THE NUMBERS

47,864 Fire Incidents	3,884 Structure fires	266,090 EMS incidents	362,101 Calls received
---------------------------------	---------------------------------	---------------------------------	----------------------------------

39 Fire-related deaths



Photos: @ThielAdam

FEMA U.S. Fire Administration

2000-2019

692

Fire-related deaths

Fire Fatalities in Philadelphia

2000 - 2019, Time Breakdowns

Year	January	February	March	April	May	June	July	August	September	October	November	December	Total
2000	1	0	0	0	0	0	0	0	0	0	0	0	1
2001	1	0	0	0	0	0	0	0	0	0	0	0	1
2002	1	0	0	0	0	0	0	0	0	0	0	0	1
2003	1	0	0	0	0	0	0	0	0	0	0	0	1
2004	1	0	0	0	0	0	0	0	0	0	0	0	1
2005	1	0	0	0	0	0	0	0	0	0	0	0	1
2006	1	0	0	0	0	0	0	0	0	0	0	0	1
2007	1	0	0	0	0	0	0	0	0	0	0	0	1
2008	1	0	0	0	0	0	0	0	0	0	0	0	1
2009	1	0	0	0	0	0	0	0	0	0	0	0	1
2010	1	0	0	0	0	0	0	0	0	0	0	0	1
2011	1	0	0	0	0	0	0	0	0	0	0	0	1
2012	1	0	0	0	0	0	0	0	0	0	0	0	1
2013	1	0	0	0	0	0	0	0	0	0	0	0	1
2014	1	0	0	0	0	0	0	0	0	0	0	0	1
2015	1	0	0	0	0	0	0	0	0	0	0	0	1
2016	1	0	0	0	0	0	0	0	0	0	0	0	1
2017	1	0	0	0	0	0	0	0	0	0	0	0	1
2018	1	0	0	0	0	0	0	0	0	0	0	0	1
2019	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	14	0	0	0	0	0	0	0	0	0	0	0	14



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

Photos: @ThielAdam

CONTACT INFORMATION

Commissioner Adam Thiel
City of Philadelphia
Adam.Thiel@Phila.gov



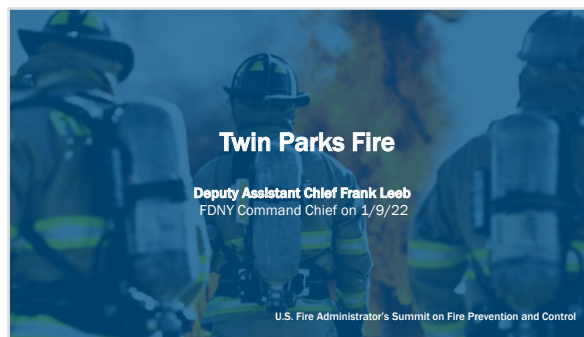
U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

U.S. Fire Administrator's Summit on Fire Prevention and Control

National Emergency Training Center
October 11, 2022



Twin Parks Fire

Deputy Assistant Chief Frank Leeb
FDNY Command Chief on 1/9/22

U.S. Fire Administrator's Summit on Fire Prevention and Control

TWIN PARKS FIRE JANUARY 9, 2022 - 333 EAST 181 STREET, BRONX NY



U.S. Fire Administrator's Summit on Fire Prevention and Control

- 19 story structure – fireproof
- Duplex and single level apartments
- Fire began in apartment 3N
- 120 apartments, 118 occupied



Lloyd Mitchell/AM New York

U.S. Fire Administrator's Summit on Fire Prevention and Control

CONTRIBUTING FACTORS

- Fire was discovered at approximately 10:50 am
- Delayed notification – 1st 911 call at approximately 10:54 am
- Numerous open doors – apartments and stairwells



U.S. Fire Administrator's Summit on Fire Prevention and Control

THE RESPONSE

- FDNY units arrived in 3 minutes
- Reports of unconscious people received before arrival
- Smoke had already filled the stairwells prior to FDNY extinguishment efforts
- 5th alarm assignment – bringing hundreds of firefighters and EMS personal to the scene
- **More than 60 EMS transports**
- **More than 30 in cardiac arrest**



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

The FDNY rescued an extraordinary number of people.

However,

an extraordinary number of victims did not survive.

Historic, but not unprecedented



U.S. Fire Administrator's Summit on Fire Prevention and Control

THE COMMUNITY

- Overwhelming grief
- Mostly immigrants
- Many displaced
- Increased pressure on existing housing stock
- Generational impact



U.S. Fire Administrator's Summit on Fire Prevention and Control

The victims:
Names and
photos

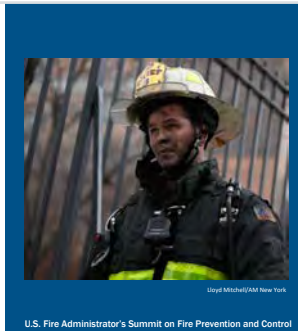
*Not just
numbers or
statistics*



U.S. Fire Administrator's Summit on Fire Prevention and Control

PREVENTION

- Sprinklers
- Smoke alarms
- Resident education
- Two-way voice communications
- *We must not squander the opportunity this tragic fire presents and better protect all residential housing.*
- Funding



U.S. Fire Administrator's Summit on Fire Prevention and Control

FIRE SAFETY MESSAGING

All 17 victims who succumbed to smoke inhalation at some point during the incident either **left their apartments** or **left their apartment doors open**.



U.S. Fire Administrator's Summit on Fire Prevention and Control

FDNY

Although we lost 17 lives on this day, the number of lives saved by the FDNY were countless and the hard work and determination of every member was recognized by the department and the community.



U.S. Fire Administrator's Summit on Fire Prevention and Control

THANK YOU

- U.S. Fire Administrator - Dr. Lori Moore-Merrell
- FDNY leadership
 - Chief of Department John Hodgins
 - Fire Commissioner Laura Kavanagh
- FDNY Bureau of Fire Investigation
- Chief Fire Marshal Daniel Flynn



Past and current members of the FDNY (Fire, EMS and Civilian –for their unwavering dedication to the life saving mission of the FDNY)



U.S. Fire Administrator's Summit on Fire Prevention and Control

CONTACT INFORMATION

Deputy Assistant Chief Frank Leeb
FDNY
Frank.Leeb@fdny.nyc.gov



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

U.S. Fire Administrator's Summit on Fire Prevention and Control

National Emergency Training Center
October 11, 2022



Impact on Firefighters Working In Underserved Communities

Susan M. Moore, PhD
Emily J. Haas, PhD

U.S. Fire Administrator's Summit on Fire Prevention and Control

NATIONAL STRATEGY FOR EQUITABLE PPE PROTECTIONS

Use • Availability • Accessibility • Acceptability • Knowledge

Virtual Workshop (Nov 8 and 9)

Characterize priority issues and potential solution pathways to inform the National Strategy

Announce Partnership opportunities

Registration: Equitable Personal Protective Equipment (PPE) Protections Workshop | NPPTL | NIOSH | CDC



Crowdsourcing Ideas for Innovation: Turnout Gear Fit

Example Research Project

Determining the magnitude of impact that community vulnerability has on first responder safety and health risks



U.S. Fire Administrator's Summit on Fire Prevention and Control

"SOCIAL VULNERABILITY" IS A MEASURE OF HOW EXTERNAL STRESSES NEGATIVELY IMPACT COMMUNITY MEMBER HEALTH

Merging the Social Vulnerability Index (SVI)¹ with computer aided dispatch and investigation data allows the impact that community vulnerability has on first responder risks to be determined.

SVI Theme	SVI Subtheme	How do these community factors influence...
Theme 1: Socioeconomic status (SES)	% below poverty estimate % below unemployed estimate - per capita income estimate % no high school diploma estimate	- Number structural fires - Types of ignition sources - Number and type of personnel and apparatus - Effective evacuation strategies - Exposure to infectious diseases
Theme 2: Household composition/disability	% ≥65 and ≤17 years old % with a disability % of single-parent households	
Theme 3: Racial/ethnic diversity/language	% belonging to racial/ethnic minority % who speak English less than well	
Theme 4: Housing/transportation	% multiunit structures % mobile homes % crowding % no vehicle % group quarters	

¹CDC's SVI data comes from the American Community Survey



U.S. Fire Administrator's Summit on Fire Prevention and Control

CASE STUDY: OH, NY, MA

- This case study involved three collaborating fire departments in Ohio, New York, and Massachusetts¹
- Used the same data reporting system – 160k incidents across all departments
- Infectious disease variable – potential exposure documented by 911 operator*

* Confirmed community case counts allowed us to adjust for those incidents likely not related to disease of interest



Established community vulnerabilities as shown by the darker teal color



Findings

The magnitude of exposure risk for just a one-unit increase in each SVI theme was:

Racial/ethnic minority/language

Odds increased by 94.4%

Household composition/disability

Odds increased by 49.9%

Housing/transportation

Odds increased by 33.6%

Socioeconomic status

Odds decreased by 19%

¹ Haas, E.J., Furek, A., Gandy, M., Yoon, H.N., & Moore, S.M. (2022). Applying the Social Vulnerability Index as a leading indicator to protect fire-based emergency medical service responders' health. *International Journal of Environmental Research and Public Health*. Special Issue on Worker Safety, Health, and Well-Being in the USA, 18, 8049. doi: 10.3390/ijerph18188049.

U.S. Fire Administrator's Summit on Fire Prevention and Control

WHY IT MATTERS

- Evidence-based resource requests and allocations
- Community-based partnerships to implement focused interventions and training
- Improved emergency preparedness planning

Fire Prevention Examples:

Evidence-based requests for funding or community partnerships to support the most vulnerable communities

- Distribute smoke detectors
- Educate and facilitate use of sprinkler systems in new construction or renovated buildings/dwellings
- Develop and implement public fire education programs related to hoarding



PPE-Related Examples (Infectious Disease):

Risk-based approach to PPE selection, distribution, and use by first responders (e.g., during shortages)

Reducing responder risk by prioritizing intervention distribution (e.g., respirators and masks) to the most vulnerable communities



U.S. Fire Administrator's Summit on Fire Prevention and Control

ORG CHART



Disclaimer: The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention. Mention of a company or product name does not constitute endorsement by NIOSH.

Photo Credit: All photos courtesy of NIOSH or NIOSH-related entities unless noted.



U.S. Fire Administrator's Summit on Fire Prevention and Control

CONTACT INFORMATION

Susan M. Moore, PhD

Associate Director for Science

National Institute for Occupational Safety and Health (NIOSH)

National Personal Protective Technology Laboratory (NPPTL)

sme6@cdc.gov

Emily J. Haas, PhD

Research Health Scientist

National Institute for Occupational Safety and Health (NIOSH)

National Personal Protective Technology Laboratory (NPPTL)

wcc3@cdc.gov



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

U.S. Fire Administrator's Summit on Fire Prevention and Control

National Emergency Training Center
October 11, 2022



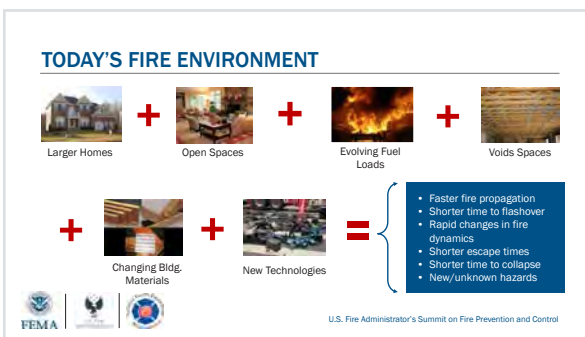
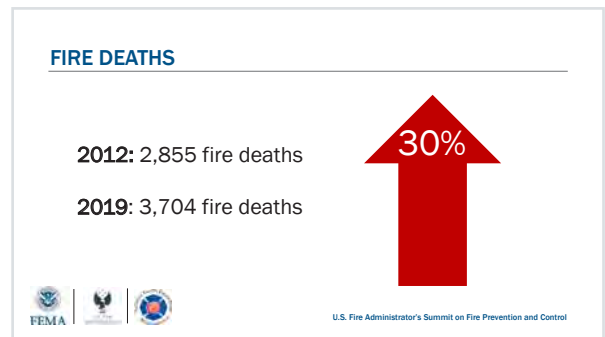
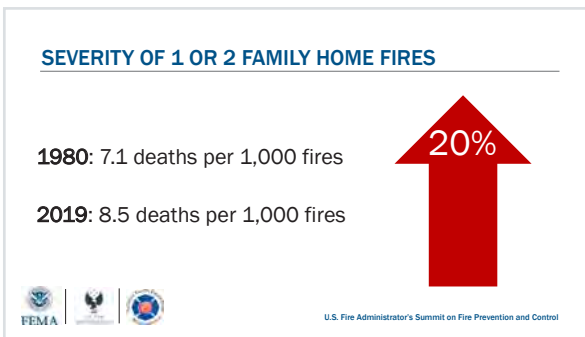
U.S. Fire
Administration





During a fire today, you have the least amount of time to safely exit your home than at any time in history.

FEMA | U.S. Fire Administrator's Summit on Fire Prevention and Control





EVOLUTIONS BEYOND HOMES

- Wildland Urban Interface Fires (Suburban Conflagration)
- Expanded use of lithium-ion batteries in vehicles, charging stations, mobility devices and energy storage systems
- Expansion of large warehouses to support fast shipping
- Evolving construction practices such as plastic blocks, tall wood buildings, combustible facades, etc.

The slide features four small images showing various fire incidents: a large fire in a field, a fire in a building, a fire in a warehouse, and a fire in a tall building. The slide is surrounded by FEMA and U.S. Fire Administrator's Summit on Fire Prevention and Control logos.

"The serious losses in life and property resulting annually from fires cause me deep concern. I am sure that such unnecessary waste can be reduced. The substantial progress made in the science of fire prevention and fire protection in this country during the past forty years convinces me that the means are available for limiting this unnecessary destruction."

HARRY S. TRUMAN

FEMA | U.S. Fire Administrator's Summit on Fire Prevention and Control

A PATH FORWARD

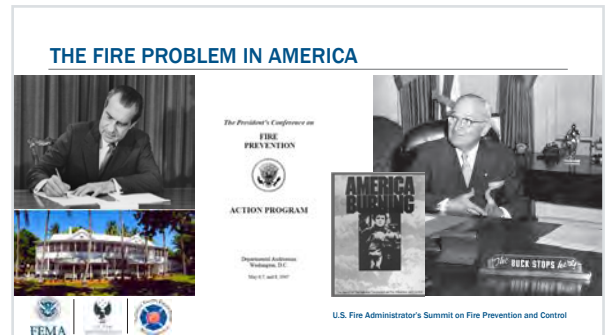
- Fire is fast
- Manual suppression is often behind the speed of fire, automatic suppression is not
- Complacency and indifference lead to fire deaths
- Escape planning, smoke alarms and closed doors save lives
- Evolutions will continue; we can't let them continue to outpace safety

The slide is surrounded by FEMA and U.S. Fire Administrator's Summit on Fire Prevention and Control logos.

CONTACT INFORMATION

Steve Kerber, PhD, PE
Fire Safety Research Institute
Stephen.Kerber@ul.org

The slide is surrounded by FEMA and U.S. Fire Administrator's Summit on Fire Prevention and Control logos.



CURRENT EDITIONS OF CODES AND STANDARDS ARE ESSENTIAL AND PROVEN

- Smoke alarms
- Fire sprinklers
- Firefighters

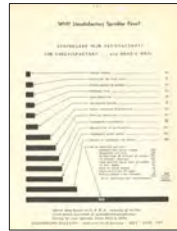


- Over 12,500
- 12,500
- 10,000
- 35,140
- 65



U.S. Fire Administrator's Summit on Fire Prevention and Control

THEN



NOW



96%
Effectiveness
for 121 years

U.S. Fire Administrator's Summit on Fire Prevention and Control

VISION FOR THE FUTURE

Quality of Life for Happy, Safe Families



U.S. Fire Administrator's Summit on Fire Prevention and Control

CONTACT INFORMATION

Shane Ray
President
National Fire Sprinkler Association
ray@nfsa.org



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

U.S. Fire Administrator's Summit on Fire Prevention and Control

National Emergency Training Center
October 11, 2022



Wildland Urban Interface (WUI) Codes and Standards

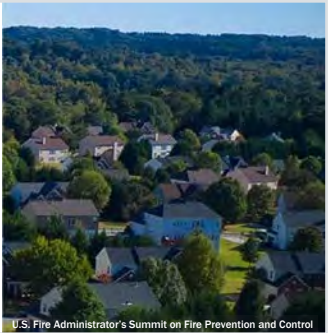
Karl Fippinger, CEM, PMP
Vice President, Fire and Disaster Mitigation
International Code Council

U.S. Fire Administrator's Summit on Fire Prevention and Control

THE WILDLAND URBAN INTERFACE

The zone of transition between unoccupied land and human development. It is the line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

- U.S. Fire Administration



U.S. Fire Administrator's Summit on Fire Prevention and Control

WILDLAND URBAN INTERFACE GROWTH IN THE UNITED STATES

From 1990-2010:

- The wildland urban interface grew by **33%** to over **190 million acres**.
- The number of homes in the wildland urban interface **expanded by more than 41%**.
- The wildland urban interface continues to grow by approximately **2 million acres per year**.
- 99 million people**, or **1/3 of the U.S. population** now live in the wildland urban interface.



U.S. Fire Administrator's Summit on Fire Prevention and Control

WILDFIRE RISK TO COMMUNITIES

At risk from wildfire:

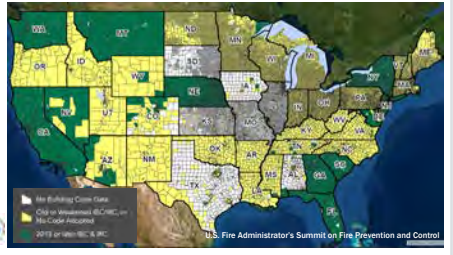
- +46 million residences**
- +70,000 communities**



U.S. Fire Administrator's Summit on Fire Prevention and Control

NATIONAL BUILDING CODE ADOPTION TRACKING

According to FEMA, only 25% of hazard-prone jurisdictions in the U.S. adopt the latest two editions of hazard-resistant building codes.



U.S. Fire Administrator's Summit on Fire Prevention and Control



KEY CONCEPTS FOR REGULATING THE BUILT ENVIRONMENT

Parcel Level | Neighborhood Level | Community Level

- Ignition-Resistant Construction
- Defensible space
- Emergency Vehicle Access
- Water Supply
- Fire Sprinklers



FEMA U.S. Fire Administration

U.S. Fire Administrator's Summit on Fire Prevention and Control

IWUIC ADOPTION

The IWUIC is adopted:

- Statewide in only 5 states
 - MT, NV, PA, UT, WA
- 94 counties across 24 states
- New federal buildings over 5,000 s/f built on federal lands since 2016



FEMA U.S. Fire Administration

U.S. Fire Administrator's Summit on Fire Prevention and Control

CREATING SAFER AND MORE WILDFIRE RESILIENT COMMUNITIES

A landmark 2008 building code designed for California's fire-prone regions requiring fire-resistant roofs, siding and other safeguards appears to have protected more than 100 homes in the path of the 2018 Camp Fire.

- McClatchy analysis of the 2018 Camp Fire in California

51% of the 350 single-family homes built after 2008 in the path of the Camp Fire were undamaged.

By contrast, only 18% of the 12,100 homes built prior to 2008 escaped damage.



FEMA U.S. Fire Administration

U.S. Fire Administrator's Summit on Fire Prevention and Control

CONTACT INFORMATION

Karl Fippinger, CEM, PMP
 Vice President, Fire and Disaster Mitigation
 International Code Council
kfippinger@iccsafe.org



FEMA U.S. Fire Administration

U.S. Fire Administrator's Summit on Fire Prevention and Control



FEMA U.S. Fire Administration

U.S. Fire Administrator's Summit on Fire Prevention and Control

U.S. Fire Administrator's Summit on Fire Prevention and Control

National Emergency Training Center
October 11, 2022



Wildfire Disasters: A Wicked Problem

Michele Steinberg
Wildfire Division Director
National Fire Protection Association®

U.S. Fire Administrator's Summit on Fire Prevention and Control

We've got a wicked problem on our hands!



A wicked problem is:

- Difficult to clearly define
- Multi-causal
- Incomplete, contradictory and changing requirements
- Socially complex – no clear solution
- Solving one aspect may reveal or create other problems
- Isn't the responsibility of any one entity

U.S. Fire Administrator's Summit on Fire Prevention and Control

The Problem is getting *WORSE*

- A volatile climate
 - Extreme droughts, hotter temperatures
 - Bouts of heavy precipitation grows vegetative fuel
 - Water Impacts
- Land use and management decisions
 - Growing population and construction wildfire-prone areas
 - Overgrowth of forested lands due to over-suppression

Michael Frye

U.S. Fire Administrator's Summit on Fire Prevention and Control

What can we control?



U.S. Fire Administrator's Summit on Fire Prevention and Control

Homes as fuel – location, design, materials, immediate surroundings



U.S. Fire Administrator's Summit on Fire Prevention and Control

CAL FIRE Damage Inspection Program Data

Year	Damage	Structure Type							Total	% of Residential Structures Damaged/Destroyed	% of All Structures Damaged/Destroyed
		Single Family Residences	Multi-Family Residences	Mixed Residential/Commercial	Nonresidential Commercial	Other Minor Structures	Infrastructure				
Solar 2018	Destroyed (100%)	25874	292	15	938	10104	1		36224	91.32%	10.70%
	Major (26-50%)	117	6	0	24	333	7		487	0.49%	0.73%
	Minor (10-25%)	368	6	3	48	373	2		699	2.23%	1.40%
	Affected (1-9%)	1402	24	2	131	326	12		1947	4.90%	4.74%
TOTAL		27761	328	20	1141	10736	12		41013	100.00%	126.07%
Structures Destroyed		240	343	1223	10702	12709	18220				
Structures Damaged		8	12	72	1135	1323	2854				
Structures Damaged/Destroyed		248	355	1295	11837	14032	21074				



U.S. Fire Administrator's Summit on Fire Prevention and Control

Fire Department Needs – Wildfire and WUI

- 87% are responsible for WUI/wildland firefighting.
- 78% of departments who perform WUI/wildland firefighting operations have **unmet needs** in training.
- Two-thirds of departments have **unmet needs** in the area of wildland personal protective clothing.



Land use and management contribute to wildfire disasters



U.S. Fire Administrator's Summit on Fire Prevention and Control

Home Ignition Zone

- What happens here is critical to structure survival
- Home materials and surroundings dictate its ignitability
- There are things we can do to prevent home ignition



Wildfires are inevitable; disasters are not



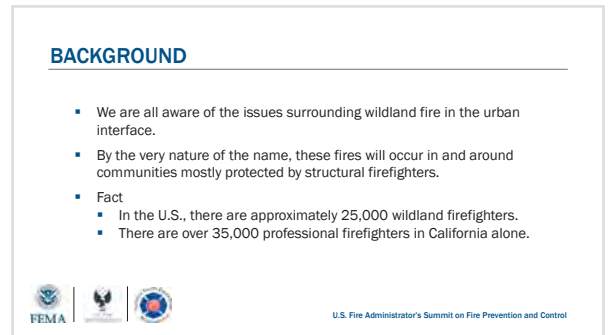
U.S. Fire Administrator's Summit on Fire Prevention and Control

Thank you

Michele Steinberg
Wildfire Division Director
National Fire Protection Association® (NFPA®)
msteinberg@nfpa.org



U.S. Fire Administrator's Summit on Fire Prevention and Control



MARSHALL, CO. – DECEMBER 30, 2021



U.S. Fire Administrator's Summit on Fire Prevention and Control

2015 AND 2021 NFPA NEEDS ASSESSMENT

- **87%** responding say they perform WUI firefighting
- **78%** of those responding have not received formal training in WUI firefighting
 - Smaller departments do not have access to specialized WUI firefighting operations
- **66%** cannot equip ALL their emergency responders with wildland firefighting protective equipment
- **97%** cannot handle an incident involving more than 5 structures on their own



U.S. Fire Administrator's Summit on Fire Prevention and Control

A GAP IN THE TRAINING MODELS

- **National Wildfire Coordination Group (NWCG) S-215**
 - Designed for Wildland Firefighters
 - 24 hours of in-person classroom training
 - S-130 (40), S-190 (8 online) and L-180 (4 online) prerequisites (FFT1)
 - Prescribed classroom sites
- **Responding to the Interface**
 - Designed for Structural Firefighters
 - 16 hours of in-person training
 - 8 hours classroom review, 8 hours field training and exercises
 - 10 hours of on-line training
 - Available for any community



U.S. Fire Administrator's Summit on Fire Prevention and Control

CONCLUSIONS

- **Almost 90%** of fire fighters responding to Urban Interface Fires are structural fire fighters.
- **More than 75%** of those surveyed do not provide formal Urban Interface Fire training.
- There is a training GAP for structural fire fighters for standardized Urban Interface Fire Training.
- NWCG S-215 (Fire Operations in the Wildland Urban Interface Course) is a minimum requirement, and other organizations' equivalents should be considered.



U.S. Fire Administrator's Summit on Fire Prevention and Control

CONTACT INFORMATION

Rick Swan
International Association of Fire Fighters
rswan@iaff.org



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

U.S. Fire Administrator's Summit on Fire Prevention and Control

National Emergency Training Center
October 11, 2022



Data Informed Insights on Recruitment and Retention

Chief John Oates

U.S. Fire Administrator's Summit on Fire Prevention and Control

WHAT THE DATA SAYS ON WHERE WE ARE NOW AND WHERE WE STRUGGLE, AND WHERE WE CAN GO

- Traditionally, the fire service has not been required to actively recruit or actively endeavor to ensure members stay in the department
- Career fire departments today:
 - Unprecedented low application numbers
 - Struggle to ensure a diverse workforce
- Volunteer fire departments today:
 - Low incumbent membership
 - Low number of applicants
 - Increased service delivery demand



U.S. Fire Administrator's Summit on Fire Prevention and Control

WHY DO PEOPLE JOIN? WHY DO PEOPLE STAY?

Table 10. Volunteer Firefighter Tenure Period by Number and Percentage: 2019

Tenure Active	Number	Percentage
Less than one year	66,900	9%
1-5 years	195,200	27%
6-10 years	157,100	22%
More than 10 years	303,600	42%
Total	722,800	100%

Sum may not equal totals due to rounding errors.

Source: NFPA's Survey of Fire Departments for US Fire Experience During 2019.



U.S. Fire Administrator's Summit on Fire Prevention and Control

WHY DO PEOPLE JOIN? WHY DO PEOPLE STAY?

A large majority of fire departments across the United States (US) depend on volunteer firefighters for emergency responses. Over the last decade, suburban and rural populations have soared, while the numbers of volunteer firefighters have fallen by over 10%, suggesting that improvements in recruitment and retention are necessary to counteract that trend. This article presents the results of a mixed methods research design that evaluates volunteer firefighters' motives to join, their expectations to continue service, and their contemporary satisfaction with service. The project evaluates how these different factors affect volunteers' prospective service length. Results suggest that a values orientation is the most prevalent influence affecting firefighters' commitment to the volunteer fire service, but that personal enhancement and understanding goals were best able to systematically explain variance in the prospective service period. The findings presented here are used to outline recommendations to improve recruitment and retention of volunteer firefighters and reduce levels of insularity in recruitment networks.



Dr. David A. Greene, Deputy Chief, Colleton County (SC) Fire-Rescue
Dr. Marcus E. Hendershot, Assistant Professor of Political Science, Schreiner University (TX)

U.S. Fire Administrator's Summit on Fire Prevention and Control

IS THE PROBLEM RECRUITMENT OR PROCESS?

Filled out preliminary background application and met minimum requirements	13,236
Took and passed written test	6,504
Submitted CPAT certification within time window	966
Scheduled and passed oral interview	622
Filled out questionnaire and passed Initial Panel Review	446
Passed in-depth background check and Final Panel Review	205
Passed medical and psychological evaluations	187

1.4% success rate



U.S. Fire Administrator's Summit on Fire Prevention and Control

CASE STUDY

Females and Minority Racial/Ethnic Groups Remain Underrepresented in Emergency Medical Services: A Ten-Year Assessment, 2008-2017

- The study population included 588,337 EMTs and 105,356 paramedics.
- The proportion of females earning initial EMT certification **rose from 28% in 2008 to 35% in 2017**.
- Throughout the study period, **less than one-fourth** of newly certified paramedics were female (range: 20-23%).
- The proportion of EMS professionals identifying as Black **remained near 5% among EMTs and 3% among paramedics**.
- The proportion of newly-certified Hispanic EMS professionals **rose from 10% to 13% among EMTs and from 6% to 10% among paramedics**



U.S. Fire Administrator's Summit on Fire Prevention and Control

CONTACT INFORMATION

Chief John Oates
International Public Safety Data Institute
john@i-psdi.org



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

U.S. Fire Administrator's Summit on Fire Prevention and Control

National Emergency Training Center
October 11, 2022



Recruitment Challenges for Career Departments Focused on Diversity, Equity, and Inclusion

Chief John S. Butler

U.S. Fire Administrator's Summit on Fire Prevention and Control

WHAT WE TRIED AND DIDN'T WORK

- **Stricter Selection and Denial policies**
 - Limited applicant pool
 - Updated; now reflective of current culture
- **Limited appointments for written test and CPAT**
 - Attendance challenges
 - Now offering additional opportunities
- **Communication**
 - Not remaining engaged with applicants
 - Now engaging with applicants throughout on various communication platforms



U.S. Fire Administrator's Summit on Fire Prevention and Control

WHAT'S WORKED/CURRENTLY WORKING

- Updated *Selection and Denial* criteria
 - Viewing applicants - "whole person" approach
- Recruitment marketing appealing to all demographics
 - Diverse team of recruiters
 - Diversity in advertising
 - Increased access and exposure
- Development of infrastructure for data analysis
 - Applicant demographics
 - Comparative measures on applicants



U.S. Fire Administrator's Summit on Fire Prevention and Control

WHAT WE INTEND TO EXPLORE MOVING FORWARD

- Increase data collection and analytics
 - Learn more about applicants
 - Data-informed decisions
- Increase in-person presence
 - Recruit in our own backyard
 - Schools, faith-based organizations, local events
- Evaluate online marketing and recruitment companies
 - Increase Internet-based outreach
 - Improve website/end-user interface



U.S. Fire Administrator's Summit on Fire Prevention and Control

CONTACT INFORMATION

Chief John S. Butler
Fairfax County Fire and Rescue Department
ChiefJohnButler@fairfaxcounty.gov



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

U.S. Fire Administrator's Summit on Fire Prevention and Control

National Emergency Training Center
October 11, 2022



Recruitment Challenges for Volunteer Fire Departments

Chief Brita Horn

U.S. Fire Administrator's Summit on Fire Prevention and Control

RECRUITMENT CHALLENGES

- General
 - Societal changes: widespread decline in volunteerism
 - Pace of life
 - Risks of firefighting for serving communities
- Fire Service
 - Insularity
 - Lack of expansion of recruiting outside of existing networks
 - Department pressures: dwindling budgets, expanded response requirements
 - Safer work environments



U.S. Fire Administrator's Summit on Fire Prevention and Control

APPRENTICESHIP PROGRAMS

Registered apprenticeship programs enable employers to develop and train their future workforce while offering career seekers affordable paths to secure quality, high-paying jobs.

Source: Department of Labor, www.apprenticeship.gov



U.S. Fire Administrator's Summit on Fire Prevention and Control

APPRENTICESHIP PROGRAMS

- Built on many of the same tenets valued by the fire service:
 - Industry-led
 - Structured on-the-job learning
 - Supplemental education
 - Quality and safety
 - Credentials
- Incorporating solutions to challenges fire departments are facing by building on various diversity models
- Improved data access and capture
- Resources for cancer prevention, healthy lifestyles and behavioral health support



U.S. Fire Administrator's Summit on Fire Prevention and Control

CONTACT INFORMATION

Chief Brita Horn
Rock Creek Volunteer Fire Department



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

U.S. Fire Administrator's Summit on Fire Prevention and Control

National Emergency Training Center
October 11, 2022



National Firefighter Registry: The Missing Piece

Kenny Fent, PhD, CIH

U.S. Fire Administrator's Summit on Fire Prevention and Control

WHAT DO WE KNOW?

U.S. Fire Administrator's Summit on Fire Prevention and Control

WHAT DON'T WE KNOW?

- What is the cancer risk for volunteer firefighters?
- What is the cancer risk for the sub-specialties of the fire service?
- How does the cancer risk vary for demographic groups?
- How does the cancer risk vary regionally across the U.S. fire service?
- How prevalent are rare forms of cancer among firefighters?
- How does the cancer risk change with increasing exposures, including major events?
- What other occupational and non-occupational risk factors contribute to cancer risk among firefighters?
- To what extent do different control interventions and workplace practices reduce the risk of cancer?
- Are there other chronic illnesses that are elevated in firefighters?

U.S. Fire Administrator's Summit on Fire Prevention and Control

NATIONAL FIREFIGHTER REGISTRY (NFR)

Mission: To generate detailed knowledge about cancer in the fire service through a voluntary registry that reflects our nation's diverse firefighters

Vision: To equip the fire service and public health communities with the knowledge they need to reduce cancer in firefighters

Goal: Enroll 200,000 firefighters

Specific aims:

- Collect self-reported information on workplace & personal characteristics through **web portal**
- Obtain records from **fire departments or agencies** to track trends and patterns of exposure
- Link with **health information databases** including population-based cancer registries and the National Death Index to detect cancers and deaths

U.S. Fire Administrator's Summit on Fire Prevention and Control

THE MISSING PIECE

- Cancer is reportable in all 50 states
- Most states do not collect detailed information about occupation
- NFR allows you to register yourself as a firefighter
- NFR makes it possible to study the relationship between "firefighting" and "cancer"

U.S. Fire Administrator's Summit on Fire Prevention and Control

ENROLLING IN THE NFR

- Visit web portal NFR.cdc.gov
- Confirm eligibility and click Login.gov
- Create account
- Read and sign consent form
- Fill out user profile
- Complete the questionnaire
 - Demographics, work history, health history, lifestyle

30 - 45 minutes

U.S. Fire Administrator's Summit on Fire Prevention and Control

DATA SECURITY



Logging into web portal requires multi-factor authentication

Email, password, and another form of authentication (e.g., text message passcode)



Data uploaded to an encrypted database each time the firefighter clicks "save and continue" or logs out

Logging out saves progress



Privacy protected by an Assurance of Confidentiality

Identifiable information will not be shared outside of NIOSH



U.S. Fire Administrator's Summit on Fire Prevention and Control

WHO'S ELIGIBLE?

- ALL firefighters
 - Active and retired
 - Career and volunteer
 - Structural, wildland, or other specialties
 - Those with or without cancer



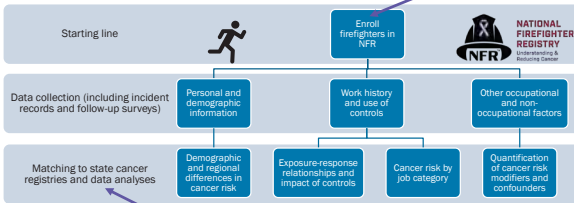
- NIOSH will reach out to select fire departments to solicit participation and request incident records
- Most will enroll through the open enrollment route ([NFR.cdc.gov](https://nfr.cdc.gov))



U.S. Fire Administrator's Summit on Fire Prevention and Control

WHAT HAPPENS AFTER ENROLLMENT?

200,000 or more
Over next few years



U.S. Fire Administrator's Summit on Fire Prevention and Control

THANK YOU



The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.



U.S. Fire Administrator's Summit on Fire Prevention and Control

WHO CAN REGISTER FOR THE NFR?

All U.S. firefighters, with or without cancer, no matter their length of service. This includes:

- Active and retired firefighters
- Career, paid-on-call, and volunteer firefighters
- Structural firefighters
- Wildland firefighters
- Instructors
- Fire investigators
- Other fire service members

Having all types of firefighters join the NFR is vital to examining the relationship between firefighting and cancer. Participation is voluntary.



CONTACT INFORMATION

Kenny Fent, PhD, CIH
Lead, National Firefighter Registry (NFR) Program
National Institute for Occupational Safety and Health (NIOSH)
kif5@cdc.gov



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

U.S. Fire Administrator's Summit on Fire Prevention and Control

National Emergency Training Center
October 11, 2022



The Fire Fighter Cancer Cohort Study (FFCCS): A Scientist-Fire Fighter Collaboration

Jeff Burgess, MD, MS, MPH

U.S. Fire Administrator's Summit on Fire Prevention and Control

FIRE FIGHTER CANCER COHORT STUDY (FFCCS)

MISSION STATEMENT
Conduct basic and applied research through a community-engaged approach with the fire service to advance firefighter cancer control and prevention.

TARGET GOAL
10,000 firefighters enrolled and followed over 30 years.

FIRE SERVICE PARTNERSHIP
Fire Service Oversight and Planning Board and firefighter research champions in each research project.



BIOLOGICAL SAMPLES
Collect blood, urine, and other biological samples at enrollment, every two years, and as needed after exposures. Report back results to firefighters.

COLLECT EXPOSURE DATA
Collect exposure data from firefighters at the fireground, during training activities, and at other locations.

INTEGRATE DATA
Integrate exposure, biological and health survey data through a centralized data center. Data protected by a Certificate of Confidentiality.



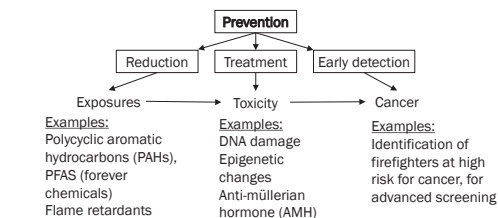
U.S. Fire Administrator's Summit on Fire Prevention and Control

FFCCS INCLUDES ALL TYPES OF FIREFIGHTERS



U.S. Fire Administrator's Summit on Fire Prevention and Control

FFCCS RESEARCH CONCEPTS



U.S. Fire Administrator's Summit on Fire Prevention and Control

FFCCS ENROLLMENT TO DATE



FFCCS PROJECTS AND FUNDING

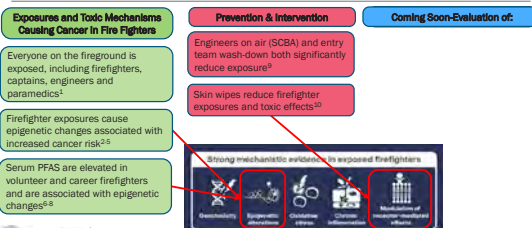
Grant	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
0) Pre-FFCCS											
1) Framework											
2) Expansion											
3) PFAS											
4) WUI											
5) Women											
6) Volunteers											
7) PACES											
8) Wildland											

Funding: Federal Emergency Management Agency (FEMA) EMW-2014-FP-00200, EMW-2015-FP-00213, EMW-2017-FP-00860, EMW-2018-FP-00886, EMW-2019-FP-00526, EMW-2020-FP-00430, National Institute of Environmental Health Sciences (NIEHS) P30 ES006994, P30 ES017885, National Institute for Occupational Safety and Health (NIOSH), University of Arizona Cancer Center, International Association of Fire Fighters (IAFF), some individual fire departments, and the National Cancer Institute (NCI).

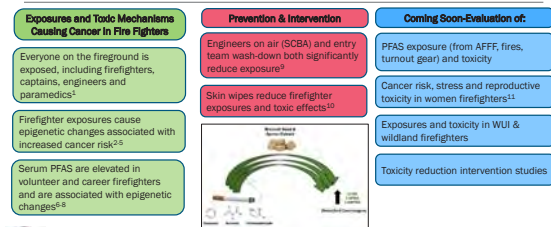


U.S. Fire Administrator's Summit on Fire Prevention and Control

FFCCS: CONTRIBUTIONS TO DATE AND COMING SOON



FFCCS RESEARCH CONCEPTS



NEXT STEPS

- Seek funding to expand participation to 10,000 firefighters and provide for long-term follow-up
- Evaluate additional outcomes as requested by fire service
- Further define toxic exposures and mechanisms
- Establish linkages to the NFR
- Expand cancer prevention activities
 - Exposure reduction
 - Toxicity mitigation



U.S. Fire Administrator's Summit on Fire Prevention and Control

CONTACT INFORMATION

Jeff Burgess, MD, MS, MPH
jburgess@arizona.edu

Alberto Caban Martinez, PhD, DO, MPH
Acaban@med.miami.edu

Miriam Calkins, PhD, MS
oil2@cdc.gov

Judith Graber, PhD, MS
judith.graber@rutgers.edu

Casey Grant, PE, FSFPE
cgrant@dsrae.net



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

U.S. Fire Administrator's Summit on Fire Prevention and Control

National Emergency Training Center
October 11, 2022



Women Firefighters & Cancer

Dr. Sara A. Jahnke

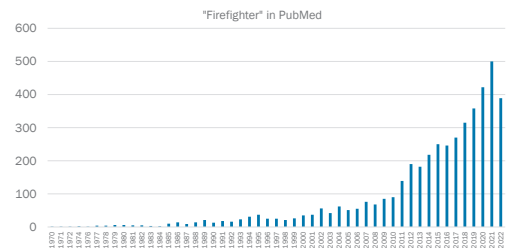
U.S. Fire Administrator's Summit on Fire Prevention and Control

In the United States, women account for:

- 13% of Police
- 14% of Military
- 6% of Marine Corps
- 3.5% - 5% of Fire & Emergency Services



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

CANCERS IN WOMEN FIREFIGHTERS

Findings: While there was little evidence of excess overall cancer mortality among women (SMR=0.74, 95% CI 0.27 to 1.61, n=6), most cancer deaths were from breast cancer (SMR=1.46, 95% CI 0.30 to 4.26, n=5). Bladder cancer mortality was statistically significant (SMR=33.51, 95% CI 4.06 to 121.05, n=5) based on few cases.

Site	Number of Cases	Rate Ratio (95% CI)	Number of Deaths	Rate Ratio (95% CI)
All Sites	6	0.74 (0.27-1.61)	6	0.74 (0.27-1.61)
Bladder	5	33.51 (4.06-121.05)	5	33.51 (4.06-121.05)
Breast	5	1.46 (0.30-4.26)	5	1.46 (0.30-4.26)
Prostate	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Stomach	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Testis	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Uterus	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Colon	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Rectum	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Small Intestine	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Large Intestine	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Esophagus	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Liver	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Pancreas	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Spleen	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Adipose Tissue	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Connective Tissue	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Soft Tissue	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)
Unknown	1	0.14 (0.01-1.46)	1	0.14 (0.01-1.46)



U.S. Fire Administrator's Summit on Fire Prevention and Control

CANCERS IN WOMEN FIREFIGHTERS

- Brain Cancer: aOR=2.54 (95% CI=1.19-5.42)
- Thyroid: aOR=2.42 (95% CI=1.56-3.74)
- Melanoma: aOR=1.68 (95% CI=0.97-2.90)



U.S. Fire Administrator's Summit on Fire Prevention and Control

BREAST CANCER RISKS

RESEARCH TEAM

- Firefighter Organizations:**
- United Fire Service Women
 - San Francisco Firefighters Cancer Prevention Foundation
- Science Team:**
- UC Berkeley
 - UC San Francisco
 - Silent Spring Institute
- Environmental Health Advocates:**
- Breast Cancer Prevention Partners
 - Commonwealth



U.S. Fire Administrator's Summit on Fire Prevention and Control

REPRODUCTIVE HEALTH



- Concerns:**
 - Chemical, biological, radiologic exposures
 - Shift schedule
 - Extreme physiological strain of emergency response
 - High ambient temperature and noise
- Under-studied**
- Little known about:**
 - Child health impact
 - Occupational exposures for mothers



U.S. Fire Administrator's Summit on Fire Prevention and Control

REPRODUCTIVE HEALTH



- Recent research:** Miscarriage rates among female firefighters were at least **2.3 times higher** compared to the U.S. National average of 10% (Jung, 2021)
- Volunteer firefighters had a **42% higher rate of miscarriage** than career



U.S. Fire Administrator's Summit on Fire Prevention and Control

FUTURE OF RESEARCH: WOMEN FIREFIGHTERS AND CANCER



U.S. Fire Administrator's Summit on Fire Prevention and Control

CONTACT INFORMATION

Dr. Sara A. Jahnke
Center for Fire, Rescue, & EMS Health Research
National Development & Research Institutes - USA, Inc.
jahnke@ndri-usa.org



U.S. Fire Administrator's Summit on Fire Prevention and Control

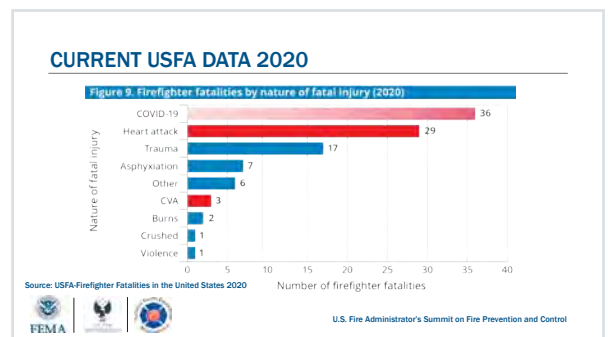
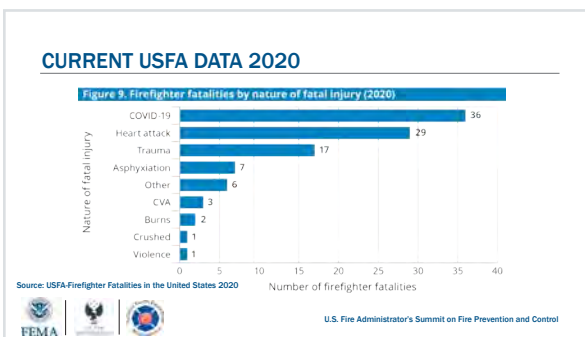


SUDDEN CARDIAC EVENTS (SCE)

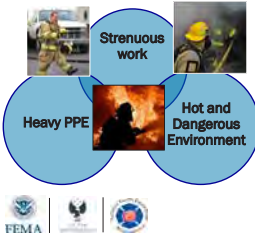
- SCE are the leading cause of acute duty-related death
- 800-1,000 non-fatal events per year
- SCE are not random throughout day
- 32% of their fatalities occur during firefighting but only 1% of time spent
- Statistically, 86 times more likely to have SCE after FF

	Time Spent	Fatalities
Fire Suppression	1%	32%
Response to Alarm	4%	11%
Return from Alarm	7%	4%
Physical Training	8%	20%
Nonfire emergencies	15%	9%
Nonemergency duties	65%	25%

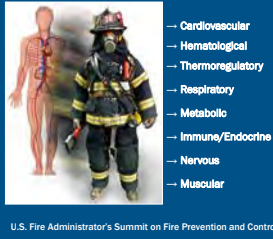
U.S. Fire Administrator's Summit on Fire Prevention and Control



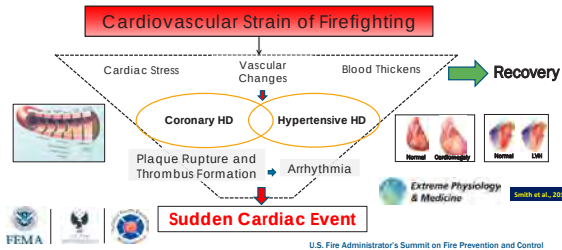
PHYSICAL DEMANDS OF THE JOB



PHYSIOLOGICAL STRAIN



RESEARCH FRAMEWORK



RESEARCH FINDINGS

Autopsy Findings of Cardiac Death Cases and Controls:

Underlying disease	Cardiac Case	Non-Cardiac Control
Coronary artery $\geq 50\%$ stenosis	73.2%	18.5%
Heart weight $>450g$	77.2%	32.5%

KEY FINDING – 80% of cardiac deaths had *both* CHD and HHD



CVD Risk Factor Prevalence Among Firefighters:

Risk Factor	Prevalence (%)
Hypertension (n=5063)	69%
High Cholesterol (n=4513)	20%
Low HDL (n=4513)	25%
High Blood Glucose (n=4513)	4%
Obesity (n=4513)	36%

KEY FINDINGS – greater hypertension than general population, others similar. FF is NOT similar to other jobs

U.S. Fire Administrator's Summit on Fire Prevention and Control

FIREFIGHTER CARDIOVASCULAR HEALTH

- Firefighting causes significant CV strain and physiological disruption
- Firefighting can Trigger a cardiac event in people with underlying disease - especially if FF has CHD and hypertensive heart disease
- Firefighters should be screened for underlying CVD
- Firefighters NEED robust fitness and wellness programs
 - Address cardiovascular disease risk factors
 - Prevent cardiovascular disease



U.S. Fire Administrator's Summit on Fire Prevention and Control

CONTACT INFORMATION

Dr. Denise Smith
Tisch Distinguished Professor
Director First Responder Health and Safety Laboratory
Skidmore College, and
Senior Research Scientist
Illinois Fire Service Institute
dsmith@skidmore.edu



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

U.S. Fire Administrator's Summit on Fire Prevention and Control

National Emergency Training Center
October 11, 2022

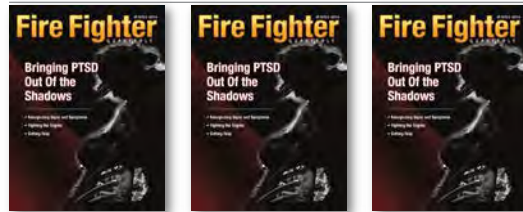


Firefighter Behavioral Health

Pat Morrison

U.S. Fire Administrator's Summit on Fire Prevention and Control

WHERE WE STARTED



U.S. Fire Administrator's Summit on Fire Prevention and Control

WHAT WE KNOW

- Fire service members experience higher rates of behavioral health disorders, when compared to the general population
- Suicide, burnout, and recruitment are major challenges of today
- The connection between behavioral health, sleep, and all other health outcomes is indisputable
- Many barriers still exist that prevent fire fighters from seeking help
- Peer support can effectively bridge the gap to help
- Fire fighters need culturally informed, evidenced based treatment
- Fire fighters remain highly resilient due to protective factors inherent to the occupation



U.S. Fire Administrator's Summit on Fire Prevention and Control

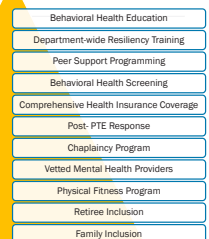
WHAT WE DON'T KNOW

- The rate (or cause) of fire fighters that die by suicide
- How to tackle the eroding physiological and cognitive impacts of sleep deprivation/shiftwork
- How to translate education/awareness into concrete behavioral change that saves lives
- How to expedite critical behavioral change in a legacy of tradition
- How to attract and retain millennials and Gen Z to the fire service



U.S. Fire Administrator's Summit on Fire Prevention and Control

ORGANIZATIONAL RESILIENCE



U.S. Fire Administrator's Summit on Fire Prevention and Control

CREATING A RESILIENT WORKFORCE FOR TOMORROW

Emerging Trends

- Comprehensive fire department behavioral health programming
- Mandatory behavioral health education for all levels of rank
- Targeted outreach/inclusion of department leaders and recruits
- Annual behavioral health screening and evaluation
- Increased treatment access through telehealth
- Improved treatment outcomes through culturally informed care
- The role of science in cutting edge behavioral health treatments



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

CONTACT INFORMATION

Pat Morrison
Chief of Field Services
International Association of Fire Fighters
pmorrison@iaff.org



U.S. Fire Administrator's Summit on Fire Prevention and Control



U.S. Fire Administrator's Summit on Fire Prevention and Control

National Roundtable Facilitated Discussion

Commissioner Adam Thiel led a discussion following the National Roundtable to allow attendees to provide feedback on the testimony delivered. Below are some discussion points from attendees.

Climate change impact on the fire service

- Attendees discussed that although wildland and structural firefighters may respond to the same incidents in the WUI, their personal protective equipment (PPE) and respiratory protection vary greatly.
- One attendee noted that private entities are addressing the climate change issue that the fire service may be able to partner with. For example, the Bloomberg American Cities Climate Challenge supports mayors engaged in the climate change issue.
- Because of the increase in WUI fires, firefighters may need to take an awareness course based on the risk levels in their jurisdiction.

National Firefighter Apprenticeship Program

- Because of the shift to people working from home, there may be an opportunity for a marketing campaign to attract new people to the volunteer fire service.
- Investment in summer camp programs for girls may serve to increase the number of women in the fire service.
- If there is a National Firefighter Apprenticeship Program, it will be essential to provide company officers with training related to management and leadership techniques. The leadership program would specifically include scenario-based role-playing drills.
- An attendee recommended exploring dual enrollment academies to allow high school students to participate in an apprenticeship program while completing their education.
- Health care insurance could be an incentive for an apprenticeship program or volunteering in general.

Comprehensive firefighter cancer strategy

- Incorporating cancer mitigation strategies into training on operational strategies and tactics may be a way to enforce best practices.
- A national strategy should include an awareness campaign, policy examples, chief officer support and company officer training.
- It is imperative that the primary care community understand the risk factor for cancer among firefighters.

Firefighter behavioral health resources

- Although there is improvement in the stigma of mental health in the fire service, much more attention and resources are needed.
- There is a need for an assessment and evaluation of the programs currently addressing firefighter behavioral issues.
- Data collection is needed to understand the problem of firefighter behavioral health better.
- Behavioral health is related to physical health, so a national campaign should clearly bridge the gap between the 2 topics.

Codes and standards implementation and enforcement

- The single most significant impact on civilian loss of life due to fire is ensuring that any building being paid for by the government is built and maintained with the minimum national building code.

Elevation of the fire service in federal policy development

- The fire service needs a cohesive effort to demonstrate its response to natural and human-made disasters to show the need to support the fire service.

*Due to time constraints, the last 2 topics were limited in attendee comments.

2022 Presidential Proclamation on Fire Prevention Week



61949

Federal Register

Vol. 87, No. 197

Thursday, October 13, 2022

Presidential Documents

Title 3—

Proclamation 10469 of October 7, 2022

The President

Fire Prevention Week, 2022

By the President of the United States of America

A Proclamation

In 1920, President Woodrow Wilson proclaimed October 9th the first Fire Prevention Day, calling on the public to learn more about the risks of deadly fires and commemorating the thousands who had lost their lives to these tragedies. More than a century later, our Nation observes Fire Prevention Week by renewing our commitment to fire safety and preparedness and taking steps to prevent fires in our homes, schools, workplaces, and the great outdoors. We also honor the bravery and heroism of our firefighters, who gear up time and again and rush into harm's way to protect our communities.

In the past year, our Nation has suffered some of its deadliest fires in recent history. Americans have lost their homes and their businesses. Thousands have tragically lost their lives. Wildfires are becoming more frequent and ferocious, destroying neighborhoods and natural resources and displacing families and communities. Super-charged by the climate crisis—which has exacerbated drought conditions and increased temperatures—these devastating wildfires have wiped out millions of acres of forest and so many homes.

Whenever the First Lady and I visit with families in the aftermath of a fire, we witness their incredible courage and resolve—even though, in many cases, they have just lost everything. We see people step up for one another, neighbors take each other in, and local businesses donate essential goods to those in need. With each visit, we are also reminded of the character of our Nation's firefighters, who put their lives on the line with remarkable selflessness and extraordinary bravery that inspire everyone.

For our firefighters and our communities, we have a responsibility to act now and act fast to mitigate the risk of wildfires. My Administration is investing billions from our Bipartisan Infrastructure Law in forest management, including the management of hazardous fuels in high-risk areas and funding the Community Wildfire Defense Grants, which are intended to help at-risk local communities and Tribes plan and reduce the risk against wildfire, and we are safeguarding mature and old-growth forests on Federal lands, a key component of decreasing fire risk. Through our Inflation Reduction Act, we are taking unprecedented steps to protect forest health, prevent fires, and confront the climate crisis—ushering in a new era of clean energy and reducing greenhouse gas emissions by a billion metric tons.

We are standing by our brave firefighters by substantially increasing wages for Federal wildland firefighters, and have implemented new programs to support their mental and physical health, and established a wildland firefighter job series that will help improve recruitment, retention, and opportunities for professional growth. We invested \$350 billion from our American Rescue Plan to help States and cities keep first responders like firefighters on the job during the COVID-19 pandemic. To help States pay for the cost of fighting wildfires and help communities increase resilience, the Federal Emergency Management Agency (FEMA) has also approved dozens of Fire Management Assistance Grants and is providing over one billion

dollars through its Building Resilient Infrastructure and Communities (BRIC) program.

To build on these actions, my Administration is educating the public on fire safety. This week's theme—"Fire won't wait. Plan your escape"—emphasizes how we must all prepare fire escape plans, test smoke and carbon monoxide alarms every month and replace them every 10 years, implement appropriate building codes, and when possible, install residential fire sprinklers. For those who live in areas susceptible to wildfire, regularly clearing brush and other vegetation around your homes is another important way to stay safe.

With every home, school, and business destroyed in a fire, precious memories are lost, livelihoods are jeopardized, and dreams are crushed. This National Fire Prevention Week, let us reflect on the importance of remaining vigilant and learning more about fire safety. Let us acknowledge the remarkable service of our Nation's firefighters and honor the memory of those who have lost their lives protecting others. And let us all work to make these heroes' jobs more manageable, keep our neighbors safer, and reduce the risk of fires across our country.

NOW, THEREFORE, I, JOSEPH R. BIDEN JR., President of the United States of America, by virtue of the authority vested in me by the Constitution and the laws of the United States, do hereby proclaim October 9 through October 15, 2022, as Fire Prevention Week. On Sunday, October 9, 2022, in accordance with Public Law 107-51, the flag of the United States will be flown at half-staff at all Federal office buildings in honor of the National Fallen Firefighters Memorial Service. I call on all Americans to participate in this observance with appropriate programs and activities and by renewing their efforts to prevent fires and their tragic consequences.

IN WITNESS WHEREOF, I have hereunto set my hand this seventh day of October, in the year of our Lord two thousand twenty-two, and of the Independence of the United States of America the two hundred and forty-seventh.



[FR Doc. 2022-22405
Filed 10-12-22; 8:45 am]
Billing code 3395-F3-P

Report: Impact of Climate Change

Issue statement

Prepare all firefighters for the climate-driven increase in wildfires in the WUI by providing them with the proper training and equipment.

A wicked problem

The U.S. Fire Administrator's Summit on Fire Prevention and Control looked at how changes in our climate are increasing the risk of WUI fires and the resulting impacts on the fire service.

Chief Donna Black, fire chief of the Duck (North Carolina) Fire Department and president of the IAFC, discussed how fighting fires in the WUI is a daunting task for firefighters trained to fight structural fires. As the number of fires in the WUI grows, more and more departments are faced with the challenge of protecting entire neighborhoods, often without the necessary training, tactical knowledge, equipment, personal protective gear and staffing.

As our nation continues to grow and develop in the WUI, our communities face increased wildfire threats because of a confluence of factors we will explore more deeply in the following pages.

The NFPA's Michelle Steinberg noted during her State of Science presentation that America's WUI fires are a "wicked problem" with no clear, complete or simple solution.

In her opening remarks, FEMA Administrator Deanne Criswell spoke to the challenge of this problem and to the considerable scope of partnerships and solutions needed to reduce the impacts of wildland and WUI fires,

"... the impact of fire is not limited to our cities. Our precious wildlands are also being ravaged by unforgiving impacts of wildfire. As we continue to see across the western United States, extreme heat, prolonged drought and high winds are serving as compounding factors to the year-round wildfire crisis. The call to mitigate these threats is growing louder each and every day. That is why FEMA, the U.S. Fire Administration, and our federal partners are leaning into a national cohesive strategy to develop resilient landscapes, fire-adapted communities and effective response capabilities.

"For example, we are helping lead the new Wildland Fire and Management Commission that is going to deliver workable and impactful solutions to Congress. This commission, comprised from partners across all levels of government and the private sector, is focused on creating safer communities by implementing and enforcing higher codes and standards, especially in the wildland urban interface and in our underserved communities. This is just 1 step that FEMA is taking to ensure that we are building a safer and more fire-resilient nation. The work ahead of us is extensive, but it's not impossible if we have a strong set of partners with us each step of the way. And today is the start of that process."

Defining the issue

Wildfire knows no boundaries. Fires can burn across federal, tribal, state, local and private lands and are often fought by a mix of agencies. The fire service continues to work with its federal, state and local partners on the global challenge of wildland fires. There is much to be learned from these destructive and immense fires and the skilled firefighters and command officers responding to these disasters.

One of the summit's focuses is the impacts occurring when wildland fires start or move into inhabited zones, colloquially known as the wildland urban interface or "WUI." These fires occur in the built (structural) environment directly adjacent to or intermixed with the wildland and pose unique challenges to firefighting forces. While some structural firefighters are trained in wildland firefighting, most have little to no training to operate in a rapidly spreading fire with multiple structures burning simultaneously and acres of vegetation being consumed at an exponential rate. These conflagrations surpass the capabilities and experience of many agencies. The lack of training, along with limited access to appropriate personal protective ensembles and equipment, impedes firefighters' ability to fight these fires effectively and adversely affects firefighter safety.

The USFA defines the WUI as the zone of transition between unoccupied land and human development. It is the line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

Targeted actions

In the impact areas raised by the summit, attendees identified targeted actions. Following the summit, the designated working groups will meet frequently over the next year in support of the USFA's goal to address these issues. Attendees identified the need to:

- ❖ Cross-train firefighters on wildland fire operations, resources and equipment.
- ❖ Educate firefighters, elected and government leaders, and community members on interface nomenclature (in comparison to wildland).
- ❖ Advocate for increased community resilience.

A critical point raised by the summit is the need for an improved understanding of the risks of wildland and WUI fires. There is a vocabulary that our nation must learn, using this common nomenclature to enable improved conversations about our risk. For example, the term "conflagration" has been applied to some of our nation's most well-known and destructive fires. The reality is that conflagrations, and the risk of them occurring, are no longer merely historical artifacts.

Impact Areas

Occurrence of wildfire

According to a June 2022 U.S. Congressional Budget Office (CBO) report, both the intensity of wildfires and the number of wildfires impacting the built environment have increased over the past 30 years. The CBO report cites increased human presence in the WUI, as well as past land management practices resulting in a dangerous increase of fuel buildup and climate change as factors contributing to this increase in destructive fire activity.

More information:

- ❖ CBO: “Wildfires” (June 2022) www.cbo.gov/publication/57970.
- ❖ National Interagency Fire Center (NIFC): www.nifc.gov.
- ❖ “National Cohesive Wildland Fire Management Strategy”: www.forestsandrangelands.gov/strategy/index.shtml.
- ❖ “Wildfire Risk to Communities”: www.wildfirerisk.org.
- ❖ National Academy of Sciences: “Chemistry of Fires at the Wildland-Urban Interface” report: nap.nationalacademies.org/catalog/26460/the-chemistry-of-fires-at-the-wildland-urban-interface.

Firefighting resources

Wildland and WUI fires may be fought by a mix of agencies from the local, state and federal levels. Responding firefighters could include seasonal federal and state wildland firefighters, state and local career firefighters, and volunteer firefighters from community-based fire stations.

Advances in command and coordination, especially at large, long-duration wildland and WUI fire events, have improved resource deployment and fire operations. However, these resources take time to get into place and are not immediately available on-scene. Therefore, the initial response usually comes from state and local fire departments.

Response differences between types of fires

Not all fires are the same; there are clear distinctions between types of fires and the strategy and tactics, equipment, and firefighter training needed to fight them. The chart below summarizes some key differences.

Fire type	Structural	Wildland	WUI
Involves	Built construction	Typically trees, grass, brush and other vegetation	The built (structural) environment adjacent to or intermixed with a wildland area
Strategy and tactics	Interior attack, exterior attack, search and rescue, ventilation, salvage, and overhaul	Direct (near the fire edge) attack and indirect (away from the fire edge) attack, “backfire,” creating firebreaks, using barriers, mop-up, and rehabilitation	Nonstandardized because WUI necessitates both structural and wildland tactics to sometimes be applied simultaneously; for the built environment, use primary and secondary tactics conducted by structural firefighters. Wildland firefighters engage with wildland tactics/equipment.
Equipment used	Engines, aerials, rescues, and other apparatus and tools configured for traditional structural fires	Engines, hand crews, heavy equipment, aircraft, pumping apparatus and tools designed to operate in the wildlands	A mix of apparatus and equipment depending on the structural and wildland involvement/threat facing the community, values at risk, and responding forces
PPE	Ensembles designed to protect the firefighter from the hazards associated with fighting structural fires (e.g., multilayered flashover protection, self-contained respiratory protection, etc.)	Ensembles specifically designed to protect the firefighter from hazards associated with fighting wildland fires (e.g., more lightweight and breathable fire-resistant materials, no or coarse filtering style respiratory protection, etc.)	Ensemble appropriate for the hazards encountered and strategy/tactics initiated

Training, equipment and personal protective equipment

As single-family dwellings are the most common fire risk they encounter, structural firefighters are trained, and more accustomed, to fighting 1 structure fire at a time. With fires occurring more often in suburban and rural areas adjacent to or intermixed with the wildland, structural firefighters are regularly involved in suppressing these fires. They encounter multiple structures involved, with entire neighborhoods and communities under threat, and the potential for a suburban or urban conflagration.

While some of our nation's firefighters are trained for both structural and wildland firefighting, the vast majority have little to no training for operating in an urban or suburban conflagration with multiple structures burning simultaneously.

Fire departments adapt their structural tactics, resulting in atypical strategies, in the hopes of reducing or eliminating fire spread. The results are less than successful in many cases as the multiple structures burning simultaneously overwhelms traditional interior attack strategies before commanders can react and request resources to meet the need of conflagration control. Quite simply, firefighters are operating in dangerous situations without the benefits of proper training, particularly the knowledge of fire behavior and growth in the WUI environment. Furthermore, structural fire departments encountering fire in the WUI environment have not had the resources to invest in wildland firefighting equipment, including proper PPE and proper footwear for both women and men. This leaves firefighting forces entering the WUI outfitted in PPE designed for entering a hostile fire environment confined by walls and ceilings. The structural firefighting ensemble many firefighters use on a daily basis is wholly inappropriate for fighting a wildland/WUI fire.

Today's structural firefighters must understand and be trained in interface strategies and tactics. To fight these fires effectively and safely, our nation's firefighters need additional training, adequate equipment and the proper PPE.

Water access

Particularly in the West, water is a limited and often contested resource. Drought conditions throughout the country are having a severe impact on firefighting efforts. Additionally, fires in watershed areas and the resulting burn scars can contaminate water resources due to the soil runoff and erosion created by the loss of root systems and ground cover. Debris and other contaminants can affect both availability of potable water and water treatment efforts.



State of Science

The CBO report, its concerns echoed by summit speakers and government leadership, bluntly described the reality of WUI fire risk: “Those elevated fuel levels, especially when accompanied by climate change-related higher temperatures and drought, contribute to fires that burn with greater severity, spread more rapidly and unleash more harmful impacts.”

There is much that remains to be learned about the health impacts on humans and the environment due to fires in the WUI. The National Academy of Sciences’ “Chemistry of Fires at the Wildland-Urban Interface” looks at the fundamental chemistry of these incidents to better understand exposures due to WUI fires and their impacts on human and environmental health. The report details a research agenda for WUI fires, defining a path toward understanding the true and complete impact of these fires.

Fires in the WUI: Facts and figures

Data tell us that WUI fires are only growing more severe and destructive in terms of size, severity and cost.

In her presentation, Chief Black also spoke about the myths that often surround wildland and WUI fires, such as that they only occur in the western states; are only in remote, uninhabited lands; and only occur seasonally. Data tells us that these points are not true. Wildland and WUI fires are not limited to the western U.S.; in fact, research suggests the Southeast may see large fires increase by 300% to 400% in the next 30 years. Colorado’s Marshall Fire burned 6,000 acres, destroyed more than 1,000 homes and businesses, and caused over \$500 million in damages in December, well outside the traditional wildland fire season.

Below are key data points sourced from a variety of agencies, organizations and metrics that underscore the immense, and expanding, risk of wildland and WUI fires.

🔍 Size.

- ▶ “About 8 million acres, on average, burned each year in wildfires between 2017 and 2021, more than double the average amount from 1987 to 1991. On average, a fire on federal lands is five times the size of one on nonfederal lands” (CBO, 2021).

🔍 Severity.

- ▶ Researchers have connected climate trends with higher burn severity, jeopardizing the ability of our lands to recover in the aftermath of a fire. The western states continue to experience increases in fires so severe that they threaten forest recovery.
- ▶ “Estimates of wildfires’ severity from satellite observations show that, on average, between 2014 and 2018, about one-third of the burned areas that were evaluated experienced high or moderate levels of burn severity, meaning that much of the vegetation was consumed and the effects were expected to be long-lasting” (CBO, 2021).

➤ Cost.

- ▶ “Wildfires in the United States inflict an estimated economic loss of between \$77.4 to \$378.7 billion each year. This includes everything from fire suppression to evacuations to property loss and recovery efforts” (U.S. Environmental Protection Agency (EPA), 2021a).
- ▶ Average annual federal spending on fire suppression totaled \$2.5 billion (in 2020 dollars) between 2016 and 2020. Other federal fire-related spending includes disaster assistance (which totaled \$5 billion of obligations for disasters declared over those five years) and some indirect costs (such as spending on health care following smoke exposure and the potential loss of revenues from federal timber sales)” (CBO, 2021).
- ▶ Environmental, health-related and economic effects of wildfires are felt most acutely in the immediate area. Smoke and air pollution from wildfires spread widely and can exacerbate many health conditions. Wildfires also tend to have negative effects on watersheds (CBO, 2021).

The role of climate change

USFA’s “Wildland Urban Interface: A Look at Issues and Resolutions” report described fire’s natural benefits but also its challenges, especially when it occurs in the WUI:

“Much of America’s landscape is a fire-adapted ecosystem, which means it depends on recurring fire to renew the forests, rangelands and habitats that support the plant and animal ecosystems. Before there were houses and roads, wildfires were primarily ignited by lightning and Indigenous peoples, and they naturally stopped at rivers and wetlands. These wildfires reduced overgrowth and sustained the natural ecosystems.

“When wildfire enters WUI areas, where human development meets or intermingles with undeveloped wildland or vegetative fuels (NWCG, 2022) that are both fire dependent and fire-prone, the effects on communities can be catastrophic, causing environmental and socioeconomic devastation.”

While fire is beneficial in many areas, climate change is adversely impacting wildfire norms. The CBO report cited research finding that “climate change-induced increases in temperatures leave vegetation and other fuels drier, increasing the potential for fires to ignite.” There is also an increased risk of ignitions, as research suggests that climate change will increase the occurrence of lightning.

Climate data helps us to understand the changes driving increased fire risk:

- In every year since 1997, average annual temperatures in North America have exceeded the 1910-2000 average (CBO, 2021).
- In 15 of the past 31 years, the portion of the country from the Rocky Mountains westward has been categorized as abnormally dry or in drought for all 12 months of the year (CBO, 2021).

Climate change also drives more extremes such as increased rainfall. More rain drives growth in vegetation, resulting in a buildup of fuels when drier conditions return. Other factors such as invasive pests and plants, some the result of climate change, have also had an impact on the health of our forests and grasslands.

Land management impacts

The cascading impacts of years of land management decisions have resulted in the presence of immense amounts of vegetative fuel. The CBO report spoke to the federal policy focusing on quick suppression and the prevention of wildland fires. This policy, in place for much of the 20th century, impacted the natural benefit of fire in removing and/or reducing vegetation. The USFA's report cited the lack of maintenance of our nation's land, including a "lack of workforce capacity, funding, restricted prescribed burn opportunities, air quality impact and public perception." The report also cited a 2019 Government Accountability Office (GAO) report: "Fire suppression over the last century and past land management decisions, including reduced use of mechanical methods and prescribed fire as land management tools, have resulted in over 100 million acres of federal land at high or severe risk to wildfire, and many more acres of state, tribal and private land are also likely at risk."

Demographic and community changes

A critical factor in the changing risk of WUI fires is the increasing number of Americans living within these lands. As technology and our society have changed, more and more people are moving into these previously uninhabited areas. Where a fire in an uninhabited, undeveloped area would pose little to no risk to humans, the population seeding of such areas dramatically changes the risk profile for fire departments. Areas where fires would have been monitored and allowed to "let nature run its course" now require a commitment of resources to control due to lives being at risk (the highest precedence in incident priorities well accepted by the fire service and taught by the National Fire Academy's (NFA's) incident command courses). Data points presented at the summit tell the story of our nation's move into the WUI.

- About one-third of the U.S. population, 99 million people, live in the WUI.
- It is estimated that 45 to 46 million structures, nearly half of U.S. building stock, are in the WUI.
- The WUI continues to grow by approximately 2 million acres per year (USFA, 2021).
- Between 2005 and 2020, wildfires have destroyed more than 89,000 structures in the United States, including homes and businesses. The most damaging wildfires have occurred in the last few years, accounting for 62% of the structures lost over the last 15 years (Headwaters Economics, 2020).



Emerging Issues Identified at the Summit

A wicked, but solvable, problem

As mentioned earlier, NFPA's Michelle Steinberg spoke of wildland and WUI fires as a wicked problem. Her presentation, and those of the State of Science and roundtable speakers, discussed some of the many developments currently in place or that can be implemented to lessen the impacts of this wicked problem. For example, she spoke about building community understanding that homes, as well as their "location design, materials, and immediate surroundings," can serve as fuel in a wildfire situation; there are also actions that can be taken to mitigate the likelihood of this happening.

Steinberg's presentation spoke of the breadth and depth of the challenge. While not insurmountable, she acknowledged that we may not always know the resources needed to mitigate these fires, but that we must use every tool possible. She also spoke to the importance of the concept that while wildfires are a natural occurrence that cannot be entirely prevented, wildfire disasters can be mitigated,

"Ending wildfire disasters will take not only better training and equipment for our fire service, but a major paradigm shift. We cannot hope to avoid continued massive property loss if suppression and response are our only tools. We must work to apply the hard-won knowledge of how homes burn in wildfires to upgrade existing homes, prepare communities, and change how we build new homes and subdivisions. In our planning and development decisions, we must involve the fire service to inform safe design to limit conflagrations and provide the best possible infrastructure for safe and effective response."

Modern building codes

Karl Fippinger of the ICC spoke about the impact of modern building codes in protecting our communities. The Insurance Institute of Business and Home Safety's research into wildfire (ibhs.org/risk-research/wildfire/) offers valuable information and understanding of the impacts of wildland fire on homes and buildings, but also of how certain fire-safe changes can increase the safety of a structure.

A troubling number of communities in our nation do not adopt or have older and weaker building codes. According to FEMA data cited by Fippinger, "only 25% of hazard-prone jurisdictions adopt the latest 2 editions of hazard-resistant building codes."

The ICC's International Wildland-Urban Interface Code is not widely adopted, yet the data suggests that adopting modern building codes makes a difference in the safety and resiliency of our communities, as seen in the data provided below. Fippinger discussed a concept used in the wildland fire code, that of a system of defenses beginning with a parcel, rising to the neighborhood, and finally, to a community. This type of systemic defense is built on key principles of fire-resistant construction, defensible space, emergency vehicle access, water supply and fire sprinklers.

In the context of our national housing challenges, Fippinger talked of the importance of “protect(ing) the homes we have and those we build.” Throughout the summit, roundtable and State of Science speakers framed the protection of our nation’s existing and future housing stock in the context of equity: that our nation’s fire problem disproportionately impacts on our vulnerable populations, including older adults, children, people of color, low-income populations and people with disabilities.

Training

Rick Swan of the IAFF highlighted the IAFF’s work to translate wildland/WUI training to a format more applicable to structural firefighters.

He offered important context on the relatively limited number of firefighters trained to fight wildland fires. There are only 25,000 wildland firefighters in the U.S.; in contrast, he noted that California alone has 35,000 career firefighters.

Finding effective ways to train our nation’s traditional structural firefighters for the risk of WUI fires is critical to protecting our communities. According to the NFPA’s 2021 “The Fifth Needs Assessment of the U.S. Fire Service,” 87% of fire departments responding to the survey provide WUI firefighting; 78% of these departments have unmet training needs. For departments that do provide wildland/WUI fire training, 47% do not have access to specialized WUI operations training. Swan also referenced the needs assessment survey completed in 2015. Fire departments indicated a need for WUI training in 2015, and this need continues to be seen in the 2021 survey.

To help address the gap in training needs, the IAFF built a training program that adapts available wildland training to meet the delivery needs of structural fire departments and their members. They focused on a delivery process that accounted for shift schedules and does not require departments to send their firefighters away for several days for training.

The result, “Responding to the Interface,” is built on the National Wildfire Coordinating Group Course S-215 but is adapted to fill the training and knowledge needs of structural firefighters tasked with fighting WUI fires in addition to their standard operations. The training is done with the department’s equipment, and no special tools or hoses are needed.

Departments working with IAFF to deliver this course are reporting positive results, with identifiable changes to operations and firefighter safety after training delivery. IAFF delivers train-the-trainer courses to help expand the program’s reach.

Swan also spoke to concerns about the impact on firefighter behavioral health due to the long-duration deployments often experienced by firefighters operating on wildland and WUI fires. As we have seen, the issues raised by the summit are interwoven and linked, with progress on 1 issue having the potential to positively impact other ongoing challenges.

Next steps

The deliberations meeting on Oct. 12 assigned a work group to explore further these issues.

Report: National Firefighter Apprenticeship Program

Summit statement

Invest in a national apprenticeship program to address the shortage of firefighters and to make the fire service more diverse and inclusive.

Background

The NFPA's "U.S. Fire Department Profile" (published in September 2022; based on data from 2020) estimates 1,041,200 career and volunteer firefighters in the U.S. This is about 62,100 less than in 2010. In 2010, the rate of firefighters per 1,000 citizens was 3.57. In 2020, the rate of firefighters per 1,000 citizens was 3.14. Since 2010, there has been a decrease of 91,250 volunteer firefighters. There is a need to address the shortage of firefighters comprehensively.

The data from 2020 only shows part of the story. The other part of the story can be found daily in newspapers showing how career and volunteer fire departments have been impacted by the firefighter shortage, including response time delays, closed stations, firefighter safety (training requirements and minimum staffing), and financial impact on municipalities. Here are a few examples:

- ❶ Fremont, Nebraska: Normally, they receive 75 to 100 applicants. In September 2022, they reported they had 4 to 5 applicants (<https://www.wowt.com/2022/09/26/quite-worrisome-fremont-fire-department-deals-with-applicant-shortage/>).
- ❷ Des Moines, Iowa: In March 2022, they had 30 open positions. They decided to shorten the training period from 12 months to 81 days for 12 recent hires who were already certified firefighters in other departments (<https://www.kcci.com/article/des-moines-fire-department-graduates-pre-certified-recruits/42009300#>).
- ❸ Lake County Fire and Rescue, Wisconsin: Due to staffing shortages, there have been response delays and frequent closing of stations. They are spending \$3 million over the course of the next 4 years to add new firefighter positions. The challenge now is to find firefighters (<https://www.jsonline.com/story/communities/lake-country/news/2022/11/11/lake-country-fire-chief-presents-plan-to-address-staffing-shortage/69640552007/>).
- ❹ Seattle, Washington: The Seattle Fire Department spent \$37.7 million in overtime in 2021, a 50% increase in overtime from 2019. The overtime expense is a direct response to staffing shortages. The department can only meet minimum staffing about a third of the time (<https://www.king5.com/article/news/local/seattle/seattle-firefighters-overtime-pay-2021/281-b03f76e6-ff9e-410d-a534-7f66f4dea129>).
- ❺ Prichard, Alabama: The Prichard Fire Department had to close 1 of its 3 fire stations due to staffing shortages in October 2022 (<https://mynbc15.com/news/local/highpoint-fire-station-in-prichard-closed-due-to-staffing-and-waging-issues>).

-
- Prince George’s County, Maryland: The Seat Pleasant Volunteer Fire Department, founded in 1915, closed its doors in December 2022 because of a lack of volunteers (<https://www.nbcwashington.com/news/local/seat-pleasant-volunteer-fire-company-closing/3224672/>).
 - Camden County, New Jersey: The Cedar Brook Volunteer Fire Company, founded in 1925, closed its doors in April 2022 because of a lack of volunteers (<https://www.nj.com/south/2022/04/after-97-years-nj-fire-station-to-halt-emergency-operations-due-to-low-staff-numbers.html>).
 - Minneapolis, Minnesota: Normally, the Minneapolis Fire Department receives about 2,000 to 2,500 applicants per application cycle. This year, they received only 700 applicants (USFA survey).
 - Pasco County, Florida: In the summer of 2022, Pasco County reported a shortage of 75 firefighters, the first time they experienced a significant lack of firefighters (USFA survey).
 - Louisville, Kentucky: The Louisville Division of Fire reported that their applicant pool is usually about 1,200 to 1,500; for the last 2 hiring cycles, it has been about 700 to 900 applicants (USFA survey).

Recruitment and retention challenges

In November 2022, the GAO released a report on federal agencies’ challenges in recruiting and retaining wildland firefighters. Although there has not been a comprehensive federally funded study on recruiting and retaining structural firefighters, there are many similarities in the challenges highlighted in this report. The report named the following barriers to recruitment and retention (source: <https://www.gao.gov/products/gao-23-105517>):

- Low pay.
- Career advancement challenges.
- Poor work-life balance.
- Mental health challenges.
- Remote or expensive duty stations.
- Limited workplace diversity.
- Hiring process challenges.

The NVFC reports that the significant factors contributing to the decline in volunteer firefighters include:

- Increased time demands.
- More rigorous training requirements.
- The proliferation of 2-income families who do not have time to volunteer.
- Longer commuting distances to and from an individual’s paying job.

TABLE 1. Retention and Recruitment Root Causes

SOURCES OF PROBLEMS	CONTRIBUTING FACTORS
Time Demands	• the two-income family and working multiple jobs • increased training time demands • higher emergency call volume • additional demands within department (fundraising, administrative)
Training Requirements	• higher training standards and new Federal requirements • more time demands • greater public expectation of fire department's response capabilities (broader range of services such as EMS, Hazmat, technical rescue, etc.) • additional training demands to provide broader range of services • recertification demands
Increasing Call Volume	• fire department assuming wider response roles (EMS, Hazmat, technical rescue. • increasing emergency medical call volume • increase in number of automatic fire alarms
Changes In The "Nature Of The Business"	• abuse of emergency services by the public • less of an emphasis on social aspects of volunteering
Changes In Sociological Conditions (In Urban And Suburban Areas)	• transience • loss of community feeling • less community pride • less of an interest or time for volunteering • two-income family and time demands • "me" generation
Changes In Sociological Conditions (In Rural Areas)	• employers less willing to let employees off to run calls • time demand • "me" generation
Leadership Problems	• poor leadership and lack of coordination • authoritative management style • failure to manage change
Federal Legislation And Regulations	• Fair Labor Standards Act interpretation • "2 in, 2 out" ruling requiring four firefighters on scene before entering hazardous environment • Environmental Protection Agency (EPA) live-fire burn limitations
Increasing Use Of Combination Departments	• disagreements among chiefs or other department leaders • friction between volunteer and career members
Higher Cost Of Housing (In Affluent Communities)	• volunteers cannot afford to live in the community they serve
Aging Communities	• greater number of older people today • lack of economic growth and jobs in some towns
Internal Conflict	• disagreements among departmental leaders • friction between volunteer and career members

Diversity, equity and inclusion in the fire service

The fire service struggles to recruit and retain women and people of color. The most recent data from the Bureau of Labor Statistics in 2019 reported that 11.6% of career firefighters were Hispanic or Latino, 8.5% were African American, and 1.3% were Asian-Pacific Islanders. Women represent 11% of volunteer firefighters and 5% of career firefighters, according to the NFPA's 2022 "U.S. Fire Department Profile" report based on 2020 data.

The International Association of Women in Fire & Emergency Service (Women in Fire) reports that data on the number of women firefighters and fire chiefs is difficult to quantify at this time. However, they are working on establishing better statistics. They estimate that there are about 6,200 women currently working as full-time career firefighters and officers, and they also estimate that there are about 35,000 to 40,000 women volunteer firefighters.

To learn more about diversity, equity and inclusion in the fire service, listen to the USFA Podcast "Achieving Diversity, Equity and Inclusion Within the Fire Service" for a conversation with Dr. Jennifer Taylor, director of the Center of Firefighter Injury Research and Safety Trends from the Dornsife School of Public Health at Drexel University: <https://www.usfa.fema.gov/podcasts/2022-episode-10.html>.

State of Science

The 2022 U.S. Fire Administrator's Summit on Fire Prevention and Control featured 3 presentations about the fire service's recruitment and retention challenges.

The first presentation was from Chief John Oates, CEO of the International Public Safety Data Institute. Chief Oates discussed the data-informed insights on recruitment and retention. The data, he reported, indicates that historically, the fire service hasn't had to recruit and retain members actively. There were usually too many applicants for career positions, and communities fully supported their local volunteer department generation after generation. But that has changed, and dramatically so after the past few years, due to retirements and the effects of the pandemic. Career fire departments now commonly report lower applications and challenges to having a diverse workforce. Volunteer fire departments indicate similar low applicants with an increased demand for service, especially related to EMS.

The second presentation was from Fairfax County Fire and Rescue Department (Virginia) Chief John Butler about recruitment challenges for career departments focused on diversity, equity and inclusion. He outlined his department's strategies to attract a more diverse workforce. The department updated its recruitment strategies to have a diverse team of recruiters, show diversity in its advertising, and increase data analysis of applicant demographics to determine where they can continue to grow.

The final presentation was from Chief Brita Horn of the Rock Creek Volunteer Fire Department (Colorado), who presented on the recruitment challenges for volunteer fire departments. She discussed that the fire service's challenges in recruiting and retaining volunteers are not unique. In America, volunteerism is generally declining due to societal changes and demands on time. Also, she noted that potential volunteer firefighters might see it as a risky volunteer opportunity. She also introduced the concept of a national firefighter apprenticeship program, which could benefit both career and volunteer departments.

Next steps

The deliberations meeting on Oct. 12 assigned a work group to explore further the concept of a national firefighter apprenticeship program to support recruitment efforts for career and volunteer fire departments.

The DOL launched the American Apprenticeship Initiative (AAI) in 2015 as a workforce-training model for specific occupations. In 2015, approximately \$100 million funded 25 apprenticeship programs managed by states, nonprofit organizations, academic institutions and learning centers. In 2019, AAI awarded \$1.5 million to 3 community-based organizations to increase women's employment in nontraditional occupations. Additional grants since 2015 have helped support apprenticeship programs in many industries.

The AAI has a robust website (apprenticeship.gov) that allows potential apprentices to search by industry or occupation. Currently, the industry types include 20 industries, including construction, health care, manufacturing, real estate, mining, retail trade, transportation and utilities. There is not a category in "industry types" for the fire service or public service in general. If a potential apprentice searches specifically for firefighter under occupation, they will see firefighter-related apprenticeship programs. As of Dec. 2, there were 50 firefighter-related apprenticeship programs on the website. A potential apprentice would need to email each individual apprenticeship program to receive information about the apprenticeship. Basic information, such as if the apprenticeship program is a paid position, how long the apprenticeship program is, and the structure of the apprenticeship, is not provided.

A national firefighter apprenticeship program could have several models for agencies to build their programs to fit their needs and resources. What may be helpful for a large metropolitan department may not apply to a rural volunteer department. However, providing sample programs will make it easy for a fire department to engage in the national firefighter apprenticeship program and allow potential apprentices to explore working with a fire department either as a volunteer or as a career.

The DOL released a teacher apprenticeship program in November 2022, which broke down the apprenticeship lifecycle into 5 developmental processes which can be replicated with the fire service.

- Explore: Determine how the fire service can benefit from apprenticeship programs applied to volunteer, career, combination and federal fire departments. Analyze how other industry apprenticeship programs are similar and different from the needs of the fire service.
- Build: Use the tools developed by DOL to create the infrastructure of a national fire service apprenticeship program.
- Partner: Collaborate with private and public partners that can help structurally and financially with a national fire service apprenticeship program.
- Register: Conduct outreach to the fire service to register fire departments for the national fire service apprenticeship program.
- Launch: Recruit apprentices and measure the effectiveness of the apprenticeship program.

The work group will continue to work on the feasibility and necessary steps toward the creation and implementation of a national firefighter apprenticeship program.



BUCKY

Special Group
Participant
October 10 - October 11, 2022

PITT

Special Group
Participant
October 10 - October 11, 2022

Report: Comprehensive Firefighter Cancer Strategy

Issue statement

Establish a comprehensive firefighter cancer strategy that invests in research, provides access to cancer screening for firefighters, and reduces and eliminates PFAS exposure.

A shared and growing concern

It is clear from the summit proceedings that cancer remains a critical issue for the fire service. The concern is shared by the highest levels of the federal government, from President Biden and the other federal representatives. President Biden said: “Cancer is a leading killer of firefighters. Toxic substances you’ve been exposed to as part of your job are almost certainly — certainly connected to those cancer diagnoses. And we’re doing — we’re going to do something about it. The Cancer Moonshot is bringing together every part of our government to cut cancer death rates in half and to end cancer as we know it, including by addressing environmental and toxic exposures to prevent cancer.”

DHS Secretary Alejandro Mayorkas also spoke about his growing knowledge of cancer rates in firefighters. Since learning of widespread cancer within the fire service, more data he’s looked at “only increased and elevated (his) concern. Our new Office of Health Security can and will play an active role in really supporting prevention programs and responsive care.”

DHS Assistant Secretary John Tien asked if fire service culture accepted the need for proactive care such as screenings. Edward Kelly, general president of the IAFF, spoke to the growing acceptance of the need for proactive care but cautioned that changing culture requires ongoing education and awareness. Chief Donna Black, president of the IAFC, provided additional context on volunteer departments’ challenges with providing their members’ physicals and other screenings.

Assistant Secretary Tien, referencing parallels between firefighter exposures and that of military members exposed to burn pits, spoke to the value of partnerships. General President Kelly confirmed that the fire service is open to partnering with organizations such as the Department of Veterans Affairs, citing his organization’s ongoing collaboration with the American Cancer Society to educate physicians about the risks faced by firefighters. President Biden also spoke to the need to address PFAS exposures, “so-called ‘forever chemicals’ that for years have been in your gear, your equipment, and the suppression agents that you depend on to do your job. I’m determined — I’m absolutely determined to make sure you have the gear that protects you without making you or your family sick.”

FEMA Administrator Deanne Criswell asked about cancer diagnoses growing among younger firefighters in the context of the need for better, safer turnout gear. Citing studies finding PFAS in firefighter turnout gear, General President Kelly said: “One of the factors that we can’t avoid, (is) the obvious exposures we’re getting from our bunker gear every time we go out the door. It’s mind-boggling that we’re in this situation. Defies logic.”

General President Kelly noted correctly that PFAS is a danger not only to firefighters but to our communities and the environment's long-term health. The replacement of firefighter gear will also need to account for the removal and safe disposal of existing gear to prevent further PFAS contamination in our communities.

Targeted actions

Throughout the summit, presenters spoke to the importance of the recent declaration by the International Agency for Research on Cancer (IARC) that a firefighter's occupational exposure is "carcinogenic to humans." The IARC Working Group found "sufficient evidence" to connect occupational exposure as a firefighter with mesothelioma and bladder cancer. They also found "limited evidence" of a link between firefighting and colon, prostate and testicular cancer. This finding, the result of years of research, is a game-changing opportunity to further consolidate hard-won gains in research and knowledge into profound impacts.

Research

Greater investment in research will expand our understanding of the mechanisms between occupational exposures and cancer, why firefighters are at heightened risk from some cancers, and to better understand the cancer risks of our understudied populations, including women and minorities.

More information:

- ❖ "Firefighter Resources, Cancer and Other Illnesses": www.cdc.gov/niosh/firefighters/health.html.
- ❖ IARC: "Occupational Exposure as a Firefighter": <https://monographs.iarc.who.int/iarc-monographs-volume-132m>.
- ❖ Safety+Health Magazine: "Firefighting officially a cancer-causing profession, World Health Organization says": www.safetyandhealthmagazine.com/articles/22930-firefighting-officially-a-cancer-causing-profession-world-health-organization-says.
- ❖ PBS Newshour: "How firefighters' life-saving work puts them at a higher risk of cancer": www.pbs.org/newshour/show/how-firefighters-life-saving-work-puts-them-at-a-higher-risk-of-cancer.

Access to cancer screenings

Preventive screenings can identify cancer in its earliest stages when positive treatment outcomes are more likely. However, it remains difficult for individual firefighters to receive early screenings as current screening guidance does not account for their occupational exposures. Revised screening guidance can help medical professionals and insurance companies understand the need to screen firefighters based on their higher cancer risk.

More information:

- ❖ IAFF/Firefighter Cancer Support Network: Firefighter Cancer Awareness Month: www.iaff.org/cancer-awareness-month.
- ❖ Annual Evaluations and Primary Care Provider Information: firefightercancersupport.org/wp-content/uploads/2020/01/Primary-care-cancer-evaluations-for-firefighters_HamrockMD_2016_FCSN.pdf.

Reduce and eliminate PFAS exposures

Per- and polyfluoroalkyl substances, often referred to as “PFAS,” are likely carcinogenic chemicals that degrade very slowly, earning the label “forever chemicals.” PFAS have been found in the blood of firefighters, firehouses, some firefighting foams, and perhaps most concerning, bunker gear. These chemicals are intensifying exposures and raising cancer risk. Next-generation PPE can remove a significant component of this risk.

More information:

- IAFF/Metro Chiefs: “Firefighters told to wear protective gear less to limit exposure to ‘forever chemicals’ linked to cancer”: www.nbcnews.com/health/health-news/firefighter-gear-may-contain-chemicals-linked-cancer-rcna44511.
- NC Health News: “Firefighters and supporters are pushing hard for PFAS-free turnout gear”: www.northcarolinahealthnews.org/2022/09/13/firefighters-are-pushing-for-pfas-free-turnout-gear.
- EPA: “PFAS Explained”: www.epa.gov/pfas/pfas-explained.
- IAFF: “PFAS and Fire Fighter Turnout Gear”: www.iaff.org/pfas/.

State of Science

In 2010, NIOSH found firefighters have excess cancer risk compared to the general population for multiple cancers, including testicular, brain, prostate and colon cancers, as well as mesothelioma, multiple myeloma and leukemia. Research completed and in progress continues to build our knowledge of firefighter occupational cancer.

Exposure pathways and risk factors

Research has also taught us more about the mechanisms of exposure. We now know that inhalation, absorption and ingestion of contaminants are exposure pathways. Not only are these pathways a critical educational point to help firefighters in their individual effort to mitigate their exposures, but these pathways have also shed light and led to more research questions on how and why certain cancers may develop. They also lead to the same impacts and improvements in protective gear to better combat these exposures.

Several factors contribute to a firefighter’s higher risk of developing cancer, including the products of combustion found on the fireground and in diesel exhaust, among others. Shift work is also considered a contributing factor.

A game-changing reassessment

Over the last decade, the collaboration of researchers, firefighters and fire service organizations, often with federal funding, has built a greater understanding of how occupational exposures can impact a firefighter’s health. The result is a game changer in the fight to protect firefighters from occupational exposure leading to a higher risk of developing cancer.

The IARC declared a firefighter’s occupational exposure as “carcinogenic to humans.” The Working Group found “sufficient evidence” to connect occupational exposure as a firefighter with mesothelioma and bladder cancer. They also found

“limited evidence” of a link between firefighting and colon, prostate and testicular cancers; melanoma; and non-Hodgkin’s lymphoma.

The announcement noted “strong mechanistic evidence in exposure firefighters,” including “genotoxicity, epigenetic alterations, oxidative stress, chronic inflammation, and modulation of receptor-mediated effects.” With the complete deliberations set to be published in 2023, this designation will help firefighters as they seek funding, policy changes and health care.

Emerging issues identified at the summit

Research

Presenter Kenny Fent, Ph.D., CIH, lead for NIOSH’s National Firefighter Registry (NFR) Program, spoke to many unanswered research questions. The fire service and its research partners have built a robust research agenda that can answer many of these questions with effort, time and funding.

Puzzle piece

NIOSH’s NFR will help address some of the research questions. Using an analogy of a missing puzzle piece, Dr. Fent explained the critical importance of the NFR in connecting the occupation of firefighting with a cancer diagnosis. Cancer is a reportable illness, but most states do not capture detailed info about the individual’s occupation. With the NFR, researchers can connect a firefighter’s cancer diagnosis with their occupational history.

The NFR is a voluntary registry designed to build detailed knowledge about cancer in the fire service through a population of diverse firefighters. Intending to register 200,000 firefighters via a web portal, the NFR’s research over the next 10 years seeks to better understand the nexus between firefighting and cancer. Firefighters will self-report workplace and personal information, while the NFR works with fire agencies to track trends and exposure patterns. Finally, the NFR will link to other databases, such as population-based cancer registries and the National Death Index, to detect cancer diagnoses and deaths.

Prevention and PFAS

Summit attendees heard from Jeffery Burgess, MD, MS, MPH, of the Mel and Enid Zuckerman College of Public Health at the University of Arizona regarding the Fire Fighter Cancer Cohort Study (FFCCS). The study is working toward preventing cancer by understanding all aspects of exposure and the resulting impact on an individual. A collaborative funding effort with a 10-year plan for study, FFCCS is enrolling firefighters from across the country. Their research confirmed that all firefighters operating on the fireground are experiencing exposures that “lead to epigenetic changes associated with increased cancer risk.” Further research into their data has determined that, in both career and volunteer firefighters, PFAS levels in their blood are elevated compared with the general public. Their research has gone a step further, with an additional project studying career firefighters determining that the elevated PFAS levels were associated with epigenetic changes related to higher cancer risk.

The FFCCS’s focus on prevention has helped the fire service to understand the need for decontamination processes, including a finding that skin wipes reduce exposures and, therefore, their toxic impact. It has also helped us understand that firefighters have a greater need for early and thorough cancer screenings.

Research in progress or under evaluation will continue this powerful impact on the fire service's understanding of the connections between exposures and cancer risk.

Funded by a series of federal agencies and local fire departments, the FFCCS has no designated long-term funding source. Securing long-term research funding is a barrier to fully implementing the fire service's research goals.

FFCCS's research supported the change in the IARC's designation. This research, like the NFR, requires significant time, effort and funding. It also needs firefighters to volunteer to be studied and for the fire service to continue supporting researchers as they work through these research questions.

Health impacts on women firefighters

Dr. Sara Jahnke of the Center for Fire, Rescue & EMS Health Research spoke to the difficulties in understanding the impact of firefighting on a woman's health. The issues raised by the summit are global and connected, as the concerns about health impacts and this lack of research have a bearing on the recruitment and retention of women. Data shows that women firefighters perceive "these issues as severely understudied and a significant concern."

Dr. Jahnke compared the number of women operating in other, similar fields, including law enforcement and the military. Both have more women in their ranks, accounting for 13% of police officers and 14% of the military. In comparison, women comprise an estimated 3.5% to 5% of fire and EMS. The relatively low number of women in the fire service presents a challenge for researchers as they can be harder to find and collect data on.

Dr. Jahnke noted that the IARC Working Group applied its recent finding to men and women. Seminal research, including the Daniels study used by the IARC Working Group in its considerations, has varying outcomes for women. However, they have a factor in common: The number of women enrolled in each study was limited.

Reproductive health is an area of particular concern; a recent study found "miscarriage rates among female firefighters were at least 2.3 times higher compared to the U.S. national average of 10%" while "volunteer firefighters had a 42% higher rate of miscarriage than career" firefighters (Jung, 2021).

The combined efforts of the FFCCS and the National Fire Registry Subcommittee, along with the communication and organization of the representative group, Women in Fire, are working to address the gaps in understanding the impacts of occupational exposure on women firefighters. Both projects have set research goals that will further tackle these questions.

The results have also pushed researchers to ask other questions, such as how firefighting impacts men's reproductive health. What are the effects on the health of the children of both women and men firefighters?

Next steps

The deliberations meeting on Oct. 12 assigned a work group to explore further a comprehensive firefighter cancer strategy.



Report: Firefighter Behavioral Health Resources

Summit statement

Provide behavioral health resources and suicide prevention initiatives for all firefighters.

Background

Firefighters and other rescue personnel develop post-traumatic stress disorder (PTSD) at a similar rate to military service members returning from combat, according to an August 2016 study from the Journal of Occupational Health Psychology. The report reveals that approximately 20% of firefighters and paramedics meet the criteria for PTSD at some point during their careers. This compares to a 6.8% lifetime risk for the general population. The connection between PTSD and traumatizing rescue work is evident.

In June 2022, the Ruderman Foundation released an update on their 2018 white paper on “Mental Health and Suicide of First Responders.” Their key findings related to firefighters are: The leading known reason for firefighter and EMS suicides stems from marital/relationship issues, and firearms were the most prevalent method of suicide by firefighters and EMS personnel.

The Ruderman report also noted an urgent need to improve the registration and research of all first responder suicides. The Law Enforcement Suicide Data Collection offers the law enforcement officers’ community a better understanding of the issues related to law enforcement suicide. This database is managed by the Federal Bureau of Investigation’s (FBI’s) Uniform Crime Reporting Program. There is no comparable data collection for the fire service. The Ruderman Foundation report can be found here: https://rudermanfoundation.org/white_papers/the-ruderman-white-paper-update-on-mental-health-and-suicide-of-first-responders/.

The U.S. Department of Justice’s (DOJ’s) Law Enforcement Officer Safety and Wellness Program offers programs and resources to the law enforcement community, including programs related to mitigating stress factors for family members, suicide prevention, videos, guides and training. There is no comparable program for the fire service.

The NFPA’s August 2022 report, “Firefighter Fatalities in the U.S. in 2021,” focuses on line-of-duty deaths while on duty. However, the NFPA is also monitoring issues related to firefighters who die by suicide. The report notes that the Firefighter Behavioral Health Alliance validated 89 firefighters and 16 emergency medical technicians (EMTs) and paramedics who died by suicide in 2021.

The complexities and contributing factors related to data on firefighters who died by suicide are difficult to quantify. However, an academic study has examined the relationship between post-traumatic symptoms and suicidal ideation among firefighters. In 2015, Florida State University conducted a national survey of more than 1,000 firefighters. The report found:

- ❶ 46.8% of respondents reported suicide ideation (thoughts of death by suicide).
- ❷ 19.2% of respondents reported having had plans of death by suicide.

-
- ④ 15.5% of respondents reported having attempted death by suicide.
 - ④ 16.4% of respondents reported having inflicted nonsuicidal self-injury.

National behavioral health resources

National fire service organizations are addressing the behavioral health needs of the fire service with limited resources. Some samples of programs include:

- ④ The NVFC's Share the Load program offers the NVFC First Responder Helpline, a 24/7 confidential crisis hotline to assist firefighters or their family members. Share the Load also has a directory of behavioral health professionals familiar with the fire service culture. They also offer video and in-person training, downloadable toolkits and guides, and other resources to help a fire department raise awareness of behavioral health concerns and to help firefighters one-on-one. More information: <https://www.nvfc.org/programs/share-the-load-program/>.
- ④ The IAFF has been an advocate and a leader in behavioral health resources for decades. In 2017, they opened the IAFF Center of Excellence for Behavioral Health Treatment and Recovery in Maryland. They will be opening a second Center of Excellence in 2023. They also offer an online behavioral health awareness course to anyone, regardless of whether they are an IAFF member. They have a robust and well-trained peer-support training program and have trained thousands of firefighters to be peer-support members. IAFF also has a resiliency training program offered to its members. More information: <https://www.iaff.org/behavioral-health/#online-behavioral-health-awareness-course>.
- ④ The First Responder Center for Excellence (FRCE), an affiliate organization of the NFFF, has reports, research and downloadable resources on behavioral health in the fire service. More information: <https://www.firstrespondercenter.org/resources/behavioral#sort=position&sortdir=desc>.
- ④ The Medical University of South Carolina's Center for Firefighter Behavioral Health, in partnership with the FRCE and NFFF, developed technology-based resources for clinicians, firefighters, and friends and family of firefighters. More information: <https://cffbh.org/#About>.

Federal support of firefighter behavioral health

H.R. 6943, the Public Safety Officer Support Act, was signed into law in August 2022. The law allows public safety officers, including firefighters, to seek disability benefits related to PTSD linked to severe trauma due to work-related PTSD and acute stress disorders or attempted suicide. The law also allows families of firefighters who die by trauma-linked suicide to apply for public safety officers' death benefits. The text of the Public Safety Officer Support Act can be found here: <https://www.congress.gov/bill/117th-congress/house-bill/6943/text>.

H.R. 7666, the Restoring Hope for Mental Health and Well-Being Act of 2022, was passed by the House in June 2022 and is currently in the Committee on Health, Education, Labor and Pensions. This act addresses comprehensive mental health programs and specifically mentions the "prevention and treatment of mental and behavioral health issues for veterans, members of the Armed Forces, first responders, tribal populations, and other specified groups." Updated information on this act can be found here: <https://www.congress.gov/bill/117th-congress/house-bill/7666>.

Next steps

The deliberations meeting on Oct. 12 assigned a work group to explore the needs of the fire service to combat the behavioral health crisis. They will be assessing what resources are already available, the most effective dissemination methods of the resources, what data is needed to address behavioral health issues further, and strategies with other government agencies to address the behavioral health crisis in the fire service.

During a fire today, you have
the least amount of time to
safely exit your home than at
any time in history.

U.S. Fire Administrator's Summit on Fire Prevention and Control



Report: Codes and Standards Implementation and Enforcement

Summit statement

Create safer communities by implementing and enforcing codes and standards, especially in the WUI and underserved and vulnerable populations providing affordable and fire-safe housing.

Background

More than 300 codes and standards influence fire and life safety in the built environment. These codes operate holistically, affecting fire and life safety throughout the entire structure. The codes are developed in a consensus process, utilizing the expertise of builders, contractors, manufacturers, academia, designers, researchers, public safety and many others. A 2019 National Institute for Building Sciences report found that model building codes improve building resilience to natural disasters and save \$11 for every \$1 invested. We can create safer communities by assisting local jurisdictions in implementing and enforcing these codes and standards.

It is essential that building, fire and life safety codes be adopted in their entirety and that state and local governments adopt the most up-to-date versions of the codes. Additionally, state and local governments must take responsibility not only for promoting the use of the current codes but also enforcing the use of those codes and standards. The federal government can help by incentivizing compliance and providing funding to local jurisdictions for code implementation, inspection and enforcement.

Proper use of life-saving technology, like smoke alarms, carbon monoxide alarms and automatic fire sprinkler systems, is proven to save lives. All modern buildings require these systems, and the fire codes must be consistently and aggressively enforced.

Fire disproportionately impacts our vulnerable populations: older adults, children, people of color, low-income populations and people with disabilities. This is an equity issue. Safe housing and affordable housing should not be mutually exclusive concepts.

A Jan. 5 fire in the Fairmount neighborhood of Philadelphia, Pennsylvania, resulted in 12 fire fatalities, including 9 children, with only 1 survivor. Despite the first engine company arriving in 2 minutes and a heroic effort by the Philadelphia Fire Department members, they could not save all the residents. The public often views this type of fire, while tragic, as an outlier or an anomaly. Unfortunately, it is not. Severe fires are too common in the U.S. and lead to deaths, injuries, and displaced individuals and families.

In 2021 alone, Philadelphia experienced 47,864 fire incidents, 3,884 structure fires, 266,090 EMS incidents, 362,101 emergency calls and 39 fire-related fatalities. Between 2000 and 2019, the city experienced 692 fire-related fatalities. This is taxing for even the most well-equipped and trained fire department, and it is not a situation unique to Philadelphia.

Only 4 days after the tragic fire in Philadelphia, the Twin Peaks fire in the Bronx resulted in 17 civilian fatalities. While a historic number of residents were saved, the FDNY conducted 60 EMS transports, including 30 cardiac incidents.

There were 29 fire-related fatalities between these 2 fires in the opening days of 2022. While this is historic, it is not unprecedented. Civilians and firefighters continue to lose their lives in buildings with inadequate fire safety features. We must protect all residential housing. This includes advocating for automatic fire sprinklers, smoke and carbon monoxide alarms, residential education programs in multifamily housing, and requiring automatic fire sprinklers in all newly constructed single-family housing. Residential buildings without these basic fire and life safety technologies are nothing less than substandard housing.

Not only are our neighbors dying in fires, but fire can destroy entire communities. Most local businesses that are destroyed by fire never reopen. This expands food deserts, exacerbating inequality in neighborhoods already suffering. Increased homelessness due to individuals and families being displaced by fire exacerbates inequality. The disproportionate impact of fire on black and indigenous people of color is more than a matter of inequity; it is a matter of justice.

Nearly a million households live in public housing units in the U.S., and fire safety improvements in public housing must receive heightened attention. In 1992, Congress passed the Federal Fire Safety Act, requiring newly constructed multifamily housing units to have fire sprinklers. The U.S. Department of Housing and Urban Development (HUD) estimates that approximately 570,000 multifamily public housing units are still in the inventory constructed before the sprinkler requirement. A significant portion still lacks fire sprinklers.

Since 2010, 35,140 people have died in fires, and only 65 of those individuals died in buildings where fire sprinklers were present. A study by the NFPA found that civilian fire death and injury rates in buildings with sprinkler systems were 89% and 27% lower. Automatic fire sprinklers are a proven technology that saves lives, and we must invest in retrofitting public housing with fire sprinkler systems.

Additionally, HUD must ensure all public housing units are equipped with working smoke alarms that are installed and maintained under the relevant codes and standards. Nearly 3 out of 5 home fire deaths are caused by fires in properties without smoke alarms or smoke alarms that failed to operate. HUD must provide resources to public housing authorities to either retrofit housing units with hardwired smoke alarms or require the installation of tamper-resistant, long-life, battery-powered smoke alarms.

Through linking data with the Centers for Disease Control and Prevention's (CDC's) Social Vulnerability Index, we can see that socioeconomic status, household composition, racial and ethnic makeup, and housing status all play a role in a community's vulnerability to fire and the risks faced by firefighters. The fire service must continue to invest in data collection and analysis to promote the use of strong fire and life safety codes and standards. This includes continuing to build out robust federal resources that support data collection at the state and local levels.

Residential fires burn hotter and faster than they did in the past. In a fire today, you have the least time to safely exit your home than at any point in history. The severity of these fires has grown incredibly. Fire-related fatalities in 1- and 2-family homes have increased by 20% since 1980. In the period between 2012 and 2019, this increase is 30%.

There are several factors leading to the increased severity of residential fires. Homes constructed today tend to be larger than in the past, leading to more

complex escape routes and increased evacuation times. New homes tend to have open spaces, making it easier for smoke and fire to spread. Modern furnishings are made from synthetics and plastics that burn hotter and release more toxins than traditional materials. Positive evolutions in construction have led to lighter building materials and more energy-efficient homes, but they have also led to heat capture. And new technologies, such as lithium-ion batteries, can be new ignition sources in the home. All of this leads to faster fire propagation, shorter time to flashover, rapid changes in fire dynamics, shorter escape times, shorter time to collapse, and other new and unknown hazards.

Depending on where you live in the nation, local fire department response time from the initial notification could be 6 or more minutes. In modern homes, flashover can occur in 3 to 5 minutes, and homes must meet the current model building codes. Technologies like smoke alarms notify residents of an emergency and allow them time to escape. Automatic fire sprinklers provide active suppression, containing a fire to the point of origin and providing local fire departments time to respond.

Evolutions in the built environment include the expansion of large warehouses to support faster shipping for on-demand e-commerce. We are seeing the expanded use of lithium-ion batteries in vehicles, charging stations, mobility devices, energy storage systems and many more technologies. Construction practices are changing and now involve using plastic blocks and tall wood buildings. These innovations are exciting and help support our changing lifestyle. However, they also come with risks if not properly managed. As new building technologies are developed and implemented, it is imperative that fire and life safety is incorporated into these systems as they are incorporated into our society. Evolutions in the built environment will continue. However, we cannot let them outpace fire and life safety.

A fire-safe America is possible. We have the ability to ensure all buildings are safe and functional for those who live there, those who work there and the first responders that may need to respond to an emergency there. The solutions exist today with smoke alarms, automatic fire sprinklers, and properly trained and equipped firefighters. The combination of early warning, early suppression and emergency response will save lives.

However, the fire problem in America is getting worse, partly because local and state governments are not adopting the latest codes and standards in their entirety. Far too often, policymakers at the state and local level of government, under pressure from special interest groups, are amending essential fire and life safety provisions out of the codes to maximize profits at the cost of human lives. Only California, Maryland and the District of Columbia have adopted building and fire codes with the residential fire sprinkler requirements intact. Efforts to weaken building and fire codes through the adoption process have and will cost lives.

State and local governments must not bow to pressure from special interest groups and instead must adopt fire, building and life safety codes in their entirety. Additionally, the federal government must leverage its ability to drive code adoption by requiring compliance to access federal housing programs and funding.

Climate change is having a significant impact on our nation's wildfire problem. Globally, we are experiencing extreme weather events and significant shifts in temperature. Wildfires encountered by today's fire service are unlike those of a generation ago. Severe droughts and longer periods of hot weather alternating with

bouts of heavy precipitation contribute to vegetation growth. Fluctuations between an overabundance of rain and severe droughts with extreme high temperatures result in that vegetation becoming dead and dry, contributing to fire intensity and spread. To further exacerbate this situation, many communities in the WUI are facing water shortages, impacting their ability to conduct fire suppression. These impacts, along with the decisions our society has made about using and managing landscapes, have created today's wildfire disaster potential.

The USFA defines the WUI as "the zone of transition between unoccupied land and human development. It is the line, area or zone where structures or other human development meet or intermingle with undeveloped wildland or vegetative fuels." Between 1990 and 2010, the WUI grew 33% to encompass 190 million acres. During this same time, the number of homes in the WUI grew by more than 41%. Today, the WUI is estimated to encompass over 210 million acres and is populated by 99 million people, nearly one-third of the U.S. population. More than 46 million residents and 70,000 communities are currently at risk from wildland fires.

Among the fuels impacting the wildland fire problem is the built environment, including our homes and businesses. A recent analysis of HUD and census data shows that 94% of the existing building stock in the U.S. are residential structures. 90% of that stock, approximately 100 million structures, are single-family homes. Nearly half of these homes are local in areas at risk of wildland fires, and only a small fraction of them have been sited, designed and built using some kind of standard or code addressing the wildfire risk.

A recent housing survey indicates that most homes in wildfire-risk areas have vegetation surrounding them, many with vegetation up close to the home — within 5 feet of the exterior walls. Building materials science and fire science research on how homes ignite are key to our understanding of preventing the urban conflagrations we frequently see when wildfires occur.

According to the NIFC, in 2021, there were 59,000 wildfires in the U.S., which burned 7.13 million acres and destroyed 5,972 structures, of which 3,577 were residences. Despite this, FEMA reports only 25% of hazard-prone jurisdictions in the U.S. have adopted the latest 2 editions of hazard-resistant building codes.

Extensive post-fire analyses, experiments and scientific models provide clear direction on addressing the risk of home ignition and wildfire disaster. These concepts are not limited to new construction. Fire-resistant building materials, design and construction can address exterior fire exposure and thwart the entry of embers into buildings' interiors. These actions can also be taken to upgrade or retrofit existing homes. Modern building and fire codes incorporate several key concepts for regulating the built environment. These include the use of ignition-resistant construction, the application of defensible space, the creation of emergency vehicle access, the utilization of sufficient water supply, and the installation of automatic fire suppression technologies such as fire sprinklers.

A McClatchy analysis of the 2018 Camp Fire in California found that a 2008 building code designed for California's fire-prone regions requiring fire-resistant roofs, siding and other safeguards appears to have protected more than 100 homes in the path of that fire. Of the 350 single-family homes in the path of the Camp Fire that were built after 2008, 51% were left undamaged by the fire. By contrast, only 18% of the 12,100 homes built before 2008 escaped damage. We need to do better when it comes to protecting the homes we have and the homes we are building.

Climate change is not the sole cause of wildland fire disasters; how we manage our forested landscapes has a major impact. There is significant overgrowth due to a history of suppressing wildfires that would otherwise serve a natural and beneficial function of clearing out certain species and enhancing habitats for others. When we build without fire in mind, it can result not only in environmental degradation and the disturbance of ecological patterns but also in whole neighborhoods where every structure is highly vulnerable to ignition. This is another element we can and must control.

By embracing current fire and life safety codes and standards at all levels of government, we can make great strides in addressing the fire problem in our nation. Together we can create safer communities by implementing and enforcing codes and standards, especially in the WUI and underserved and vulnerable populations providing affordable and fire-safe housing.



Report: Elevation of the Fire Service in Federal Policy Development

When federal programs and initiatives are developed to meet the needs of first responders, engagement by the relevant federal agencies representing these disciplines is imperative, as is involvement by representatives from these fields as appropriate. To this end, it is essential to elevate the nation's fire service in the development and prioritization of federal policies programs related to public safety, such as first responder behavioral health, building and fire codes, and the 5 mission areas of the National Preparedness Goal (prevention, protection, mitigation, response and recovery).

Nearly every Cabinet-level department in the federal government plays a role in addressing the fire problem in America. They are home to numerous agencies and programs impacting the nation's fire and emergency services. While the USFA and the programs within the DHS's FEMA are the most prominent, nearly every department in the federal government touches upon the fire and emergency services. In addition to the DHS, the Departments of Agriculture, Interior, Defense, Justice, Commerce, Transportation, Labor, Education, Health and Human Services, and Housing and Urban Development have agencies and programs addressing issues directly related to the fire service.

While some of these programs are specific to the discipline of firefighting, others impact the greater public safety community. Where these programs touch law enforcement, EMS and the fire service, the federal government must give equitable consideration to each discipline. Agencies addressing interoperable public safety communications need to work closely with subject matter experts from the fire service to ensure they are meeting the needs of those communities. Federal programs to address first responder behavioral health and post-traumatic stress must consider the unique needs of firefighters.

Additionally, the lead federal fire, EMS and law enforcement agencies must collaborate with each other when addressing issues impacting public safety as a whole. Initiatives to address sustainable infrastructure, resiliency in the built environment or public health initiatives cannot operate in silos. Public safety must be approached holistically, which requires providing equal support to all first responders: the fire service, EMS providers and law enforcement.

As the lead federal agency representing the fire and emergency services, the USFA must play a prominent role in all these discussions. The USFA's staff is highly professional and well-informed about the needs and capabilities of our nation's fire and emergency services. To not involve the USFA in initiatives focused on fire and life safety is counterintuitive and detrimental to the objective of those initiatives. The USFA must be fully funded to execute its Congressional-mandated authorities.

Similarly, the nation's fire service must be involved in developing federal policies impacting fire and life safety to the same degree law enforcement stakeholders are involved in developing federal criminal justice policies. The White House Fiscal Year 2023 budget proposal includes \$1.97 billion in discretionary funding to support state and local law enforcement, an increase of 12% over the previous fiscal year. This represents a significant investment in local law enforcement and is much

needed. However, despite our nation's significant fire problem, the administration only requested \$740 million for grants to local fire departments. While the fire service and law enforcement face different challenges, we have demonstrated in this report that America faces a significant fire problem. It is time for the federal government to make the same commitment to addressing our nation's fire problem as it has to supporting local law enforcement.

In addition to supporting local law enforcement, federal law enforcement agencies have a significant presence in the government. These agencies are diverse and present in several departments of the federal government. However, nearly every department in the federal government touches upon fire and emergency services. These departments are responsible for engaging with fire service stakeholders — inside and outside of the federal government — when developing policies and procedures impacting fire and life safety. However, despite the significant footprint of fire within these departments, there is a lack of coordination and cohesive policy development among these agencies.

The USFA needs a more prominent role in federal policy discussions and implementation. Currently, the U.S. Forest Service (USFS) is the lead agency for federal support for firefighting activities. Emergency Support Function #4 charges the USFS with managing and coordinating firefighting activities, including the detection and suppression of fires on federal lands and providing personnel, equipment and supplies in support of state, tribal and local agencies involved in wildland, rural and urban firefighting operations. This role is more appropriate for the USFA to carry out under the National Response Framework.

When agencies and programs outside the USFA engage with fire service stakeholders, the USFA must be involved. For example, when the DOJ's Public Safety Medal of Valor recognizes a fire service member, the USFA should be in the determination and presentation of the award. Currently, the representatives of the USFA are not even invited to the ceremony. It is a disservice to the first responders being recognized if the lead federal agency for their profession is not even present when they receive this prestigious award.

To prioritize addressing the fire problem in America today, we must commit to elevating the fire service in federal policy development and prioritization. Similarly, the USFA must be elevated within FEMA and transformed into a multidisciplinary response, preparedness and mitigation agency. As many response agencies already have, each FEMA region should have a dedicated USFA specialist to assist in the planning and response to disasters. The USFA must be fully funded and appropriately staffed to execute its mission and adequately represent the more than 1.1 million firefighters serving in this country.

Appendix A: Organizations Represented at the Summit

Anne Arundel County Fire Department (Maryland)
Arlington County Fire Department (Virginia)
Baltimore City Fire Department (Maryland)
Baltimore County Fire Department (Maryland)
Center for Fire, Rescue & EMS Health Research
Center for Public Safety Excellence
City of Cedar Rapids (Iowa)
City of Philadelphia Fire Department
Clarion/Fire Rescue
Colorado Springs Fire Department (Colorado)
Congressional Fire Services Institute
District of Columbia Fire and EMS
Fairfax County Fire and Rescue Department (Virginia)
FDIC/Fire Engineering
FDNY
FDNY Consulting LLC
FEMA
Fire Department Safety Officer Association
Fire Safety Research Institute
Firehouse
Focal Point Productions
FRCE
Frederick County Division of Fire and Rescue Services (Maryland)
IAFC
IAFF
ICC
Illinois Fire Service Institute
International Association of Arson Investigators (IAAI)
International Association of Black Professional Firefighters

International Fire Service Training Association (IFSTA)
International Public Safety Data Institute
International Society of Fire Service Instructors
Lexipol
Loudoun County Fire and Rescue (Virginia)
Loveland-Symmes Fire Department (Ohio)
Milliken & Company
Montgomery County Fire and Rescue Service (Maryland)
Mount Weather Fire Department (Virginia)
NASFM
National Association of Hispanic Firefighters
NFFF
NFPA
NFSA
NIOSH
North American Fire Training Directors
NVFC
Office of the Maryland State Fire Marshal
Pflugerville Fire Department ESD2 (Texas)
Prince George's County Fire/EMS Department (Maryland)
Rock Creek Volunteer Fire Department (Colorado)
Safety Harbor Fire Department (Florida)
Scottsdale Fire Department (Arizona)
Scout Productions
Skidmore College
UL Research Institutes
University of Arizona Mel and Enid Zuckerman College of Public Health
USFA
Westfield Fire Department (Illinois)
Wisconsin Technical College System
Women in Fire

Appendix B: Summit Attendees

*Indicates participation in the summit planning team

Matthew Adams
Focal Point Productions

Timmy Clark
NFFF

Jeremy Ayers
NFFF
Pflugerville Fire Department ESD2
(Texas)

Christopher Cramer
UL Research Institutes

Angela Cunningham
USFA

Seth Barker
International Society of Fire Service
Instructors

Michael Desrochers
NASFM

Preet Bassi
Center for Public Safety Excellence

David Eskew
Milliken & Company

Valerie Benson *
FEMA

Kenneth Fent
NIOSH

Donna Black
IAFC

Karl Fippinger
ICC

Rob Brown
IAFC

Manuel Fonseca
National Association of Hispanic
Firefighters

David Brummett
USFA

Eriks Gabliks *
NFA
USFA

Jefferey Burgess
University of Arizona
Mel and Enid Zuckerman College of
Public Health

Brian Geraci
NASFM
Office of the Maryland State Fire
Marshal

John Butler
Fairfax County Fire and Rescue
Department (Virginia)

William (Billy) Goldfeder
Loveland-Symmes Fire Department
Lexipol

Mary Cameli
IFSTA

John Granby
NFFF
FRCE

Michaela Campbell
Congressional Fire Services Institute

Emily Haas
NIOSH

Lorraine Carli *
NFA

Sean Carroll *
NFFF

Jason Hahn
FEMA

Kelly Casillo
NFFF

Bobby Halton
Clarion Fire Rescue
FDIC/Fire Engineering

Vince Hodge *	Nicole LaRosa
FEMA	USFA
Tonya Hoover *	Kenneth LaSala, Jr.
USFA	IAFC
Brita Horn	Sarah Lee
Rock Creek Volunteer Fire Department	NVFC
(Colorado)	Frank Leeb
Elisabeth Hubbard	FDNY
International Society of Fire Service	Daryl R. Levine
Instructors	District of Columbia Fire and EMS
Hunter Hughes	Andrew Lindley
Scout Productions	Scout Productions
Sara Jahnke	Kelly Lynch *
Center for Fire, Rescue & EMS Health	NFFF
Research	Robert Maloney
Martin Jenoff	NFFF
Focal Point Productions	David Millstein
Michael Johnson	USFA
Fire Department Safety Officer	Ernie Mitchell
Association	NFFF
Loudoun County Fire and Rescue	Susan Moore
(Virginia)	NIOSH
James Keiken	Lori Moore-Merrell *
North American Fire Training Directors	USFA
Illinois Fire Service Institute	Patrick Morrison
Edward Kelly	IAFF
IAFF	Ross Mulkerrin
Steve Kerber	NFFF
Fire Safety Research Institute	Teresa Neal *
UL Research Institutes	USFA
Bob Keys	Susie Nicol
Milliken and Co.	Firehouse
FDNY Consulting LLC	Kevin O'Connor
Melissa Knight *	IAFF
NFFF	John Oates
Justin Knighten	International Public Safety Data Institute
FEMA	David Parks
Benjamin J. Krakauer	Focal Point Productions
FEMA	
Roger Krupp	
IAAI	

Richard Patrick *
USFA

Catherine Patterson
FEMA

James Pauley
NFFA

Pete Piringer
Montgomery County Fire & Rescue
Service (Maryland)

Jeffrey Pomeranz
Center for Public Safety Excellence
City of Cedar Rapids (Iowa)

Michael Pritchard*
USFA

Vickie Pritchett *
NFSA

Kevin Quinn
NVFC

Shane Ray *
NFSA

Terri L. Reid
International Association of Black
Professional Firefighters
Baltimore County Fire Department
(Maryland)

Kevin Roche *
NFFF
FACETS Consulting

Pablo Sainz
Focal Point Productions

Margaret Scallety
Chief Operating Officer
WHP Trainingtowers

Ron Siarnicki *
NFFF

Denise Smith
Skidmore College
Illinois Fire Service Institute

Joshua Southerland
NFFF
Westfield Fire Department (Illinois)

Rachael Staebell
Women in Fire
Colorado Springs Fire Department
(Colorado)

Victor Stagnaro *
NFFF

Seth Statler
NFFA

Josh Stefancic
IFSTA
Safety Harbor Fire Department (Florida)

Michele Steinberg
NFFA

Debra Stottlemeyer *
FEMA

Rick Swan
IAFF

Adam K. Thiel
City of Philadelphia Fire Department

Robert Timko
NVFC

Amy Noel Tippet *
NFFF

John Tippet *
NFFF

Stuart Tom
ICC

Derek Urwin
IAFF

Eric Valliere
Fire Department Safety Officer
Association
Scottsdale Fire Department (Arizona)

Bill Webb
Congressional Fire Services Institute

Tiffanye S. Wesley
Women in Fire
Arlington County Fire Department
(Virginia)

Angela White
North American Fire Training Directors
Wisconsin Technical College System

Danny Whu
IAFF

Ryan Woodward
NVFC

Khalilah Yancey
Women in Fire
Baltimore City Fire Department
(Maryland)

Recruits from the following departments attended the State of Science portion of the summit:

- Prince George's County Fire/EMS Department (Maryland).
- Loudon County Fire and Rescue Department (Virginia).
- District of Columbia Fire and EMS.

The following fellows and interns from the UL First Responder Fire Safety Research Institute also attended the State of Science portion of the summit: Grayson Bellamy, Thomas DePietro, Neil Fung, Madi Michael, Malhar Patel and Rebekah Schrader.

Thank you to the following departments for providing apparatus for the apparatus display for the summit:

- Montgomery County Fire and Rescue Service (Maryland).
- Prince George's County Fire/EMS Department (Maryland).
- Frederick County Division of Fire and Rescue Services (Maryland).
- Mount Weather Fire Department (Virginia).
- Fairfax County Fire and Rescue Department (Virginia).
- Maryland Office of the State Fire Marshal.
- Anne Arundel County Fire Department (Maryland).
- District of Columbia Fire and EMS.

Note: The list above is of registered attendees of the summit as of Oct. 9.

Appendix C: Summit Speakers Biographies

National Roundtable

*Participants in alphabetical order

President Joseph Robinette Biden Jr. (virtual remarks)
President of the United States

President Joseph Biden is the 46th President of the United States. He previously served as vice president from 2009 to 2017. President Biden was a former chairman of the Congressional Fire Services Caucus while serving as a U.S. senator.

Chief Donna Black
President and Board Chair, IAFC
Fire Chief, Duck Fire Department (North Carolina)

Chief Donna Black has been active in the fire service for over 20 years. She began her career in 1997 as a volunteer, earning her way through the ranks (as both a paid and volunteer firefighter), culminating in 2006 when she was selected as the fire chief for the Town of Duck.

Chief Black received her Bachelor of Science degree from Ithaca College and went on to obtain her Master of Arts from the University of Georgia.

She graduated from the National Fire Academy's Executive Fire Officer (EFO) Program in 2011. While attending the EFO Program, her study focused on evaluating and improving the operations of the Duck Fire Department. After collaborating with the town manager, and educating both the town council and community about fire operations, Chief Black justified the necessity of procuring career firefighter positions. These proactive changes increased the level of service for the town and shaped the Duck Fire Department into a thriving combination department.

Chief Black holds a post-graduate Certificate in Community Preparedness & Disaster Management from the Gillings School of Public Health at University of North Carolina at Chapel Hill and authored the Town of Duck's Emergency Operations Plan. She currently holds the Chief Fire Officer (CFO) designation.

Chief Black has served on several boards including the Volunteer Combination Officers Section, Council for Future Volunteer Firefighters (vice chairperson) and FRI Program Planning Committee. Most recently, Chief Black was chosen to co-chair the Women Fire Chiefs Council. She continues to advocate for highly effective and inclusive volunteer and combination fire departments.

Source: <https://www.iafc.org/about-iafc/board-of-directors/president-and-chair-of-the-board>

Deanne Criswell

Administrator
FEMA

Ms. Deanne Criswell was unanimously confirmed by the Senate on April 22, 2021, as the 12th Administrator of the Federal Emergency Management Agency (FEMA). Ms. Criswell is the first woman confirmed to serve as the Administrator, where she leads the nation's efforts in helping people before, during and after disasters. She brings with her an extensive career in public service with serving 30 years at all levels of government.

Prior to her appointment, Ms. Criswell served as the Commissioner of the New York City Emergency Management Department from 2019 to 2021, where she was responsible for coordinating citywide emergency planning and response for all emergencies. One of her most significant accomplishments was leading the coordination of the City's response to the COVID-19 pandemic to include preventing the collapse of the healthcare system, making sure no New Yorker went hungry, establishing a first of its kind non-congregate sheltering program, and supporting the country's largest mass fatality program.

Ms. Criswell began her career in emergency management in Aurora, Colorado, where she led strategic change in the city's emergency and disaster planning. During her tenure, Ms. Criswell coordinated transitional housing and family reunification efforts in response to receiving evacuees during the response to Hurricane Katrina. She previously served at FEMA as the leader of one of the Agency's National Incident Management Assistance Teams (IMAT) and as a Federal Coordinating Officer. In this role, Ms. Criswell was the primary Federal representative responsible for leading the agency's response to and recovery from emergencies and major disasters, from severe flooding in North Dakota to hurricanes in South Carolina to fires in Colorado. She also spent two years as an executive in the private sector, providing exceptional technical expertise and the experience necessary to help her clients achieve their critical missions.

Ms. Criswell also proudly served 21 years in the Colorado Air National Guard. She is a veteran of two overseas tours to include as a fire officer in Kuwait immediately following the attacks of September 11, 2001, and to Qatar in support of Operation Enduring Freedom in 2010, where she advised senior leadership on fire protection requirements for new and existing military bases in Afghanistan and Iraq.

Ms. Criswell holds a Bachelor of Science from Colorado State University, a Master of Public Administration from the University of Colorado — Denver, and a Master of Arts in Security Studies from the Naval Postgraduate School, Center for Homeland Defense and Security.

Source: <https://www.fema.gov/profile/deanne-criswell>

Caitlin Durkovich

Special Assistant to the President
Senior Director for Resilience and Response NSC

Caitlin Durkovich currently serves as the senior director for resilience and response at the National Security Council. She was a nonresident senior fellow in the Scowcroft Center for Strategy and Security until November 2020. While a fellow with the Atlantic Council, she co-directed the Future of DHS Project. After the election of President Joseph Biden, she served on the agency review team for the Department of Homeland Security.

She has more than twenty years of expertise in national and homeland security. A recognized expert in critical infrastructure security and resilience, including cybersecurity, Ms. Durkovich has successfully advanced risk management programs that drive thought leadership, advance leading security practices, influence policy, and evolve industry practices to manage operational and security risks. She has advanced strategy and policy at the highest levels of government, including the development of Presidential Policy Directive 21: Critical Infrastructure Security and Resilience (2013) and co-chairing the Joint United States-Canada Electric Grid Security and Resilience Strategy (2016) and the National Space Weather Strategy (2015).

Ms. Durkovich was a director at Toffler Associates, a foresight advisory firm. She served eight years at the Department of Homeland Security, managing the mission to protect the nation's cyber and physical infrastructure. As assistant secretary for infrastructure protection, she led both the voluntary partnership to enhance security and resilience across the sixteen critical infrastructure sectors, as well as the regulatory program to secure high-risk chemical facilities, or the Chemical Facility Antiterrorism Standards (CFATS).

Her experience also includes leading homeland security projects with several government agencies while at Booz Allen Hamilton, setting industry cybersecurity standards at the ISAlliance, and pioneering early warning cyber intelligence at iDefense (acquired by Verisign).

Ms. Durkovich served as a member of the Board of Directors of the InfraGard National Members Alliance and the Protect Our Power Advisory panel. She earned a B.A. in public policy studies from the Terry Sanford Institute of Public Policy at Duke University and a certificate in business strategy from The Aspen Institute. She lives in Washington, D.C. with her husband, three children, and bulldog.

Source: <https://www.atlanticcouncil.org/expert/caitlin-durkovich/>

Edward A. Kelly

General President
IAFF

Elected the IAFF's 10th General President at the IAFF 55th Convention in March 2021, Edward A. Kelly is the son, grandson, brother, nephew and cousin of fire fighters. Kelly previously served as the IAFF's 11th General Secretary-Treasurer from 2016-2021.

Kelly joined the Boston Fire Department as a fire fighter/EMT in 1997, where he was assigned to Ladder Company 17 in Boston's South End. In 1999, he was assigned to the Technical Rescue team that assisted Worcester Local 1009 at the Cold Storage

Warehouse fire, which claimed the lives of six IAFF Local 1009 members. Kelly was also among the thousands of fire fighters at Ground Zero after the September 11, 2001, terror attacks on the World Trade Center and responded to the Boston Marathon bombing in 2013.

Kelly rapidly climbed the ranks of organized labor and is known and respected for his strong dedication to the rank-and-file members of the IAFF and his visionary leadership across the labor movement. He served as president of Boston, MA Local 718 in one of the most contentious times in the local's history, engaging in a bitter duel with the city's administration over the local's collective bargaining rights. He went on to become president of the Professional Fire Fighters of Massachusetts in 2011, a post he held until his election as IAFF General Secretary-Treasurer.

During his tenure as General Secretary-Treasurer, Kelly implemented multiple programs to support IAFF local leaders, including overseeing the development and implementation of IAFF System Management Active Response Technology (SMART), which provides communication and database tools to the IAFF affiliates in the United States and Canada. Kelly also implemented innovative new processes to streamline dues collection from affiliates. As treasurer, Kelly made organizational changes in healthcare and other expense reductions, which saved approximately \$2 million. Kelly also made changes to ensure compliance with various oversight and regulatory obligations to protect the union from scrutiny.

As the recordkeeper for the International, Kelly modernized the operations of the General Secretary-Treasurer's office while preserving the long history of the IAFF by making every historical record within his office available to members. He instituted policies and procedures that resulted in greater transparency and trust across the membership of the IAFF.

A graduate of the Harvard Trade Union Program class of 2015, he was named Labor Leader of the Year by the Greater Boston Labor Council. Kelly was appointed by the governor of Massachusetts to serve as a commissioner at the Department of Fire Services, as well as the Commonwealth of Massachusetts Group Insurance Commission, one of the largest healthcare purchasers in the Northeast. Kelly also served as the elected Executive Vice President of the Massachusetts AFL-CIO.

As part of Kelly's charitable efforts, he is a co-founder and member of the Board of Directors for Massachusetts Iraq and Afghanistan Fallen Heroes and a trustee for the Boston Fire Department Charitable Association, first established in 1828 to ensure proper burial for indigent fire fighters and which now assists widows and widowers of fire fighters of modest means.

A proud military veteran, Kelly served as a fire fighter in the U.S. Air Force.

As an active fire fighter, Kelly brings a direct connection from the rank-and-file IAFF members in firehouses and fire halls across both countries to the very top of their union.

Source: <https://www.iaff.org/general-president/>

Alejandro Mayorkas

Secretary
DHS

Alejandro Mayorkas was sworn in as Secretary of the Department of Homeland Security by President Biden on February 2, 2021.

Mayorkas is the first Latino and immigrant confirmed to serve as Secretary of Homeland Security. He has led a distinguished 30-year career as a law enforcement official and a nationally recognized lawyer in the private sector. Mayorkas served as the Deputy Secretary of the U.S. Department of Homeland Security from 2013 to 2016, and as the Director of U.S. Citizenship and Immigration Services from 2009 to 2013. During his tenure at DHS, he led the development and implementation of DACA, negotiated cybersecurity and homeland security agreements with foreign governments, led the Department's response to Ebola and Zika, helped build and administer the Blue Campaign to combat human trafficking, and developed an emergency relief program for orphaned youth following the tragic January 2010 earthquake in Haiti. Mayorkas also created the Fraud Detection and National Security Directorate to better ensure the integrity of the legal immigration system.

Mayorkas began his government service in the Department of Justice, where he served as an Assistant United States Attorney in the Central District of California, specializing in the prosecution of white-collar crime. After nearly nine years as a federal prosecutor, he became the youngest United States Attorney in the nation, overseeing prosecutions of national significance, including the investigation and prosecution of financial fraud, violations of the Foreign Corrupt Practices Act, public corruption, violent crime, cybercrime, environmental crime, international money laundering, and securities fraud.

Mayorkas received his bachelor's degree with distinction from the University of California at Berkeley and a law degree from Loyola Law School.

Source: <https://www.dhs.gov/person/alejandro-mayorkas>

Chief Ernest (Ernie) Mitchell, Jr.

Board of Directors Member
NFFF

Ernest Mitchell, Jr. was the Federal Emergency Management Agency's United States Fire Administrator for the United States Fire Administration. He began his tenure on December 5, 2011, and was responsible for managing the United States Fire Administration, the programs and training activities at the National Emergency Training Center.

Chief Mitchell retired as the Fire Chief and Assistant Director of Disaster Emergency Services for the City of Pasadena, California, Fire Department after 33 years in the fire service. Chief Mitchell is an active member and former officer of the IAFC. During his last year in Pasadena, he was also President of the International Association of Fire Chiefs (IAFC), where he continued until the completion of his term. He served in Pasadena from 1998 until 2004. Prior to becoming Fire Chief in Pasadena, Chief Mitchell served as Fire Chief and Deputy City Manager in the City of Monrovia, California, for seven years. He began his career as a fire fighter with the City of Compton, California. He served there for twenty years in various ranks until leaving to become Fire Chief in the City of Monrovia.

His most recent professional affiliations include serving as a member of the International Fire Service Training Association Executive Board, the International Association of Firefighters Hazardous Materials Advisory Board, the IAFC President's Council, the IAFC Foundation Board, and the IAFC/IAFF Labor/Management Initiative Facilitator Team.

In previous years he has served as a member of the Department of Homeland Security's Science and Technology Advisory Committee; on numerous committees and task forces of the IAFC; and presided over several fire service organizations, including: the Los Angeles Area Fire Chiefs Association, the League of California Cities Fire Chiefs and the Foothill Fire Chiefs. He has also been an Advocate for the National Fallen Firefighters' Everyone Goes Home® Program, an adjunct instructor for the National Fire Academy and a member of the Editorial Advisory Board of Fire Chief Magazine.

Chief Mitchell has an Associate of Science Degree in Fire Science from Long Beach City College; a Bachelor's Degree in Public Administration from the University of San Francisco; and a Master of Public Administration Degree from California State University at Northridge.

During his career Chief Mitchell has either chaired or been a member of many working committees that contributed to the progress and development of communities as well as local, state and national fire and emergency services. He is a past recipient of the IAFC President's Award for Service and has received several community awards for service.

He is a past recipient of numerous community and organizational honors, including: the IAFC President's Award for Service, designation as a City of Compton Hometown Hero, and selection to the Long Beach City College Alumni Hall of Fame.

Source: <https://www.firehero.org/about-us/board-advisory/ernest-mitchell/>

Dr. Lori Moore-Merrell

Administrator
USFA

Dr. Lori Moore-Merrell was appointed by President Joseph Biden as the U.S. Fire Administrator on Oct. 25, 2021. Prior to her appointment, Lori served nearly 3 years as the president and chief executive officer (CEO) of the International Public Safety Data Institute, which she founded after retiring from a 26-year tenure as a senior executive in the International Association of Fire Fighters (IAFF).

Lori is considered an expert in executive leadership, emergency response system evaluation, public safety resource deployment, community risk assessment, data science/analytics, strategic planning, costs and benefits analysis, advocacy, consensus building, policy development and implementation, and generational differences in the workplace.

As a Doctor of Public Health and a data scientist, Dr. Moore-Merrell recently served on the Biden-Harris Transition Team to conduct agency review for the U.S. Department of Homeland Security/Federal Emergency Management Agency (FEMA) as part of the COVID-19 response planning. She has also served on the Public Safety Committee of the transition teams for both the mayor of New York City (2013) and the mayor of the District of Columbia (2015).

Lori serves on national and international boards of directors and advises elected officials, CEOs and local metropolitan fire chiefs in areas of her expertise while providing them scientific data to make fact-based decisions. She was recently awarded Honorary Membership in the Metropolitan Fire Chiefs Association for her expertise in areas of fire prevention, fire suppression or other related disciplines. Lori is only the fourth individual to be presented this honor in the 54-year history of the organization.

Dr. Moore-Merrell is an international speaker, presenter and author. She has also been awarded the James O. Page Achievement Award by the Emergency Medical Services (EMS) Section of the International Association of Fire Chiefs (IAFC) (2001), twice awarded the IAFC President's Award for commitment to firefighter safety (2009, 2019), the Dr. John Granito Award for Excellence in Fire Leadership and Management Research (2010), the Metropolitan Fire Chiefs President's Award of Distinction (2013), the Mason Lankford Award from the Congressional Fire Services Institute (2019), and the Homeland Security Today Mission Award (2020).

Lori is a principal member of the National Fire Protection Association (NFPA) 3000 Technical Committee and is an advisor to the chair of the NFPA 1710 Technical Committee. Lori served 9 years as a commissioner to the Commission for Fire Service Accreditation and 3 terms as a board member for the Center for Public Safety Excellence. Dr. Moore-Merrell is a member of the International Fire Service Training Association Executive Board, as well as the Underwriters Laboratories (UL) Fire Council.

During her 26 years at the IAFF, Lori spent more than 17 years leading a research team made up of international fire service organizations and other partners, including the National Institute of Standards and Technology, the UL, the Urban Institute, the University of Texas, Worcester Polytechnic Institute and the Commission on Fire Accreditation International. As principal investigator and senior project manager on projects funded by FEMA/Assistance to Firefighters Grants totaling more than \$23 million, she led the team to produce landmark reports and other tools to improve residential and high-rise fireground operations, community risk assessment, fire and EMS resource deployment, and "Big Data Analytics" — all to help drive executive decision-making. These reports and other resources have changed the face of fire and EMS deployment in countries throughout the world. Dr. Moore-Merrell has also managed emergency response system evaluation project teams, including secure data procurement, geographic information systems analysis and workload analysis in hundreds of fire departments throughout North America.

Lori began her fire service career in 1987 as a fire department paramedic in the City of Memphis Fire Department, Memphis, Tennessee.

Source: <https://www.usfa.fema.gov/about/administrator.html>

Jim Pauley

President and CEO
NFPA

Jim Pauley is the President and Chief Executive Officer of the National Fire Protection Association (NFPA). NFPA is a global, non-profit organization devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards. He also serves as Chairman of the Board of the NFPA Research Foundation.

Prior to joining NFPA, Mr. Pauley concluded a 30-year career in the electrical and energy industry where he most recently served as Senior Vice President, External Affairs and Government Relations for Schneider Electric.

Mr. Pauley has served in a number of past leadership positions including Chairman of the Board for the American National Standards Institute (ANSI).

He holds a bachelor's degree in Electrical Engineering from the University of Kentucky and was a licensed professional engineer in Kentucky.

Source: <https://www.nfpa.org/About-NFPA/NFPA-leadership>

Chief Kevin Quinn

First Vice Chair, Board of Directors
NVFC

Kevin D. Quinn joined the fire service in 1976. He has served on the NVFC board of directors for over 36 years and is past chair of the NVFC. He retired as a deputy chief of the Union Fire District in South Kingstown, RI, and has returned to where he began in the volunteer fire service — actively responding to fires and alarms with his original Station #3 of the Union Fire District. Kevin is a past-president of the Rhode Island State Firemen's League, Rhode Island State Advocate of the National Fallen Firefighters Foundation's Everyone Goes Home-Courage to Be Safe Program, member of the Foundation's Rhode Island Local Assistance State Team, board member of the Home Fire Sprinkler Coalition, member of the Hope Valley HazMat team, and member of numerous federal, state, and local exercise design management teams. He holds a master of science degree in counseling and educational psychology and a master of science degree in education.

Source: <https://www.nvfc.org/board-of-directors/>

John K. Tien

Deputy Secretary
DHS

John Tien was sworn in as Deputy Secretary of the Department of Homeland Security by Secretary Mayorkas on June 24, 2021. Tien is the first Asian American to be confirmed as the Deputy Secretary of Homeland Security.

Prior to becoming the Deputy Secretary of Homeland Security, Tien spent ten years serving in senior executive roles in the critical infrastructure financial services sector as a managing director at Citigroup. As a chief operating officer, he provided customer service support to tens of millions of customers to include safeguarding their accounts against fraud, data breaches, and other cyber threats.

Tien previously served in the Obama Administration as the National Security Council Senior Director for Afghanistan and Pakistan from 2009-2011, the Bush Administration as the National Security Council Director for Iraq from 2008-2009, and the Clinton Administration as a White House Fellow in the Office of the United States Trade Representative from 1998-1999.

Tien began his career of public service at the United States Military Academy at West Point where he was the first Asian American to ever serve as the First Captain and Brigade Commander, West Point's top-ranked cadet position. For the next 24 years, he served as a U.S. Army combat arms officer, retiring in 2011 at the rank of Colonel. He is a veteran of three combat tours to include serving as the Task Force 2-37 Armor Battalion Commander in Operation Iraqi Freedom. He and his unit were responsible for securing and stabilizing the Iraqi cities of Tal Afar and Ramadi with an emphasis on counterinsurgency operations, community partnership, creating rule of law institutions, and the training of thousands of Iraqi police officers. His military decorations include the Bronze Star Medal with one oak leaf cluster, the Combat Action Badge, and the Valorous Unit Award.

Tien holds a Bachelor of Science from West Point and a Master of Arts from Oxford University where he was a Rhodes Scholar, and was also a National Security Fellow at the Harvard Kennedy School.

Source: <https://www.dhs.gov/person/john-k-tien>

State of Science

*Presenters in alphabetical order

Dr. Jeff Burgess

Mel and Enid Zuckerman College of Public Health
University of Arizona

Prior to joining MEZCOPH, Dr. Burgess worked as an emergency physician, medical toxicologist, and occupational and environmental medicine physician. His occupational research projects have been focused on reducing toxic exposures and preventing injuries and illnesses among firefighters, other first responders, and miners. His environmental focus has been on the improvement of emergency preparedness, evaluation of population-level exposures to arsenic, and working with tribal partners to address adverse exposures.

Dr. Burgess participates in several university-wide health collaborations, including the Southwest Environmental Health Sciences Center, the Lowell Institute for Mineral Resources, the University of Arizona Cancer Center, the Institute for the Study of Planet Earth, and Bio5. He has an adjunct appointment in the Department of Mining and Geological Engineering. He has also served on national committees dedicated to fostering research to improve the health and safety of public safety personnel and miners.

Source: <https://www.publichealth.arizona.edu/directory/jeff-burgess>

John Butler

Fire Chief
Fairfax County Fire and Rescue Department (Virginia)

John S. Butler is the Fire Chief for the Fairfax County Fire and Rescue Department (VA). He is a paramedic and holds postgraduate degrees from the University of Baltimore and Johns Hopkins University, and certificates from Harvard University, the National Fire Academy Executive Fire Officer Program, and the Fire Service Executive Development Institute. Chief Butler serves as the International Association of Fire Chiefs' First Vice President, holds three chief-level designations from the Commission on Professional Credentialing, and is chairman of the National Fire Academy's Board of Visitors.

Source: Fairfax County Fire and Rescue Department (Virginia)

Lorraine Carli

Vice President of Outreach and Advocacy
NFPA

Lorraine Carli is Vice President of Outreach and Advocacy for the National Fire Protection Association where she oversees media, public affairs and advocacy activities; the organization's magazine NFPA Journal; and NFPA's Wildfire, Public Education and US/Canada Regional Operations Divisions.

In addition to her service on the Board of Directors for the National Fallen Firefighters Foundation, Carli is President of the Home Fire Sprinkler Coalition and President of the Board of Directors for The Phoenix Society for Burn Survivors. She also serves on the Executive Committee of the Electric Safety Foundation International (ESFI) Board of Directors.

Prior to joining NFPA, Carli was a public relations consultant working with health care, medical technology, government and nonprofit organizations. Before her role as a consultant, Carli was the director of marketing services for Speedline Technologies, overseeing global public relations, marketing communication and advertising, and was director of communications for CareGroup, a network of hospitals in Massachusetts. She began her career in state government, where she was most noted for her more than decade tenure as the director of public affairs for the Massachusetts Department of Social Services.

Carli holds a Bachelor's degree in journalism from Northeastern University and a Master's degree in education from the University of Massachusetts. She is also an adjunct professor at Suffolk University in Boston, teaching graduate public relations courses.

Source: <https://www.firehero.org/about-us/board-advisory/lorraine-carli/>

Dr. Kenneth Fent
NIOSH

Commander Kenny Fent (PHSCC) is currently the head of the NFR at CDC/NIOSH, which is a congressionally mandated program to monitor cancer outcomes and occupational risk factors among firefighters in the U.S. He has spent nearly 15 years studying firefighters' exposures and health effects and published over 70 scientific articles and reports. His research findings have provided evidence to support a variety of control measures to reduce carcinogenic exposures in the fire service.

Source: Dr. Kenneth Fent

Karl Fippinger, CEM, PMP
Vice President, Fire and Disaster Mitigation
ICC

Karl Fippinger, CEM, PMP, is Vice President, Fire and Disaster Mitigation for the International Code Council's Government Relations Department where he leads the Code Council's national fire service and emergency management activities.

Fippinger brings more than 30 years of domain experience, having served as an assistant fire chief with the Occoquan-Woodbridge-Lorton Volunteer Fire Department in Prince William County, Va., and as an adjunct instructor with the Fairfax County Fire and Rescue Department in Fairfax, Va. He also brings deep experience in public and private sector emergency management across federal, state and local disaster preparedness, mitigation, response and recovery.

Fippinger holds the Certified Emergency Manager credential with the International Association of Emergency Managers and is a certified Project Management Professional with the Project Management Institute.

Source: <https://www.iccsafe.org/expert/karl-fippinger/>

Tonya Hoover

Deputy Administrator
USFA

Tonya Hoover is the Deputy U.S. Fire Administrator at the U.S. Fire Administration (USFA). She was named to this position in January 2020. As the senior career federal fire official, she is responsible for the day-to-day operation of the USFA.

This includes the annual training of over 100,000 first responders at and through the National Fire Academy (NFA); the National Fire Incident Reporting System, which documents and analyzes 27 million fire department emergency responses a year; the USFA's fire prevention, public information and public education programs; and the 26 campus buildings and the grounds of the historic National Emergency Training Center in Emmitsburg, Maryland.

Chief Hoover is an accomplished executive with more than 20 years of management experience in both local and state government. She has successfully worked at high levels of government in developing and implementing fire protection, fire prevention, fire training and community risk reduction programs.

From May 2017 to January 2020, Chief Hoover served as the superintendent of the USFA's NFA, which focuses on enhancing the ability of fire and emergency services and allied professionals to deal more effectively with fire and related emergencies.

From July 2009 to July 2016, Chief Hoover served as the California state fire marshal, where she was responsible for statewide fire prevention, fire service training, pipeline safety, code and regulations development, and analysis and implementation. She was the California assistant state fire marshal from September 2007 to June 2009. Previously, Chief Hoover served as a fire marshal/battalion chief for a local fire department and was a deputy campus fire marshal for the University of California at Berkeley. Chief Hoover served on the board of directors for the National Fire Protection Association and the International Fire Service Training Association and continues to engage with the International Code Council.

Chief Hoover received her MBA in Business and Human Resources from the University of Phoenix in 2006 and a Bachelor of Science in Technical Education, specializing in Fire Protection and Safety, from Oklahoma State University in 1985. She holds an associate degree in Fire Protection Engineering Technology (also from Oklahoma State University) and possesses a California lifetime teaching credential for fire science.

Source: <https://www.usfa.fema.gov/about/deputy-administrator.html>

Brita Horn

Chief
Rock Creek Volunteer Fire Department (Colorado)

Chief Horn dedicated her life to public service in response to the terrorist attacks of Sept. 11, 2001, when she noticed a need in her local community for emergency responders. Brita responded to the call by creating a nonprofit fire department with her friends and neighbors in McCoy, Colorado, which has served the community for the last 21 years. Brita currently serves as the fire chief for the department.

Source: Chief Brita Horn

Dr. Sara Jahnke

Chief Operating Officer and Senior Scientist, NDRI-USA
Director, Center for Fire, Rescue & EMS Health Research

Dr. Jahnke has over a decade of research experience on firefighter health; she has been the Principal Investigator on ten national studies as well as dozens of studies as a co-investigator. Her work has focused on a range of health concerns including the health of women firefighters, behavioral health, risk of injury, cancer, cardiovascular risk factors, and substance use with funding from the Assistance to Firefighters Grant R&D Program, the National Institutes of Health, and other foundations. She has more than 100 publications in peer-reviewed medical literature.

Source: <https://www.ndri-usa.org/team>

Dr. Steve Kerber

Vice President and Executive Director
UL's Fire Safety Research Institute

Steve Kerber is Vice President and Executive Director of UL's Fire Safety Research Institute (FSRI). He leads a fire safety research team dedicated to addressing the world's unresolved fire safety risks and emerging dangers to reduce death, injury and loss from fire. Steve has led research in the areas of fire safety engineering, firefighter safety, fire forensics and fire science. He received his bachelor's and master's degrees in fire protection engineering from the University of Maryland and completed his doctorate at Lund University in Sweden after defending his thesis titled "Utilizing Research to Enhance Fire Service Knowledge." Steve is also a 13-year veteran of the fire service, with most of his service at the College Park Fire Department in Prince George's County, Maryland, where he served at ranks up through Deputy Chief. Steve has also been appointed to the rank of Honorary Battalion Chief by the Fire Department of New York, was named the 2014 ISFSI and Fire Engineering George D. Post Instructor of the Year and was awarded the 2019 Metropolitan Fire Chiefs President's Award of Distinction.

Source: <https://fsri.org/steve-kerber>

Frank Leeb

Deputy Assistant Chief
FDNY

Frank Leeb is a deputy assistant chief for FDNY. He has served in several senior staff positions including the chief of training and the chief of the fire academy. Leeb has been a member of FDNY since 1992 and a member of the East Farmingdale, New York, fire department since 1983. He holds a bachelor's degree in fire service administration from the State University of New York and a master's degree in security studies from the Naval Postgraduate School, Center for Homeland Defense and Security.

He is a principal on the NFPA Technical Committees 420, 1585 and 1710.

Source: Chief Frank Leeb

Dr. Susan M. Moore

Associate Director for Science
National Personal Protective Technology Laboratory (NPPTL)
NIOSH
CDC

Dr. Susan Moore joined NIOSH NPPTL in 2006 with her B.S. in mechanical engineering from the University of Kentucky and her Ph.D. in bioengineering from the University of Pittsburgh. She currently serves as the Associate Director for Science for NIOSH NPPTL. Dr. Moore also serves as the Co-Chair to the National Occupational Research Agenda's (NORA) Public Safety Sector Council and is the Co-Coordinator for NIOSH's Public Safety Sector Council and NIOSH's Personal Protective Technology Core and Specialty Program. While at NPPTL, Dr. Moore has supported conformity assessment, test method development, research, and technology development efforts related to respirators, turnout gear, gloves, and surgical gowns.

Source: <https://www.cdc.gov/niosh/npptl/Respiratory-Protection-Week-2021.html>

Dr. Lori Moore-Merrell

Administrator
USFA

See National Roundtable biography.

Patrick Morrison

Chief of Field Services
IAFF

Patrick Morrison is the Chief of Field Services for the International Association of Fire Fighters (IAFF), overseeing the Division of Health, Safety and Medicine, the Division of Technical Assistance and Information Resources, and the Division of Education, Grants and Human Relations. Mr. Morrison's expertise is in the design and implementation of behavioral health, safety, and wellness programs to improve fire fighters' overall physical and mental health, address their medical needs, and increase protections from the hazardous elements of firefighting. Prior to joining the IAFF, Mr. Morrison was a career fire fighter for 21 years with the Fairfax County Fire and Rescue Department in Fairfax, Virginia.

Source: IAFF

Chief John Oates

CEO
International Public Safety Data Institute

John is the CEO of the International Public Safety Data Institute. Prior to being appointed as CEO, he served as Chief of the East Hartford, Connecticut, Fire Department. He has a BS from Franklin Pierce University, a MS from Oklahoma State University, is a graduate of the National Fire Academy Executive Fire Officer Program, and holds numerous professional certifications. He is a long-time contributor to the NFFF's Everyone Goes Home Program. He serves as member of the Behavioral Health Advisory Committee created by the First Responder Center for Excellence, a NFFF-affiliated organization. Chief Oates serves as a member of

the NFPA 3000 Active Shooter/Hostile Event Response Technical Committee and the Technical Committee for Safety at Motorsports Venues (NFPA 610) where he served as Chairman from 2005 until 2016.

Source: <https://i-psdi.org/about.html>

Vickie Pritchett

Vice President and Executive Officer
NFSA

Vickie Pritchett became involved in the fire service in 1997. Vickie served on the Board of Directors for the Pleasant View Volunteer Fire Department from 1998-2013, and was awarded lifetime membership into PVVFD in December of 2013. Vickie served as the Community Development Liaison for the Town of Pleasant View and Executive Director of the Joint Economic & Community Development Board of Cheatham County at the time she began her service to the local volunteer fire department. During this time, she was instrumental in bringing fire service officials, builders and developers, and elected officials together. This coordination resulted in a zero square foot fire sprinkler ordinance for the town in 2001, and county-wide in 2006.

Vickie's dedication to the improvement of quality of life, passion for the community, and her ability to bring people together makes her the "spark plug" and advocate of fire sprinkler requirements at the local, state, and federal level. She has presented across the state of Tennessee and the nation. She has worked in Washington, D.C., to promote fire protection issues and to highlight the differences that can be made by fire sprinklers and the legislation that requires them.

Vickie is a graduate of Middle Tennessee State University and received her MBA from Vanderbilt's Owen School of Management. She is a VCOS Symposium committee member, Board Member of the Home Fire Sprinkler Coalition, Board member of the IAFC Fire & Life Safety Section, Board Member of Common Voices, and is a member of both NFPA and ICC.

Vickie currently serves as Vice President/Executive Officer of the National Fire Sprinkler Association.

Source: <https://community.nfsa.org/network/members/profile?UserKey=3aece444-b9da-4fc6-9e7a-0ff8cae8143c>

Chief Shane Ray

President
NFSA

Shane Ray began his fire service career in 1984 and worked through the ranks of career and volunteer organizations serving from firefighter to chief. Shane currently serves as president of the NFSA, headquartered in Maryland, and remains a volunteer in his hometown community of Pleasant View, Tennessee. Shane served 13 years as fire chief, and he served 6 years as the mayor. He also held the position of superintendent of the South Carolina Fire Academy and as South Carolina state fire marshal.

Chief Ray is a graduate of Eastern Kentucky University, Harvard's John F. Kennedy School of Government, the University of Maryland's Leadership Development Program, and the NFA's EFO Program. Shane's education not only comes from universities and institutions but from practical experience as well.

Shane was selected as Fire Chief Magazine's Volunteer Fire Chief of the Year for 2005 and Eastern Kentucky University's Distinguished Alumnus of the Year award for 2006. He was also selected as Tennessee Fire Chief of the Year in 2011. He was awarded the Order of the Palmetto by Governor Nikki Haley in June of 2014.

Source: Chief Shane Ray

Chief Ron Siarnicki

Executive Director
NFFF

Ronald Jon Siarnicki, the Foundation's Executive Director, began his career as a firefighter with the Prince George's County Fire/EMS Department in 1978 and, over 24 years, progressed through the ranks to Chief of the Department. In this position, he served as the Chief Executive Officer responsible for the fire, rescue and emergency medical services of Prince George's County, Maryland. While with the Department, he also served on the Joint Fire and Police Pension Board for four years.

Prior to joining the Prince George's County Fire/EMS Department, he served as a volunteer firefighter with the Monessen Volunteer Fire Department, Hose House #2, in western Pennsylvania. In doing so, he followed a family tradition; both his father and grandfather were volunteer firefighters.

In July 2001, he retired from the Prince George's County Fire/EMS Department to take the position of Executive Director of the National Fallen Firefighters Foundation. In this role, he has managed the day-to-day operations of the Foundation to include the National Memorial Services, construction of the National Memorial Park and the renovation of the Fallen Firefighters Memorial Chapel located in Emmitsburg, Maryland. In addition, he created the catalyst for the development of the Everyone Goes Home® Program designed to reduce the number of firefighter line-of-duty deaths that occur each year in the United States.

Chief Siarnicki delivers presentations at fire and emergency conferences and meetings across the country, increasing awareness of the Foundation, the efforts of its prevention work and support for the families of the fallen. In recognition of his outstanding leadership with the Foundation's and the fire service as a whole, he has been recognized by various groups and organizations to include: The Fire Engineering Lifetime Achievement Award, Alan Brunacini Fire Services Executive Safety Award from the International Association of Fire Chiefs, Metropolitan Fire Chiefs' Presidents Award of Distinction, University of Maryland, University College Distinguished Alumnus, American Burn Association's Moncrief Award and the Prince George's County Fire/EMS Silver Medal of Valor.

A strong proponent of higher education, he earned both his bachelor's and master's degrees from the University of Maryland University College (UMUC) and served as a UMUC faculty member for the Fire Science Curriculum.

Source: <https://www.firehero.org/about-us/foundation-staff/ronald-siarnicki/>

Dr. Denise L. Smith

Tisch Distinguished Professor
Professor for Health and Human Physiological Sciences Department
Director, First Responder Health and Safety Laboratory
Skidmore College

Professor Smith's primary area of research is cardiovascular health, with a specific focus on the relationship between heat stress and cardiovascular function. A significant portion of her research focuses on the cardiovascular strain associated with firefighting activity. She has led several government-funded studies to investigate strategies to minimize the physiological strain associated with firefighting. Professor Smith has also conducted several laboratory studies designed to identify specific components of firefighting activity (work performed, heat stress, sympathetic nervous stimulation) that are responsible for specific physiological responses to the combined stress of firefighting. Professor Smith has coauthored several textbooks and has published over 60 scientific papers, primarily on firefighter cardiovascular health. She has been awarded more than 15 million dollars in research funding, with awards from FEMA-AFG, DHS S&T, NIOSH, and DoD.

Source: <https://www.skidmore.edu/hhps/faculty/denise-smith.php>

Michele Steinberg

Wildfire Division Director
NFPA

Michele Steinberg is the wildfire division director at the NFPA. Since 2002, she has guided the development and growth of the Firewise USA® recognition program, the national Wildfire Community Preparedness Day campaign, and Outthink Wildfire™, a policy initiative to end the destruction of communities by wildfire. She also serves as secretary on the volunteer Board of Directors of the International Association of Wildland Fire and on the presidential Wildland Fire Mitigation and Management Commission.

Source: Michele Steinberg

Deputy Chief Rick Swan

IAFF

Spending the last 7 years as director of operational services for the IAFF, he was responsible for developing knowledge and codes/standards and provided field education and training within the fire service so that firefighters can understand and control their health and safety. He has been a member of several NFPA and International Organization for Standardization standards committees for over 20 years and chairs the NFPA Correlating Committee for Fire and Emergency Services Protective Clothing and Equipment. Rick spent 33 years at CAL FIRE, retiring as deputy chief in San Luis Obispo, and has almost 40 years of service as a union leader for the IAFF and CAL FIRE Local 2881, representing the over 7,000 women and men of CAL FIRE.

Source: Rick Swan

Adam K. Thiel

Fire Commissioner

City of Philadelphia Fire Department

Adam K. Thiel became the 20th commissioner of the Philadelphia Fire Department in May 2016 and is responsible for leading its 3,000+ members in every facet of protecting the city from fires and emergencies arising from all hazards. Thiel also served as Director of the Philadelphia Office of Emergency Management from 2019-2022. He has over 30 years of government, private sector, and nonprofit experience spanning five states. Before coming to Philadelphia, he held posts including Deputy Secretary of Public Safety and Homeland Security for the Commonwealth of Virginia, and Chief of the Fire Department in Alexandria, Virginia. Thiel earned a master's degree in cities from the London School of Economics, a master's in public administration from George Mason University, and has completed doctoral coursework in both public administration and public policy. He is an Aspen Institute Health Innovators Fellow, an Eisenhower USA Fellow, and a Leadership Philadelphia Fellow.

Source: <https://www.phila.gov/departments/philadelphia-fire-department/>

Appendix D: Summit Media

Media advisory

October 3, 2022

USFA to Host Fire Administrator's Summit on Fire Prevention and Control

The U.S. Fire Administration (USFA), a component of the Federal Emergency Management Agency (FEMA), in partnership with the National Fallen Firefighters Foundation (NFFF), will host the U.S. Fire Administrator's Summit on Fire Prevention and Control: State of Science on Oct. 11, 2022, from 1 to 6 p.m. EDT.

The summit marks the 75th anniversary of the 1947 President Truman Conference on Fire Prevention and Control that launched the [America Burning](#) report and established the USFA. Many of the outcomes from the original Truman Conference hold true today. For example, as outlined in the original Truman Conference Proceedings Report:

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.

"In 2022, the climate crisis fuels more frequent, destructive and deadly wildfire. In addition to the growing burdens of wildfire, the demands on our nation's local fire departments continue to increase, further exacerbating daily fire impacts on all our communities. Thus far in 2022, fires have killed more than 1,600 people nationwide. Additionally, firefighters pay a high price with 73 firefighters killed on duty so far this year," said USFA Fire Administrator Dr. Lori Moore-Merrell.

"The NFFF is proud to work with the USFA in providing an opportunity for the fire service — and more importantly, the public — to understand the impact of fire on communities across the country," said NFFF Executive Director Chief Ronald J. Siarnicki.

A first-of-its-kind livestreaming event from the National Emergency Training Center in Emmitsburg, Maryland, the Fire Administrator's Summit on Fire Prevention and Control: State of Science features presentations from the country's most prominent fire service leaders and researchers. The livestream event is for reporters, the public, the fire service, and local, state and national policy makers who want a better understanding of the challenges and recommended solutions to the critical fire problem in America. The summit kicks off the 100th anniversary of Fire Prevention Week.

The first 2 speakers for the State of Science are Philadelphia Fire Department Commissioner Adam Thiel and the City of New York Fire Department's Acting Chief of Training Frank Leeb. Both cities began 2022 with structure fires that killed 17 and 12 people, respectively. They will discuss the impact of those fires on their communities and fire departments.

Viewers of the livestream will then be introduced to topics such as the risks associated with the evolution of high-risk structures like lithium-ion energy storage facilities and massive shipping warehouses with robotic technology. The livestream event will also cover the training that structural firefighters need to respond to the new hazards associated with wildfires in the urban interface. It will highlight the recruitment and retention challenges faced by fire departments across the nation. Nationally renowned researchers will discuss the impact of the growing number and intensity of fires on the physical and mental health of firefighters, including the prevalence of cancer and suicide among the ranks.

Register for the livestreaming event here: www.firehero.org/USFA-Summit/

Confirmed State of Science speakers

- Dr. Jeff Burgess, University of Arizona Mel and Enid Zuckerman College of Public Health
- Chief John S. Butler, Fairfax County (VA) Fire and Rescue Department
- Dr. Kenneth Fent, National Institute for Occupational Safety and Health
- Karl Fippinger, International Code Council
- Chief Brita Horn, Rock Creek (CO) Volunteer Fire Department
- Dr. Sara Jahnke, Center for Fire, Rescue & EMS Health Research
- Dr. Steve Kerber, Fire Safety Research Institute
- Deputy Assistant Chief Frank Leeb, City of New York Fire Department
- Dr. Susan M. Moore, National Institute for Occupational Safety and Health
- Patrick Morrison, International Association of Fire Fighters
- Chief John H. Oates, International Public Safety Data Institute
- Chief Shane Ray, National Fire Sprinkler Association
- Dr. Denise L. Smith, Health and Human Physiological Sciences, Skidmore College
- Rick Swan, International Association of Fire Fighters
- Michele Steinberg, National Fire Protection Association
- Commissioner Adam K. Thiel, City of Philadelphia Fire Department
- About the U.S. Fire Administration

The USFA was established by Public Law 93-498, the Federal Fire Prevention and Control Act of 1974. The act called for the establishment of the National Fire Academy to advance the professional development of fire service personnel and others engaged in fire prevention and control activities. The act also called for a national system for the collection, analysis and dissemination of fire data necessary to assist local fire departments to establish research and action priorities. The USFA, as a component of FEMA, has a mission to support and strengthen fire and emergency medical services and stakeholders to prepare for, prevent, mitigate and respond to all hazards.

About the National Fallen Firefighters Foundation

Congress created the National Fallen Firefighters Foundation to lead a nationwide effort to honor America's fallen firefighters. Since 1992, the non-profit Foundation has developed and expanded programs that fulfill that mandate. Our mission is to honor America's fallen fire heroes; support their families, colleagues, and organizations; and work to reduce preventable firefighter death and injury. www.firehero.org.

Contact information:

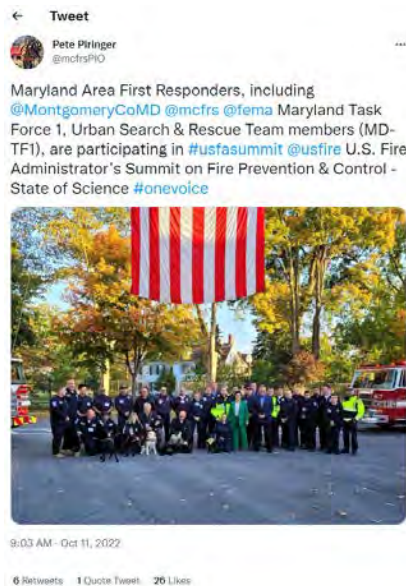
- FEMA Jeremy Edwards at jeremy.edwards@fema.dhs.gov
- USFA Teresa Neal at teresa.neal@fema.dhs.gov
- NFFF Kelly Lynch at klynch@firehero.org

Social media samples









Articles

NFPA Journal: Fall 2022

Call To Action

A first ever USFA summit on fire prevention puts the nation's fire problem in sharp focus

By Lorraine Carli

Cancer, behavioral health, recruitment and retention, and resources for firefighting in the wildland urban interface were just a few of the fire service-related issues addressed at a recent event designed to highlight the most pressing aspects of the nation's fire problem.

The Fire Administrator's Summit on Fire Prevention and Control, presented by the U.S. Fire Administration and the National Fallen Firefighters Foundation, brought together an array of fire service stakeholders, including NFPA, to identify critical issues and present possible solutions to those problems. The historic, first-of-its-kind event was held in October during the 100th anniversary of NFPA's Fire Prevention Week. This year also marked the 75th anniversary of the Conference on Fire Prevention, an event spearheaded by President Harry S. Truman to highlight the nation's fire problem.

[Watch a video of last month's USFA summit event](#)

President Joseph Biden addressed the group virtually to express his appreciation. "On behalf of my own family and every American, I just want to [say] again: Thank you, thank you, thank you. Fires will always be a fact of human life. And when the worst happens, when those alarms go off, when everything and everybody you love is in danger, there's no better sight in the world than that firefighter who's ready to go to work."

The Summit included two key components: a national roundtable between fire service leaders and Biden administration officials, and a live-streamed "State of Science" featuring presentations on fire issues by some of the most prominent fire-science experts in the United States.

The roundtable was moderated by US Fire Administrator Dr. Lori Moore-Merrell and included Department of Homeland Security Secretary Alejandro Mayorkas (virtual), Deputy Secretary John Tien, FEMA Administrator Deanne Criswell, and Special Assistant to the President Director Caitlin Durkovich. The discussion produced six big-picture asks of the administration.

- Chief Donna Black from Duck, North Carolina, who is also President of the International Association of Fire Chiefs, spoke about the need to provide proper training and equipment for firefighters nationwide to battle wildfires in the wildland urban interface, or WUI.
- Chief Kevin Quinn from Union Fire District in Rhode Island, who also serves as first vice chair of the National Volunteer Fire Council, presented a plan to address the shortage of career and volunteer firefighters across the country and to make the fire service more diverse by investing in a national apprenticeship program.

-
- Ed Kelly, general president of the International Association of Fire Fighters, asked that the federal government establish a comprehensive firefighter cancer strategy, invest in research, provide access to cancer screening for all firefighters, and reduce and ultimately eliminate PFAS exposure.
 - Chief Ernie Mitchell, former U.S. Fire Administrator and representative of the National Fallen Firefighters Foundation, discussed the efforts needed to prevent firefighters dying by suicide and to address the mental health needs of first responders. He also spoke of the need to elevate the fire service within the federal government to work side-by-side with other agencies working to protect and serve communities.
 - NFPA President and CEO Jim Pauley closed out the panel by saying that the way to create safer communities is by implementing and enforcing codes and standards, especially in the WUI and in underserved and vulnerable populations by providing affordable and fire-safe housing. He implored the federal government to incentivize compliance by providing funding to local jurisdictions for code implementation, inspection, and enforcement, urging that all federally funded construction projects be required to comply with the most current fire and building codes and that federal housing assistance be tied to the use and compliance of the most current fire, life safety, electrical, and building codes. He further asked that that government make investments in retrofitting public housing with fire sprinkler systems and to ensure all public housing units are equipped with working smoke alarms that are installed and maintained to the relevant codes and standards.
 - The State of Science presentations provided rich background on the specific asks to the federal officials during the morning roundtable, starting with Adam Thiel, commissioner of the Philadelphia Fire Department, and Frank Leeb, acting chief of training for the City of New York Fire Department. The two cities began 2022 with devastating structure fires that killed 17 and 12 people, respectively. Other presentations addressed the increasing frequency and intensity of wildfires in the WUI; firefighter training, recruitment, and retention needs; and the current physical and mental health toll experienced by firefighters, including the prevalence of cancer and suicide.

Dr. Moore-Merrell's charge to government, presenters, and attendees was to embrace these challenges and support efforts to address them. "Collectively, we can save lives and property and preserve the nation's infrastructure for future generations and protect our responders," she said.

The Road Ahead

Summit participants were left with a handful of key takeaways that should serve as motivation for action, starting with the fact that the nation has a fire problem.

That broad point was illustrated by Dr. Moore-Merrell, who opened the event with a poignant explanation of the significance of June 8, 2022 — the only day during the nine months leading up to the summit when no one died in a home fire somewhere in the US. On every other day, at least one person died in a fire at home. Steve Kerber, executive director of UL's Fire Safety Research Institute, underscored this observation by saying that we have the least amount of time to escape a fire in our homes than at any other point in history. And for every fire that receives public

attention, thousands more occur each day with little acknowledgement or media attention, yet with similar tragic devastation. The underlying circumstances noted in many of these fires — changing demographics of neighborhoods, inequity in housing, lack of public awareness of safety, complacency towards fire, and deficient code compliance — provide important insights into how to reduce future losses in this country. While there has been a significant reduction in loss over the last four decades, the largest decreases occurred more than 20 years ago, and in recent years the trendline has been fairly flat.

Those are the kinds of characteristics sound eerily familiar to anyone who has read the proceedings from the 1947 Turman event which read in part “The nation’s fire problem is exacerbated by the indifference with which some Americans confront the subject; the nation’s failure to undertake enough research and development into fire and fire-related problems; the scarcity of reliable data and information; the fact that designers and purchasers of buildings and products generally give insufficient attention to fire safety; [and] the fact that many communities lack adequate building and fire prevention codes.”

Nowhere in the modern version of this problem is the situation more acute than in the wildland urban interface. WUI fires increasingly contain the threat of becoming suburban or urban conflagrations, vast fires capable of destroying entire communities at any time during the year. Climate volatility, land use and building practices, and population shifts have put large swaths of the public, as well as the first responders who serve those people, in harm’s way. According to the latest NFPA Needs Assessment, structural firefighters are ill-equipped and ill-trained for this reality. Wildfire prevention and mitigation have been conducted predominantly through voluntary action, but to more rapidly impact this crisis, we need to change how we build and where we build. We need to bring the public, first responders, and policymakers together to make wildfire policy and regulatory changes.

In the face of these immense challenges, the health of the nation’s fire service needs greater attention. Cancer and behavioral health concerns are becoming more prevalent across both the volunteer and career ranks. While we know more about these issues than we did before, there is much more to do to better understand the risks to physical and mental health associated with the job and to provide adequate resources to address those risks. Additionally, there is a significant fire service staffing challenge. Covid, civil unrest, active shooters, and mass casualty events are contributing to a decline in recruitment and retention, as well as to a less-diverse workforce in both career and volunteer departments. Meanwhile, the number of calls to fire departments around the country has tripled over the last 30 years.

Finally, this event brought together fire service leaders who spoke with one voice on behalf of the entire fire service community. This united approach and collaborative spirit provide an opportunity to further reduce loss from fire. A recent NFPA study found that the most successful recipe for fire safety in the built environment is the implementation of fire safety technologies through mandated codes and standards, enforced through a strong system of checks and balances. Supporting this finding, the NFPA Fire & Life Safety Ecosystem™ is a framework of eight interconnected elements that work together to advance safety. The ecosystem includes policymakers setting the right regulatory framework; jurisdictions using the most updated codes and standards; applying all of the standards, including referenced standards; prioritizing safety across the board; promoting the development of skilled workers in the design, installation, inspection and ongoing maintenance;

supporting effective code enforcement; providing effective preparedness and response capabilities; and educating the public on the dangers posed by these hazards. Every component of the ecosystem is essential; when one or more elements is missing or ignored, tragedies can occur. This framework can provide a path forward against fire and a range of related challenges.

Source: <https://www.nfpa.org/News-and-Research/Publications-and-media/NFPA-Journal/2022/Fall-2022/Features/Summit-online-only>

FireRescue1 by Lexipol

November 14, 2022

USFA summit highlights fire groups 'singing off the same sheet of music'

Recent actions (and cautious optimism) suggest a finely tuned performance ahead from our fire service organizations

By Billy Goldfeder

I was recently privileged to be invited to the U.S. Fire Administrator's 2022 Summit on Fire Prevention and Control. Now to be honest, by nature of my age and refusal to go away, I've been honored to participate in many of these "where are we going" national forums and discussions on the future of the fire service. Some have mattered, and some have not.

So, before I detail more about this one, I want to share one example from the event where I think we may be getting it right. While there are many common challenges to all aspects of the fire service, one comment provided me with a real "aha moment."

During introductions of the leadership panel, National Volunteer Fire Council First Vice-Chair Kevin Quinn commented about some differences in the fire service, specifically the very real volunteer challenges these days. To this IAFF General President Ed "Edzo" Kelly responded, "I don't think we have that many differences, and we certainly have a whole lot of common challenges that we will work on together." And Kevin smiled and affirmed Edzo's comments.

The Summit on Fire Prevention and Control focused on the nation's fire problem and the needs of the fire and emergency medical responders.

BAM!

The fact that the leader of the largest firefighters' labor union and the leader of the nation's volunteer firefighters publicly agreed that solving our many common problems will require a team effort is a phenomenal place to start.

COMMON GROUND ISSUES

Just take a look at the primary challenges facing America's firefighters today (and in the future):

- ❶ Training and PPE for those working in the wildland/urban (suburban) interface
- ❷ Recruitment and retention
- ❸ Occupational cancer
- ❹ Firefighter behavioral health
- ❺ Elevation of the fire service — federal policy development and prioritization
- ❻ Codes and standards to protect the public and firefighters

If you are issued bunker gear, every one of the above issues impacts you. Every single one.

Recruitment: The volunteer fire service is in serious trouble, but we are also seeing measurably less interest in people applying to be career firefighters.

Retention: Keeping volunteers with increased call load, time restraint and requirements? In so many areas, career firefighters are moving to other departments or leaving the service all together for a variety of reasons, including working conditions, pay and leadership challenges.

Behavioral health: Firefighter wellness, mental health, PTSD and suicide — hardly a strictly career or volunteer issue.

Cancer: There is not a firefighter in America, career or volunteer, who doesn't know another brother or sister who has or had ... or is dealing with it themselves.

Hopefully I've made my point, as Edzo certainly made his.

If the leaders of the primary fire service organizations — IAFF, IAFC, NVFC, NFPA, NFFF and CFSI, and many other organizations leaders who were represented — maintain their commitment to actually work together, under Dr. Moore-Merrell's support and energy, and commit to actually work together, they will (without question) be more powerful than if they work by themselves, and they will impact the critical issues threatening our nation's fire service.

BREAKING DOWN OUR CHALLENGES

In 1947, President Harry S. Truman convened the first National Conference on fire prevention, life safety and control activities. Seventy-five years later, the USFA continued this tradition with this Summit on Fire Prevention and Control.

The summit focused on the nation's fire problem and the needs of the fire and emergency medical responders. It served as an opportunity to engage national leadership, evaluate the state of science, and collaborate to set forth actionable steps that can be taken. There are numerous well-defined and organized working groups that are breaking down the issues and developing plans to go forward. This is NOT a "meet and go" scenario where a report sits on a shelf. This is a "meet, work and do more work" scenario until realistic and funded solutions are identified. Multiple solutions to some very tough problems. Further, the Summit was only the beginning of work that will lead to reports and deliverables at the 2023 U.S. Fire Administrator's Summit, which is to be held annually during October Fire Prevention Week.

During the summit, the energy was palpable by participants eager to actually take on these issues, because every one of them knows these are very real problems. And while we had President Joe Biden join us and address the group virtually, his positive and supportive words of encouragement were great, no different than a highly motivating coach — it all comes down to how we perform together moving forward.

Imagine your favorite band performing but each musician playing "their own way." That is often what our fire service looks like. Sure, it may sound good on occasion (especially during a solo), but imagine how great it would sound if the musicians practiced together. While each musician is different in their own sound (just like the differences among career, combination, volunteer, urban, rural, suburban departments, etc.), when they come together, they will almost always get a standing ovation, and cheers for more.

That's the very doable potential of the U.S. Fire Administrator's 2022 Summit on Fire Prevention and Control, as long as those involved focus not only on their own issues but also the big national picture so that we all benefit — and the public, too. There is a whole lot of work ahead, and if we stay focused and genuinely work together, we will see a much stronger nationally united fire service, with some great sounding music.

Source: <https://www.firerescue1.com/leadership/articles/usfa-summit-highlights-fire-groups-singing-off-the-same-sheet-of-music-kdzntA2yPWqJ8OtS/>

Firehouse

October 11, 2022

Biden Praises FFs During Address to USFA Fire Prevention and Control Summit Attendees

President Joe Biden was the first president since Harry Truman to address the conference.

By Susie Nicol

EMMITSBURG, MD — President Joe Biden lauded America's firefighters Tuesday during a virtual address to attendees of the U.S. Fire Administrator's Summit on Fire Prevention and Control.

He is the first president since Harry Truman to speak to officials gathered to address the nation's fire problem.

"Cancer is a leading killer of firefighters. Toxic substances you've been exposed to as part of your job are almost certainly — certainly connected to those cancer diagnoses. And we're doing — we're going to do something about it. The Cancer Moonshot is bringing together every part of our government to cut cancer death rates in half and to end cancer as we know it, including by addressing environmental and toxic exposures to prevent cancer," Biden said.

"I'm determined — I'm absolutely determined to make sure you have the gear that protects you without making you or your family sick. And I'm urging Congress to send to my desk the Federal Firefighters Fairness Act — let me say it again: the Federal Firefighters Fairness Act — which are going to help federal firefighters and their families assess critical worker compensation resources, including making sure that several forms of cancer are presumed to be caused — presumed to be caused by the firefighter's job..."

The president also pointed out he is aware of impact that climate change is having.

"You know, the Inflation Reduction Act enables us to take unprecedented steps to confront climate crisis, which is going to protect forest health, reduce fire risk, and supercharge our clean energy future."

Technology also is being tapped to help keep firefighters safe. "We're using the Department of Defense's satellite imagery to detect wildfires in their early stages so firefighters have a better chance to suppress the fires early before they can impact on local communities. And we're working to help it — we're working to help educate the public on basic fire safety, like preparing fire escape plans, testing smoke and carbon monoxide alarms monthly and replacing those alarms every 10 years. This is the simple steps we can take to save lives."

The president lamented that he couldn't attend the summit. But was quick to add he was happy to speak with fire service leaders.

"Look, on behalf of my own family and every American, I just want to close by saying again: Thank you, thank you, thank you. Fires will always be a fact of human life. And when the worst happens, when those alarms go off, when everything and everybody you love is in danger, there's no better sight in the world than that firefighter who's ready to go to work. So, thank you for being who you are. Thank you for all the heroes you represent.

U.S. Fire Administrator Lori Moore-Merrell was ecstatic that Biden spoke to the group. She called his address historic, noting that no president since 1947 has taken the time to listen to their concerns.

Fire service leaders briefed Homeland Security Leadership, FEMA and the Administration on the critical issues facing the fire service and our nation."

She said the fire service needs to have a strong, single voice to bring about change.

"We gather at this National Roundtable from different organizations, but today we stand together as a unified fire service."

While some issues may take time to resolve, some can happen immediately, she pointed out.

June 8 was a historic day this year. "That's because June 8 was the only day that there were no known reported civilian home fire fatalities," she said, adding that on every other day this year someone died.

"Some of these tragedies make the evening news...like the Jan. 5 fire in Philadelphia that killed 12 people, among them nine children"

But, she noted, many other fatal fires don't make the headlines. And, she said, many were preventable.

She said that firefighters need to "do a better job to ensure that no more lives are taken by fires that could have been prevented if the codes and standards that are in place were enforced."

Among the topics addressed included how climate change affects the fire service and impacts firefighters who don't have sufficient gear or training.

"We are facing the fire problem in America with fewer firefighters than we need," she noted.

Department of Homeland Security Secretary Alejandro Mayorkas said firefighters once again demonstrated their bravery recently as they responded to the needs of residents whose lives were disrupted and destroyed by Hurricane Ian.

During Mayorkas' virtual address, he said he learned of some challenges during a meeting with the International Association of Fire Chiefs leadership including issues dealing the delivery of vital equipment including ballistic vests.

Mayorkas said he is concerned about the rising number of responders diagnosed with cancer.

"You all take care of us, and we must take care of you," he said.

Among the priority topics are climate change and wildfire fires, firefighter recruitment and retention, firefighter cancer, firefighter behavioral health support/parity with law enforcement, and codes, standards and enforcement.

Firefighter Recruitment and Retention: Chief Kevin Quinn, first vice-chair, National Volunteer Fire Council, said there are a number of reasons why there's a decline in people interested in joining the fire service. Among them he said are civil unrest, active shooters and mass casualty events. "Both career and volunteer departments are affected by this."

"In Minneapolis, for instance, the fire department normally receives about 2,500 applications per year. But this year, they received only 700 applications," he said.

Quinn suggested investing in a national apprenticeship program to address the shortage of firefighters and to make the fire service more diverse and inclusive.

"The fire service occupies a unique place in American society — trusted and often welcomed. We need to do everything we can, on every level of government, to attract firefighters to serve their communities."

Firefighter Cancer: IAFF General President Edward Kelly pointed to disturbing statistics about firefighters being diagnosed with cancer.

"Recently, the World Health Organization's International Agency for Research of Cancer declared a firefighter's occupational exposure at the highest level, as a Class 1 threat."

He added that research must be expanded to define the connection between exposures and genetic mutations.

"We ask the federal government to establish a comprehensive firefighter cancer strategy that invests in research, provides access to cancer screening for all..." Kelly said.

He is very concerned about carcinogens in bunker gear. "The very gear we rely on to protect us is making us sick. Next generation PPE must be developed."

Climate Change and Wildfire: IAFC President and Duck, NC, Chief Donna Black explained how climate change is affecting how firefighters do their jobs.

"As climate change drives extremes in weather, we see extremes emerging in our nation's fire problem," she said adding that fires in the wildland and wildland-urban interface are larger and more destructive."

Chief Black said some of these destructive fires are not limited to what many used to consider as wildfire season. "The Marshall fire in Colorado burned 6,000 acres, destroyed more than 1,000 homes and businesses and caused over \$500 million in damages in December."

She added that structural firefighters are finding entire neighborhoods ablaze or threatened. Training and equipment must be provided to volunteer and career personnel.

Water issues also have reached critical levels in some areas. “Limited water for firefighting is not something that may happen someday. It is happening now, today,” she said.

Behavioral Health Support/Parity with Law Enforcement: Former US Fire Administrator Ernie Mitchell said another issue facing the service is the increasing number of firefighters dying by suicide and suffering from mental health issues.

As a NFFF Board Member, Mitchell said recent statistics show firefighter suicides are estimated to be at least 100 annually.

“We are responsible for protecting those who protect us by investing in their mental health, including collecting accurate data,” he said.

In January, the FBI launched a collection agency to track suicides of law enforcement officers. “Federal agencies have poured millions of dollars into addressing the suicide problem for our colleagues in blue, but there is no comparable effort for the fire service.”

He said all responders should receive the same support as the men and women in blue.

Codes, Standards and Enforcement: James Pauley, President of National Fire Protection Association, the enforcement of fire codes is essential to saving lives.

“Fire disproportionately impacts our most vulnerable populations -- older adults, children, people of color, low-income populations and people with disabilities. This an equity issue. Safe housing and affordable housing should not be manually exclusive concepts,” he said.

He said three out of five home fire deaths occur in homes without smoke alarms or ones that fail to operate. Resources should be provided to retrofit housing units with hardwired or long-life battery powered detectors.

Source: <https://www.firehouse.com/operations-training/news/21283388/myriad-of-issues-and-solutions-discussed-by-at-usfa-fire-prevention-and-control-summit>

Homeland Security Today

October 14, 2022

Historic U.S. Fire Administrator’s Summit Tackles Challenges, Opportunities for Fire Service

Biden told the gathered fire professionals that “when the impacts of climate change are becoming increasingly evident, we’re calling on you more and more and more.”

By Bridget Johnson

Fire service and homeland security leaders discussed issues ranging from wildfires in the wildland-urban interface and improving firefighter safety to fostering more diverse and inclusive fire departments at the U.S. Fire Administrator’s Summit on Fire Prevention and Control on Tuesday at the National Emergency Training Center in Emmitsburg, Md.

"I can't begin to tell you how very important this summit is," U.S. Fire Administrator Dr. Lori Moore-Merrell said, calling the event "historic" after a morning roundtable that included Deputy Secretary of Homeland Security John Tien, National Security Council Senior Director for Resilience and Response Caitlin Durkovich, and FEMA Administrator Deanne Criswell. "We've identified some very real issues and we have a lot of work yet to do."

The summit marked the 75th anniversary of President Truman's Conference on Fire Prevention and Control in 1947 that launched the "America Burning" report and established the U.S. Fire Administration. The livestreamed event also kicked off the 100th anniversary of Fire Prevention Week.

Summit discussions focused on preparing for the impacts of climate change on fire departments, investing in a national apprenticeship program to grow the ranks of the fire service, establishing a comprehensive strategy to address cancer in firefighters, providing behavioral health and suicide prevention initiatives for firefighters, enforcing codes and standards to ensure more housing is better protected from fire, and involving the fire service in developing federal policy to ensure parity with law enforcement.

Ron Siarnicki, Executive Director of the National Fallen Firefighters Foundation and Retired Chief of the Prince George's County Fire/EMS Department, said that the foundation "is very proud to work side-by-side with the U.S. Fire Administration on so many projects, but especially in providing this opportunity for the American fire service and more importantly the individuals who are working to keep our communities safe."

"All of us owe it to those who have lost a firefighter to do all in our power to prevent another firefighter from dying and to prevent the public from suffering any loss from such occurrence," Siarnicki said.

Siarnicki praised Moore-Merrell as "a longtime champion for firefighter health and safety."

"Every day Dr. Moore-Merrell demonstrates her commitment to protecting the nation from fire, helping firefighters hear learn about the training tools available and the equipment they need to do their job effectively," he said. "And she does all she can to ensure that every firefighter goes home at the end of their tour of duty."

President Biden addressed the summit by video, noting to the gathered fire professionals that "when the impacts of climate change are becoming increasingly evident, we're calling on you more and more and more."

"Extreme heat and prolonged drought have turned wildfire season into wildfire years," he said. "And local firefighters are being called in more to respond to the fires in the wildland urban interface where we're moving out into the forest areas to develop and it becomes local and federal."

Biden said the administration "is doing everything we can to make sure you have the resources you need to do your job as safely and effectively and efficiently as possible" including increasing federal firefighting grants to fund more local firefighters, emergency response vehicles, and sets of turnout gear.

The International Association of Fire Fighters and the Metropolitan Fire Chiefs Association recently warned firefighters about health risks, including increased risk of liver and kidney cancers, linked to PFAS chemicals in their protective gear.

"Cancer is a leading killer of firefighters. Toxic substances you've been exposed to as part of your job are almost certainly — certainly connected to those cancer diagnoses," Biden said. "And we're doing — we're going to do something about it," including recently creating a special claims unit at the Department of Labor "to ensure that they're processing federal firefighters' cancer claims quickly."

"I'm absolutely determined to make sure you have the gear that protects you without making you or your family sick," he added.

The president said the administration is "doing everything we can to ease the burden on our firefighters by preventing fires" while "also maximizing protections for people when fires do break out, through a national initiative to help states, local, and tribal and territorial governments adapt and adopt the most up-to-date building codes that reflect the threats from climate change."

"We're using the Department of Defense's satellite imagery to detect wildfires in their early stages so firefighters have a better chance to suppress the fires early before they can impact on local communities," he continued. "And we're working to help educate the public on basic fire safety, like preparing fire escape plans, testing smoke and carbon monoxide alarms monthly and replacing those alarms every 10 years. This is the simple steps we can take to save lives."

Biden thanked those in the fire service "on behalf of my own family and every American," because "when the worst happens, when those alarms go off, when everything and everybody you love is in danger, there's no better sight in the world than that firefighter who's ready to go to work."

Source: <https://www.hstoday.us/featured/historic-u-s-fire-administrators-summit-tackles-challenges-opportunities-for-fire-service/>

UL Research Institutes

November 2, 2022

UL Research Institutes Joins U.S. Fire Administrator's Summit on Fire Prevention and Control

On Oct. 11, 2022, The U.S. Fire Administration (USFA), a component of the Federal Emergency Management Agency (FEMA), in partnership with the National Fallen Firefighters Foundation (NFFF), hosted the U.S. Fire Administrator's Summit on Fire Prevention and Control: State of Science. The summit marks the 75th anniversary of the 1947 President Truman Conference on Fire Prevention and Control that launched the American Burning Report and established the USFA.

"In 2022, the climate crisis fuels more frequent, destructive and deadly wildfires. In addition to the growing burdens of wildfire, the demands on our nation's local fire departments continue to increase, further exacerbating daily fire impacts on all our communities," said Dr. Lori Moore-Merrell, U.S. fire administrator. "We gather at this national roundtable from different organizations, but today we stand together as a unified fire service," she added, stressing the need for the fire service to have a strong, single voice to bring about change.

Among those in attendance at this historic event were UL Research Institutes' (ULRI) chief research officer, Chris Cramer, and Fire Safety Research Institute (FSRI) executive director, Steve Kerber alongside representatives from the International

Association of Fire Fighters (IAFF), National Fire Protection Association (NFPA), National Institute for Occupational Safety and Health (NIOSH), Center for Fire, Rescue & EMS Health Research (CFREHR), Philadelphia Fire Department, City of New York Fire Department and other notable fire safety organizations.

Speakers presented about topics critical to the fire service and safety, including research, codes and standards, climate change, wildfire, recruitment, retention and health. Dr. Kerber was among those chosen to present, and he described how new technology and changes in today's homes and furnishings have made fires more deadly than in the past. He further emphasized the fire environment and society continue to evolve and create new fire safety challenges in the world. "Evolutions will continue. We can't let them continue to outpace safety," said Kerber.

Several FSRI Advisory Board members also featured prominently on the agenda. Noting that the World Health Organization's International Agency for Research on Cancer recently classified firefighting as a known human carcinogen, Dr. Kenneth Fent, a research industrial hygienist at NIOSH, called for firefighter participation in a new data collection effort called the National Firefighter Registry (NFR), which aims to generate detailed knowledge about cancer in the fire service to reduce the disease's incidence. Dr. Denise Smith, a professor at Skidmore College in New York and a research scientist at the University of Illinois Fire Service Institute, discussed the reasons firefighters also have a higher risk of heart disease. According to Smith, firefighters should be screened for cardiovascular disease and receive preventive fitness and wellness programs. Commissioner Adam K. Thiel, City of Philadelphia Fire Department, shared valuable insights into the far-reaching impact the fire service makes in their community. "The United States has a fire problem. America is still burning," said Thiel. "We can do better. We must do better. And we cannot do it alone. Fire is everyone's fight."

In a virtual address to the Summit, United States president, Joe Biden, underscored how many of the outcomes from the original Truman Conference still hold true today. "Extreme heat and prolonged drought are turning wildfire season into wildfire years. And local firefighters are being called on more and more to respond to the fires in the wildland urban interface (WUI)," said Biden. "I want you to know we're doing everything we can to make sure you have the resources you need to do your job as safely and efficient as possible."

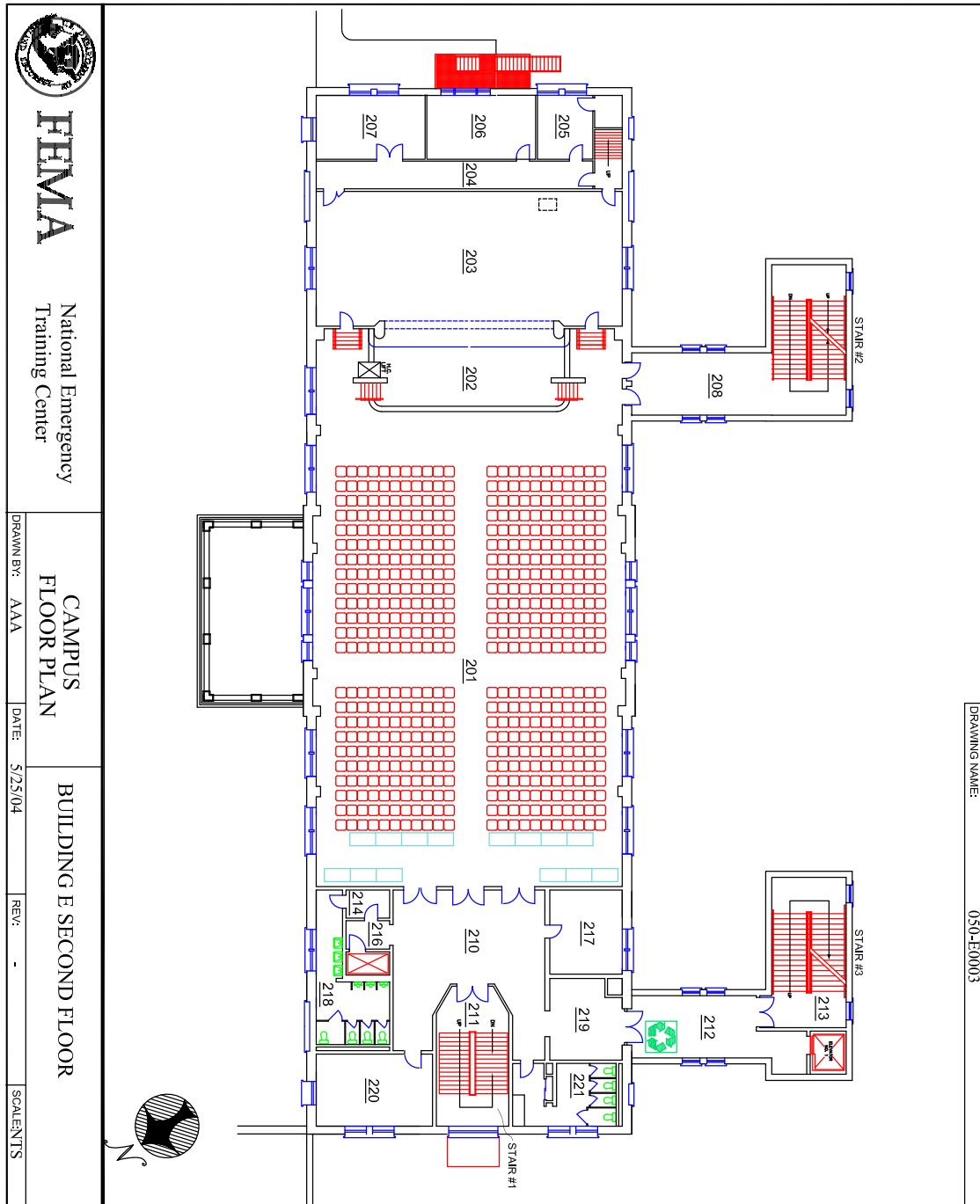
FSRI's extensive research and evidence-based insights will continue to inform what evolutions in strategies and tactics may be needed to address the nation's fire problems. Following the Summit, Dr. Kerber was among those leaders gathered from research, national organizations and governmental affairs to discuss ways to collaboratively advance six critical fire safety needs requested by federal officials, which included:

- ❖ Improving parity with law enforcement in policy development
- ❖ Investing in a national apprenticeship program to address shortages and diversity
- ❖ Providing behavioral health resources to the fire service
- ❖ Preparing firefighters for climate-driven increases in wildfires in the wildland urban interface
- ❖ Implementing and enforcing codes and standards for fire-safe housing
- ❖ Establishing a comprehensive firefighter cancer strategy

Under Moore-Merrell's guidance, six task groups were formed to address these urgent issues and this week a landing page was published that highlights the issues in more detail and features a recorded video of the State of Science presentations delivered during the Summit. The task groups are charting a path forward for each area of concentration and will turn to the USFA's Fire and Life Safety Communicators Initiative (FLSCI) to develop a strategy for message delivery, promotion and amplification over the coming weeks, months and years. FSRI is represented on three of the task groups and FSRI's director of research amplification, Zoe Susice, represents FSRI on the FLSCI and is a member of the messaging committee that will lead the initiative's efforts in this area.



Appendix E: National Emergency Training Center (E Auditorium): Site of the 2022 U.S. Fire Administrator's Summit on Fire Prevention and Control





Appendix F: National Roundtable Briefing Document



2022 U.S. Fire Administrator's Summit on Fire Prevention and Control

A National Roundtable

October 11, 2022
National Emergency Training Center
Emmitsburg, Maryland



FEMA



U.S. Fire Administration
Working for a fire-safe America



Welcome Letter

Welcome to the **2022 U.S. Fire Administrator's Summit on Fire Prevention and Control**. You are taking part in a historic meeting of governmental officials, notable fire service leaders, and expert scientists, gathered with the collective purpose of combating the fire problem in America and keeping firefighters safe and healthy.

The federal government's involvement in fire protection began with President Woodrow Wilson's first proclamation of fire prevention week in 1922. Today, as we commemorate that proclamation's 100th anniversary, we will carry on that tradition.

The fire problem in America was also addressed in 1947 by President Harry S. Truman after several horrific fires with tremendous loss of life. It is a true honor for this Summit to have President Truman's grandson, Clifton Truman Daniel, with us today.

In 1968, the Fire Research and Safety Act created the National Commission on Fire Prevention and Control, whose mandate was to examine the nation's fire problem and formulate recommendations for improving fire safety. This led to the formative 1973 America Burning document, which set the course for efforts in the latter part of 20th Century to reduce the effects of fire. We are now nearly one-quarter of the way through the 21st Century, and **America is still burning**.

In fact, the United States continues to have the highest per capita death rate and property loss of all major industrialized nations. This Summit is an opportunity for you to join me in reducing the effects of fire loss as envisioned by President Woodrow Wilson and President Harry S. Truman.

I challenge you to lean in and support this effort with all your might. Individually, we have limited impact. Collectively, we can save lives and property and preserve the nation's infrastructure for future generations ... and protect our responders. The task is daunting but not insurmountable.

It is my pleasure to have you join us in our renewed effort to make America fire safe, and I look forward to working with you to make our country a model for fire safety that other nations will aspire to emulate.

Sincerely,



Lori Moore-Merrell, DrPH, MPH
U.S. Fire Administrator
U.S. Fire Administration

Table of Contents

Agenda	1
A National Roundtable	2
Chief Donna Black, International Association of Fire Chiefs	3
Chief Kevin Quinn, National Volunteer Fire Council	5
General President Edward Kelly, International Association of Fire Fighters ...	6
Chief Ernest Mitchell, Jr., National Fallen Firefighters Foundation.....	7
Mr. James Pauley, National Fire Protection Association.....	8
Fire Prevention and Control Fact Sheets.....	10
Impact of Climate Change	11
Fire Service Apprenticeship Program	13
Impact of Occupational Cancer	14
Impact of Behavioral Health	15
Parity with Law Enforcement in Federal Policy Development	16
Impact of Codes and Standards.....	18

Agenda

Welcome and Opening Remarks

Dr. Lori Moore-Merrell
U.S. Fire Administrator

Mr. Clifton Truman Daniel

National Roundtable

Chief Donna Black
President, International Association of Fire Chiefs

Chief Kevin Quinn
First Vice Chair, National Volunteer Fire Council

General President Edward Kelly
International Association of Fire Fighters

Chief Ernest Mitchell, Jr.
Board of Directors Member, National Fallen Firefighters Foundation
Former U.S. Fire Administrator

Mr. James Pauley
President and Chief Executive Officer, National Fire Protection Association

Presidential Proclamation of the 100th Fire Prevention Week

Closing Remarks

A National Roundtable



Chief Donna Black

President, International Association of Fire Chiefs

I am honored to speak with you this morning. As Fire Chief of Duck, North Carolina, I have witnessed the effects of climate change. I have seen hurricane-driven storm surges and wind endanger our residents and visitors and damage our buildings, beaches, and roads.

As climate change drives extremes in weather, we see extremes emerging in our nation's fire problem. Due to climate change, more fire departments are responding to an increasing number of wildland-urban interface and suburban conflagration fires.

The wildland-urban interface is where suburban and rural areas merge with the wildland. About one-third of our population lives in this built environment. My state ranks fourth in terms of houses in the wildland-urban interface, trailing only California, Texas, and Florida.

Fires in the wildland and wildland-urban interface are also larger and more destructive. The Western states continue to experience significant impacts, including increases in fires so severe that they threaten forest recovery. These fires are not limited to the western U.S. — the southeast may see large fires increase by 300 to 400% in the next 30 years.

Nor are these fires limited to a season. Colorado's Marshall Fire burned 6,000 acres, destroyed more than 1,000 homes and businesses, and caused over \$500 million in damages in December, well outside the traditional wildland fire season.

With suburban conflagration fires in the wildland-urban interface, structural firefighters are not fighting a single-family house fire. Instead, they are responding to entire neighborhoods and communities under threat. The NFPA's needs assessment found that while 88% of structural fire departments respond to interface fires, only 50% have training on interface fires involving multiple structures.

This must change. We need funding to provide all firefighters — career and volunteer — with the training and equipment necessary to meet these challenges.

Properly equipped and trained firefighters can conduct rapid fire attack operations, reducing life and property loss, preserving scarce firefighting resources, and lessening environmental impacts.

Finally, water is a critical issue as droughts continue. Limited water for firefighting is not something that may happen someday. It is happening now, today. In July, firefighters in Pembroke, Massachusetts could not use their fire hydrants because of a water shortage. Officials in Las Vegas, New Mexico announced they had about 20 days of water left as ash and debris from the state's largest wildfire contaminated the supply. Without readily available water, firefighters may not be able to stop a small brush fire from becoming a disaster.

In closing, we cannot continue this cycle. Our current system, while much improved, cannot overcome climate change, population growth, and complex changes in both our society and the built environment. **We must prepare all firefighters for the climate-driven increase in wildfires in the wildland-urban interface by providing them with the proper training and equipment.**

Thank you again for this opportunity.

Chief Kevin Quinn

First Vice Chair, National Volunteer Fire Council

In my opinion, being a firefighter represents one of the most significant ways to serve a community.

Sadly, the number of people interested in becoming firefighters is declining. While we must study why this is happening, I can share with you the challenges I've seen and heard from firefighters across the country.

Over the past 2 1/2 years, there have been mass retirements in fire departments due to the COVID pandemic. A number of other factors contributed to the decline in recruitment and retention of firefighters, including civil unrest, active shooters, and mass casualty events. Both career and volunteer departments are affected by this.

In order to maintain services within their communities, fire departments are requiring mandatory overtime, and they are having difficulty recruiting and retaining employees. In Minneapolis, for instance, the fire department normally receives about 2,500 applications per year. But this year, they received only 700 applications.

While there has been a decline in the number of volunteer firefighters over the past 30 years, call volume has more than tripled, primarily due to increased emergency medical calls. Increasing time demands, time-consuming training requirements, and aging communities make finding and keeping new volunteers challenging.

The fire service struggles to recruit and retain women and people of color. The most recent data from the Bureau of Labor Statistics reported that 11.6% of career firefighters were Hispanic or Latino, 8.5% were African-American, and 1.3% were Asian. Women represent 11% of volunteer firefighters and 5% of career firefighters, according to the NFPA's 2022 "U.S. Fire Department Profile" report based on 2020 data.

As Dr. Moore-Merrell mentioned earlier, we are here to provide some solutions.

One solution is to invest in a national apprenticeship program to address the shortage of firefighters and to make the fire service more diverse and inclusive. A fire service apprenticeship program could mirror the Registered Apprenticeship Program and the Industry-Recognized Apprenticeship Program administered by the Department of Labor. Fire departments can benefit from apprenticeship programs by attracting people who might not have considered the fire service originally as a career or as a way to serve their community.

The recent grants awarded under the Apprentice Building America program are grounded in equity, job quality, sustainability, and evidence-based practices. Diversity, equity, and inclusion are vital to the longevity of the fire service, and these types of grants support these factors.

The fire service occupies a unique place in American society – trusted and often welcomed. We need to do everything we can, on every level of government, to attract firefighters to serve in their communities. Thank you for being here today.

General President Edward Kelly

International Association of Fire Fighters

We ask the federal government to establish a comprehensive firefighter cancer strategy that invests in research, provides access to cancer screening for all firefighters, and reduces and eliminates PFAS exposure.

In 2010, NIOSH found firefighters have excess cancer risk compared to the general population for multiple cancers, including testicular, brain, prostate, colon, mesothelioma, multiple myeloma, and leukemia. Recently, the International Agency for Research on Cancer declared a firefighter's occupational exposure as "Class 1, threat, carcinogenic to humans."

Given that there is now little doubt that the higher risk is due to our occupational exposures, what we need now is to further understand the link between these exposures and cancer development. There has been some critical research into the connection between exposures and genetic mutations, and that research must continue and expand until we know enough about the impact of cancer on firefighters. Thus far, what we are learning from science about this matter is of great concern to our profession.

Second, we need access to health screenings for all firefighters, throughout their time as a firefighter and in retirement when the chronic exposures usually manifest. For example, firefighters have a higher risk of lung cancer, yet it is often difficult for individual firefighters to get lung screenings due to existing recommendations that do not take into account that our profession is a significant risk factor for cancer. We must direct medical professionals and insurance companies to account for this occupational risk when making coverage decisions. A comprehensive, aggressive screening program will help us find and treat cancer early, when there is a greater likelihood of a positive outcome.

Finally, we need to reduce PFAS exposures. Because of the slow rate in which they degrade, PFAS have been termed "forever chemicals." None of the over 12,000 types have proven to be safe. PFAS are in some foams we use to put out particularly difficult fires and we urge action to ban the production and use of these foams, as they have in European countries.

PFAS accumulate in our bodies, compounds our exposures, and contribute to higher rates of several cancers. They can pass in utero and via breastmilk to the children of female firefighters. And PFAS are a driver of higher rates of testicular and prostate cancers in male firefighters.

Most concerning, our bunker gear contains PFAS. The very gear we rely on to protect us is making us sick. Next-generation PPE must be developed, evaluated, and manufactured as quickly as possible. Most departments cannot afford to replace their gear and we need to make sure that funding isn't a barrier to replacement. We must also plan for the safe disposal of our existing gear.

Time is of the essence, and we must act now. Together, we can ensure other families do not experience the pain we have felt.

Chief Ernest Mitchell, Jr.

Board of Directors Member, National Fallen Firefighters Foundation

As my esteemed colleagues have discussed, preventing and mitigating fires is crucial to protecting the lives of citizens, and protecting firefighters from a toxic environment is vital. Today, I want to share another issue affecting families and fire departments across the country, the increased number of firefighters dying by suicide and suffering from behavioral health issues. It is our position, that we need to provide behavioral health resources and suicide prevention initiatives for all firefighters.

According to organizations tracking the issue, the number of firefighter suicides is estimated to be at least 100 per year. Additionally, the “Ruderman White Paper on Mental Health and Suicide of First Responders” noted that the suicide rate for firefighters is 18 per 100,000 compared to 13 per 100,000 for the general public.

We are responsible for protecting those who protect us by investing in their mental health, including collecting accurate data. According to evidence-based research, behavioral health awareness campaigns provide effective intervention methods. It is our collective responsibility to provide those who serve with the tools they need to help themselves and each other.

The fire service, as well as our brothers and sisters in blue, are both dealing with occupational-related behavioral health issues. The FBI launched the Law Enforcement Suicide Data Collection on January 1, 2022, to help improve understanding and prevent suicide among law enforcement officers. We applaud this effort and see this data collection as a model of what is needed in the fire service. Federal agencies have poured millions of dollars into addressing the suicide problem for our colleagues in blue, but there is no comparable effort for the fire service.

As policies and programs are developed by federal agencies on first responder behavioral health and other topics, **it is time to involve the fire service in federal policy development on an equal basis with law enforcement.** Nearly every Cabinet-level department in the federal government plays a role in addressing the fire problem in America. Each has programs to address fire safety issues in keeping with its specific mission. Our Fire Administration must be elevated to adequately represent the more than 1.1 million firefighters serving in this country.

Where relevant issues touch law enforcement, emergency medical services (EMS), and the fire service, it is essential that the federal government gives equitable consideration to each discipline. Initiatives addressing sustainable infrastructure, resiliency in the built environment, or public health initiatives cannot operate in silos. Public safety must be approached holistically, which requires equal support to all first responders — the fire service, EMS providers, and law enforcement.

Mr. James Pauley

President and Chief Executive Officer, National Fire Protection Association

More than 300 codes and standards influence fire and life safety in the built environment. We can create safer communities by assisting local jurisdictions in implementing and enforcing these codes and standards, which will keep Americas safe from the “menace of fire,” just as Mr. Daniel’s grandfather spoke of in 1947.

State and local governments are responsible for promoting the use and enforcement of current codes and standards. The federal government can help by incentivizing compliance and providing funding to local jurisdictions for code implementation, inspection, and enforcement.

Proper use of life-saving technology, like smoke alarms, carbon monoxide alarms, and automatic fire sprinkler systems, is proven to save lives. All modern buildings require these systems, and the fire codes must be consistently and aggressively enforced.

In addition, we strongly urge that all federally funded construction projects be required to comply with current fire and building codes and that federal housing assistance needs to be tied to the use and compliance of current fire, life safety, electrical, and building codes.

Fire disproportionately impacts our vulnerable populations — older adults, children, people of color, low-income populations, and people with disabilities. This is an equity issue. Safe housing and affordable housing should not be mutually exclusive concepts.

Nearly a million households live in public housing units in the United States, and fire safety improvements in public housing must receive heightened attention.

In 1992, Congress passed the Federal Fire Safety Act, requiring newly constructed multi-family housing units to have fire sprinklers. HUD estimates that approximately 570,000 multi-family public housing units are still in the inventory constructed before the sprinkler requirement, of which a significant portion still lacks fire sprinklers.

We must make investments in retrofitting public housing with fire sprinkler systems. An NFPA study found that in buildings with sprinkler systems the civilian fire death and injury rates were 89 percent and 27 percent lower.

Additionally, HUD must ensure all public housing units are equipped with working smoke alarms that are installed and maintained under the relevant codes and standards.

Nearly three out of five home fire deaths are caused by fires in properties without smoke alarms or smoke alarms that failed to operate. HUD must provide resources to public housing authorities to either retrofit housing units with hardwired smoke alarms or require the installation of tamper-resistant long-life battery-powered smoke alarms.

By embracing current fire and life safety codes and standards at all levels of government, we can make great strides in addressing the fire problem in our nation.

Together we can create safer communities by implementing and enforcing codes and standards, especially in the wildland-urban interface and underserved and vulnerable populations providing affordable and fire-safe housing.

It is important to note this year marks the 100th Anniversary of the National Fire Protection Association's Fire Prevention Week. The theme is 'Fire Won't Wait, Plan Your Escape.' This theme clearly applies to all communities, including the urban interface. Each year, the President of the United States signs the proclamation of Fire Prevention Week, signaling the federal government's support of saving lives and property.

Fire Prevention and Control Fact Sheets



Impact of Climate Change



Prepare all firefighters for the climate-driven increase in wildfires in the wildland urban interface (WUI) by providing them with the proper training and equipment.

Issue

WUI fires are one of the most devastating fire problems in the United States. Currently, most structural firefighters receive little to no training on how to respond, remain safe, and/or how to operate effectively in an extremely dangerous and dynamic fire environment.

Impact Areas

Occurrence of Wildfire

According to a June 2022 U.S. Congressional Budget Office report, the intensity of wildfires has increased, as has the number of wildfires impacting the built environment over the past 30 years. As our nation continues to grow and develop in the WUI, our communities are faced with increased wildfire threats associated with:

- ▶ **Increased populations.**
- ▶ **Reduced land management practices.**
- ▶ **Dangerous increase of fuel buildup.**
- ▶ **Climate change.**

The fire service today is faced with three main fire types:

1. **Structural fires** — fires involving built construction where trained firefighters have specific strategies and tactics to maintain life safety and gain control of a fire, including interior attack, exterior attack, search and rescue, ventilation, salvage, and overhaul.
2. **Wildland fires** — fires typically involving trees and other vegetation where wildland trained firefighters use specific strategies and tactics to gain control and suppress the fire, including offensive (direct attack) and defensive (indirect attack), backfire burning, and trenching. These strategies use equipment and/or resources such as bulldozers, aircraft, hand crews, and fire engines to construct fire lines that provide control and containment of the fire.
3. **WUI fires** — fires occurring in the built (structural) environment directly adjacent to or intermixed with a wildland area. WUI fire operations have non-standardized and relatively new and different strategies and tactics when compared with either strictly structural or wildland firefighting. Firefighters operating in the WUI use primary and secondary tactics typically conducted by structural engine crews attempting to adapt these tactics to fit the wildland fire situation.



FEMA



U.S. Fire Administration
Working for a fire-safe America



Firefighting Resources

Wildfire knows no boundaries. Fires can start and burn across federal, tribal, state, local, and private lands. That means fires are often fought with a combination of agencies and firefighters from different training backgrounds and employers. These differences include seasonal federal and state wildland firefighters, state and local career firefighters, and volunteer firefighters from community-based fire stations. While some firefighters trained to operate in the built environment are also specifically trained to engage in wildland firefighting, the majority have little to no training for operating in an urban or suburban conflagration with multiple structures burning simultaneously.

Advances in command and coordination, especially at large, long-duration wildland and WUI fire events, have improved resource deployment and operations on the ground. However, these resources often take time to get into place. Therefore, initial response often comes from state and local fire departments, many of which are already dealing with limited and overworked staff.

Training, Equipment, and Water

Local fire department responders are typically trained as structural firefighters given that single family dwellings are the most common fire risk they encounter. Structural firefighters, accustomed to fighting one structure fire at a time, are now being confronted with multiple structures burning simultaneously. They must react and respond with uncharacteristic tactics and strategies to successfully mitigate the event by reducing or eliminating fire spread. The reality is that they must add urban interface wildfire strategies and tactics to their operational repertoire.

As the risk of losing entire communities from wildfire extends to a year-round threat, staffing resources, proper training, and equipment are necessary to fight these WUI fires.

Training and Equipment

Communities across the nation are experiencing an increasing number of larger and more destructive wildland, urban interface, and suburban conflagration fires. Because these fires are occurring more often in both suburban and rural areas adjacent to or intermixed with the wildland, structural firefighters are regularly involved in suppression efforts and responsible for defending homes and critical infrastructure. According to the National Fire Protection Association Needs Assessment, 88% of structural fire departments in the U.S. respond to urban interface fires, but only 40 percent of those fire departments provide training on urban interface strategy and tactics.

Additionally, there is often difficulty accessing wildland firefighting equipment including PPE and proper footwear, for both women and men who attend training and are involved in WUI firefighting.

Water Access

Particularly in the West, water is a limited and often contested resource. Drought conditions elsewhere in the country are causing similar effects to spread eastward. Scarcity of water has a severe impact on firefighting efforts. Additionally, fire in watershed areas and burn scars following a fire can contaminate water resources as debris and other contaminants affect both availability of potable water and treatment efforts.

More Information



FEMA



U.S. Fire Administration
Working for a fire-safe America



Fire Service Apprenticeship Program



Invest in a national apprenticeship program to address the shortage of firefighters and to make the fire service more diverse and inclusive.

Issue

In recent years there has been a steady decline in the number of firefighters in the nation. This decline is impacting both career and volunteer departments, leaving the communities they serve vulnerable to threats, and increasing the stresses among firefighters and the municipalities. It is imperative that we invest in programs to incentivize individuals to join volunteer and career fire departments.

Figure 1. Number of Career Firefighters and Rate per 1,000 People

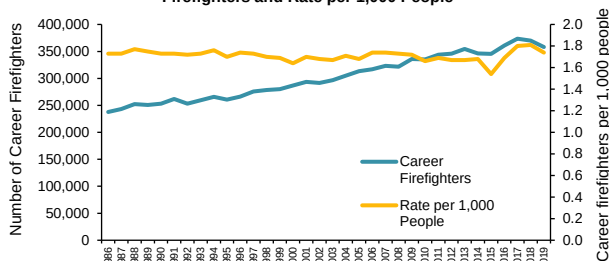
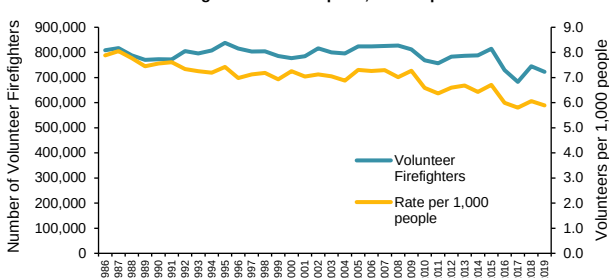


Figure 2. Number of Volunteer Firefighters and Rate per 1,000 People



NFPA. US Fire Department Profile 2019 Rita Fahy, Ben Evarts and Gary P. Stein, December 2021. <https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/osfdprofile.pdf>

Impact Areas

Local communities are facing numerous challenges when it comes to staffing local fire departments. The COVID-19 pandemic, civil unrest, active shooter, and mass casualty events have all contributed to recruitment and retention challenges for career and volunteer fire departments. In addition, increasing emergency call volumes, greater time demands, time-consuming training requirements, aging communities, and the physical and behavioral risks of the occupation create further challenges to fire departments struggling to maintain sufficient staffing levels.

The fire service struggles to recruit and retain women and people of color. The most recent data from the Bureau of Labor Statistics in 2019 reported that 11.6% of career firefighters were Hispanic or Latino, 8.5% were African American, and 1.3% were Asian-Pacific Islanders. Women represent 11% of volunteer firefighters and 5% of career firefighters, according to the NFPA's 2022 "U.S. Fire Department Profile" report based on 2020 data.

The creation of a National Fire Service Apprenticeship program would assist local communities in addressing the shortage of firefighters in both career and volunteer departments and help make the fire service become a more diverse and inclusive vocation. The fire service apprenticeship program should be designed to mirror the Department of Labor's Registered Apprenticeship and the Industry-Recognized Apprenticeship Programs.

More Information



Impact of Occupational Cancer



Establish a comprehensive firefighter cancer strategy that invests in research, provides access to cancer screening for firefighters, and reduces and eliminates PFAS exposure.

Issue

Firefighters have a 9% higher risk of developing cancer and a 14% higher risk of dying from cancer compared to the general public.

Impact Areas

Research

Greater investment in research will expand our understanding of the mechanisms between occupational exposures and cancer, why firefighters are at heightened risk from some cancers, and to better understand the cancer risks of our under-studied populations, including women and minorities.

Access to cancer screenings

Preventive screenings can identify cancer in its earliest stages when positive treatment outcomes are more likely. However, it remains difficult for individual firefighters to receive early screenings as current screening guidance does not account for their occupational exposures. Revised screening guidance can help medical professionals and insurance companies understand the need to screen firefighters based on their higher cancer risk.

Reduce and eliminate PFAS exposures

PFAS are likely carcinogenic chemicals that degrade very slowly, earning the label "forever chemicals." PFAS are found in a firefighter's blood, their firehouses, some firefighting foams, and perhaps most concerning, bunker gear. These chemicals are intensifying exposures, even though it is coming from the very gear meant to protect firefighters. Next-generation PPE can remove this risk.

CANCER RESEARCH

Fire Fighter Routes of Cancer Exposure



Inhalation

From breathing contaminants due to not wearing a SCBA, or to ill-fitting or defective SCBA



Absorption

From contaminants going through, around, or under gear and contacting the skin



Ingestion

From touching contaminated gear and not washing hands properly

Fire Service: Increase training and education about safe work practices to reduce cancer exposures.



Source: <https://www.fda.gov/oc/ohrt/ohrt-report-2018.pdf> and <https://www.fda.gov/oc/ohrt/ohrt-report-2018.pdf>

More Information



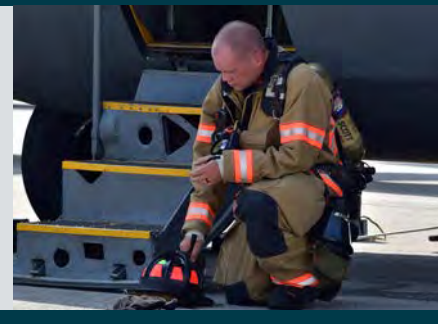
FEMA



U.S. Fire Administration
Working for a fire-safe America



Impact of Behavioral Health



Provide behavioral health resources and suicide prevention initiatives for all firefighters.

Issue

An increasing number of firefighters are dying by suicide suffering from behavioral health issues, including post-traumatic stress, from exposures that they have suffered while delivering emergency medical services to the public. There is a lack of culturally competent behavioral health specialists to assist firefighters, and local Employee Assistance Programs are ill-equipped to assist first responders.

Impact Areas

Firefighters and other rescue personnel develop PTSD at a similar rate to military service members returning from combat, according to an August 2016 study from the Journal of Occupational Health Psychology. The report reveals that approximately 20 percent of firefighters and paramedics meet the criteria for PTSD at some point during their career.¹ This compares to a 6.8 percent lifetime risk for the general population. The connection between PTSD and traumatizing rescue work is clear.

The number of firefighter suicides is estimated to be at least 100 per year. According to the "Ruderman White Paper on Mental Health and Suicide of First Responders," the suicide rate for firefighters is 18 per 100,000 compared to 13 per 100,000 for the general public.

The federal government has a responsibility to protect those who protect us by investing in the protectors' mental health. Grant programs funding peer-supported behavioral health and wellness programs within fire departments should be established by Congress. Resources should be available to health care providers highlighting best practices for addressing post-traumatic stress among public safety officers. Accurate data on the prevalence and causes of post-traumatic stress and suicide with the fire service must be collected. According to evidence-based research, behavioral health awareness campaigns provide effective intervention methods. It is our collective responsibility to provide those who serve with the tools they need to help themselves and each other.

The FBI launched the Law Enforcement Suicide Data Collection on January 1, 2022.² to help improve understanding and prevent suicide among law enforcement officers. We applaud this effort, and a similar data collection model is needed at the U.S. Fire Administration.

It is our position, that we need to provide behavioral health resources and suicide prevention initiatives for all firefighters. Like other injuries, early detection, access to culturally competent behavioral health specialists and proper screening can help reduce the effects of post-traumatic stress. Many insurance providers cap the costs related to behavioral health assistance and treatment centers for behavioral health programs are often out of the reach of the average firefighter.



More Information



¹ <https://www.iaffrecoverycenter.com/blog/trauma-firefighting-and-ptsd/>

² <https://www.fbi.gov/services/cjis/ucr/law-enforcement-suicide-data-collection>

Parity with Law Enforcement in Federal Policy Development



Involve the fire service in federal policy development on an equal basis with law enforcement.

Issue

The fire service must be included in federal policy development on an equal basis with law enforcement when federal agencies develop policies and programs related to public safety, such as first responder behavioral health, building and fire codes, and the five mission areas of the National Preparedness Goal (prevention, protection, mitigation, response and recovery).

Impact Areas

The White House Fiscal Year 2023 budget proposal includes \$1.97 billion in discretionary funding to support state and local law enforcement, an increase of 12% over the previous fiscal year.¹ This represents a significant investment in local law enforcement and is much needed. Despite the significant fire problem our nation faces, the Administration requested \$740 million for grants to local fire departments.² The National Fire Protection Association estimated the total cost of fire in the United States in 2014 was \$328.5 billion, approximately 1.9% of the U.S. Gross Domestic Product.³ Federal investments in fire protection and response are not sufficient to address the scope of the problem.

In addition to supporting local law enforcement, federal law enforcement agencies have a significant presence in the federal government. These agencies include the Air Force Office of Special Investigations, Army Criminal Investigation Division, Defense Criminal Investigative Service, Naval Criminal Investigative Service, Coast Guard Investigative Service (Department of Defense), Customs and Border Protection, Federal Protective Service, Immigration and Customs Enforcement, U.S. Secret Service (Department of Homeland Security), Bureau of Alcohol, Tobacco, Firearms and Explosives, Drug Enforcement Administration, Federal Bureau of Investigation, U.S. Marshal Service (DOJ), U.S. Park Police (Department of Interior), IRS Criminal Investigations Division (Department of Treasury), U.S. Postal Inspection Service (U.S. Postal Service), Probation and Pretrial Services (Judicial Conference of the U.S.), and U.S. Capitol Police (United States Congress).

Nearly every department and agency in the federal government touches upon fire and emergency services. These departments are responsible for engaging with fire service stakeholders — inside and outside of the federal government — when developing policies and

¹[FACT SHEET: President Biden's Budget Invests in Reducing Gun Crime to Make Our Communities Safer](#) (White House; March 28, 2022)

²[Fiscal Year 2023 President's Budget](#)

³[Total Cost of Fire in the United States](#) (NFPA; October 2017)



FEMA



U.S. Fire Administration
Working for a fire-safe America



procedures impacting fire and life safety. Despite the fire service's significant footprint within these departments' mission, there is a lack of coordination and cohesive policy development among these agencies. Consistent, competent and effective leadership at the U.S. Fire Administration level can coordinate these policies and ensure that the fire service stakeholders can effectively operate at the national level.

More Information



The U.S. Fire Administration (USFA) should be elevated within the Federal Emergency Management Agency (FEMA) and transformed into a multi-disciplinary response, preparedness, and mitigation agency. As many response agencies already have, each FEMA region should have a dedicated USFA specialist to assist in the planning and response to disasters. USFA must be fully funded and appropriately staffed in order to execute its mission.

The federal government has numerous agencies and programs impacting the nation's fire and emergency services. Nearly every department in the federal government touches upon fire and emergency services. Here is a snapshot of some of the various programs in the federal government impacting fire and life safety.

Department of Defense

- ▶ Military firefighter health and safety

Department of Justice

- ▶ Bureau of Justice Assistance
- ▶ Public Safety Officers' Benefits Program

Department of the Interior

- ▶ Bureau of Land Management
- ▶ Wildland firefighting

Department of Agriculture

- ▶ U.S. Forest Service
- ▶ Wildland firefighting

Department of Commerce

- ▶ National Telecommunications and Information Administration
- ▶ First Responder Network Authority (FirstNet)

Department of Labor

- ▶ Occupational Safety & Health Administration

Department of Health and Human Services

- ▶ Centers for Disease Control & Prevention/ National Institute for Occupational Safety & Health
- ▶ National Firefighter Registry

Department of Housing and Urban Development

- ▶ Public and Indian Housing
- ▶ Safe and affordable housing for our most vulnerable populations

Department of Transportation

- ▶ National Highway Traffic Safety Administration
- ▶ Office of EMS

Department of Energy

- ▶ Office of Environment, Health, Safety & Security
- ▶ Fire Protection Program

Department of Education

- ▶ Office of Postsecondary Education
- ▶ Campus Safety & Security

Department of Veterans Affairs

- ▶ Safe and affordable housing for veterans and their families

Department of Homeland Security

- ▶ Federal Emergency Management Agency/U.S. Fire Administration
- ▶ National Fire Academy
- ▶ Assistance to Firefighters/Staffing for Adequate Fire & Emergency Response/Fire Prevention & Safety Grants



FEMA



U.S. Fire Administration
Working for a fire-safe America



Impact of Codes and Standards



Create safer communities by implementing and enforcing codes and standards, especially in the wildland urban interface (WUI) and under-served and vulnerable populations providing affordable and fire-safe housing.

Issue

State and local governments are responsible for promoting the use and enforcement of current codes and standards. The federal government can help by incentivizing compliance and providing funding to local jurisdictions for code implementation, inspection, and enforcement. This will increase fire and life safety in our communities, especially in the WUI and among under-served and vulnerable populations.

Impact Areas

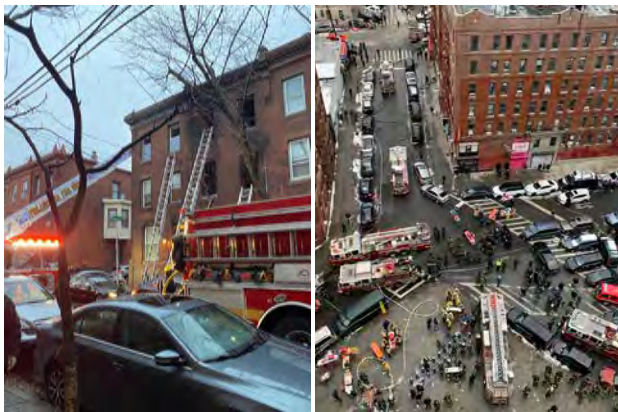
Model building codes improve building resilience to natural disasters and save \$11 for every \$1 invested.¹

All nationally recognized modern building and fire codes require the use of life-saving technology, like smoke alarms, carbon monoxide alarms, and automatic fire sprinkler systems.

Nearly a million households live in public housing units in the United States,² and fire safety improvements in public housing must receive heightened attention. In 1992, Congress passed the Federal Fire Safety Act (15 USC 2227), requiring newly constructed multi-family housing units to have fire sprinklers. HUD estimates that approximately 570,000 multi-family public housing units are in their inventory that were constructed before the sprinkler requirement. A significant portion of these units lack the protection offered by fire sprinklers.

In buildings with automatic fire sprinkler systems, the civilian fire death rate is 89 percent lower than non-sprinklered buildings and the injury rate is 27 percent lower. Furthermore, property damage decreases significantly in buildings protected by fire sprinklers.³ Investments must be made in retrofitting public housing with fire sprinkler systems.

Nearly three out of five home fire deaths are caused by fires in properties without smoke alarms or smoke alarms that failed to operate.⁴ HUD must provide resources to public housing authorities to either retrofit housing units with hardwired smoke alarms or require the installation of tamper-resistant long-life battery-powered smoke alarms.



Philadelphia Fire Department units operating at January 2022 multi-fatality fire in the city's Fairmount neighborhood. Photo credit: PFD Community Action Team

January 9th 2022: Bronx, New York: FDNY units operating at the Twin Parks Fire. Tragically, 17 people died at this fire. However, many more were rescued by the FDNY. Photo credit: Frank Leeb

More Information



¹Natural Hazard Mitigation Saves: 2019 Report (National Institute for Building Sciences; December 1, 2019)

²U.S. Department of Housing & Urban Development, Office of Public and Indian Housing

³US Experience with Fire Sprinklers (NFPA; October 2021)

⁴Smoke Alarms in US Home Fires (NFPA; February 2021)



FEMA



U.S. Fire Administration
Working for a fire-safe America





FEMA



U.S. Fire Administration
Working for a fire-safe America



16825 South Seton Ave.
Emmitsburg, MD 21727

Appendix G: State of Science Program



2022 U.S. Fire Administrator's Summit on Fire Prevention and Control

State of Science

October 11, 2022
National Emergency Training Center
Emmitsburg, Maryland



FEMA



U.S. Fire Administration
Working for a fire-safe America



Welcome Letter

Welcome to the **2022 U.S. Fire Administrator's Summit on Fire Prevention and Control: State of Science**. You are taking part in a historic meeting of federal governmental officials, notable fire service leaders, and expert scientists, gathered with the collective purpose of combating the fire problem in America and keeping firefighters safe and healthy.

The federal government's involvement in fire protection began with President Woodrow Wilson's first fire prevention proclamation in 1922. The fire problem in America was also addressed in 1947 by President Harry S. Truman after several horrific fires and tremendous loss of life.

In 1968, the Fire Research and Safety Act created the National Commission on Fire Prevention and Control, whose mandate was to examine the nation's fire problem and formulate recommendations for improving fire safety. This led to the formative 1973 America Burning document, which set the course for efforts in the latter part of the 20th Century to reduce the effects of fire. We are now nearly one-quarter of the way through the 21st Century, and **America is still burning**.

In fact, the United States continues to have the highest per capita death rate and property loss of all major industrialized nations. This Summit is an opportunity for you to join me in reducing the effects of fire loss as envisioned by President Woodrow Wilson and President Harry S. Truman.

I challenge you to listen to the leading researchers and the fire service leaders who are speaking today — and decide how you can be part of this effort to make a fire-safe America and ensure the health and safety of firefighters. Individually, we have limited impact. Collectively, we can save lives and property and preserve the nation's infrastructure for future generations ... and protect our responders. The task is daunting but not insurmountable.

It is my pleasure to have you join us in our renewed effort to make America fire safe, and I look forward to working with you to make America a model for fire safety that other nations will aspire to emulate.

Sincerely,



Lori Moore-Merrell, DrPH, MPH
U.S. Fire Administrator
U.S. Fire Administration

Agenda

Opening Remarks

Dr. Lori Moore-Merrell, U.S. Fire Administrator

Chief Ron Siarnicki, National Fallen Firefighters Foundation

Impact on Communities

Introduced by Dr. Lori Moore-Merrell

Commissioner Adam K. Thiel, City of Philadelphia Fire Department

Deputy Assistant Chief Frank Leeb, City of New York Fire Department

Dr. Susan M. Moore, National Institute for Occupational Safety and Health

Dr. Steve Kerber, Fire Safety Research Institute

Chief Shane Ray, National Fire Sprinkler Association

Climate Change Impact on the Fire Service

Introduced by Ms. Lorraine Carli, Vice President, Outreach and Advocacy, National Fire Protection Association

Karl Fippinger, International Code Council

Michele Steinberg, National Fire Protection Association

Rick Swan, International Association of Fire Fighters

Impact on Firefighter Recruitment, Retention and Training

Introduced by Ms. Vickie Pritchett, Executive Officer, National Fire Sprinkler Association

Chief John H. Oates, International Public Safety Data Institute

Chief John S. Butler, Fairfax County Fire and Rescue Department (VA)

Chief Brita Horn, Rock Creek Volunteer Fire Department (CO)

Impact on Firefighters' Health

Introduced by Tonya Hoover, Deputy U.S. Fire Administrator

Dr. Kenneth Fent, National Institute for Occupational Safety and Health

Dr. Jeff Burgess, University of Arizona Mel and Enid Zuckerman College of Public Health

Dr. Sara Jahnke, Center for Fire, Rescue & EMS Health Research

Dr. Denise L. Smith, Skidmore College

Patrick Morrison, International Association of Fire Fighters

Closing Remarks

Dr. Lori Moore-Merrell

Additional Information

For more information on the topics discussed at the State of Science, please visit www.firehero.org/USFA-summit or use the QR code below.



Sponsors

The U.S. Fire Administration and the National Fallen Firefighters Foundation would like to thank the following organizations for their support of the State of Science at the 2022 U.S. Fire Administrator's Summit on Fire Prevention and Control.

Premier Sponsor



Leading Sponsor



Supporter



Additional funding from:





FEMA



U.S. Fire Administration
Working for a fire-safe America



16825 South Seton Ave.
Emmitsburg, MD 21727