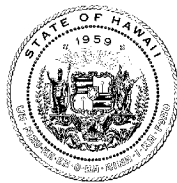


JOSH GREEN, M.D.  
GOVERNOR



ANNE E. LOPEZ  
ATTORNEY GENERAL

MATTHEW S. DVONCH  
FIRST DEPUTY ATTORNEY GENERAL

**STATE OF HAWAII**  
**DEPARTMENT OF THE ATTORNEY GENERAL**  
*Ka 'Oihana O Ka Loio Kuhina*  
425 QUEEN STREET  
HONOLULU, HAWAII 96813  
(808) 586-1500

October 18, 2023

The Honorable Jarrett Keohokalole  
Senate District 24  
Chair, Committee on Commerce and Consumer Protection  
State Capitol, Room 205  
415 South Beretania Street  
Honolulu, Hawai'i 96813

The Honorable Karl Rhoads  
Senate District 13  
Chair, Committee on Judiciary  
State Capitol, Room 228  
415 South Beretania Street  
Honolulu, Hawai'i 96813

The Honorable Donovan M. Dela Cruz  
Senate District 17  
Chair, Committee on Ways and Means  
State Capitol, Room 208  
415 South Beretania Street  
Honolulu, Hawai'i 96813

Re: Investigation of Maui Wildfires

Dear Senators Keohokalole, Rhoads, and Dela Cruz:

Thank you for your letter, dated October 3, 2023, and the opportunity to respond to your questions.

I appreciate your recognition that while I engaged a third-party, science-based entity to investigate the Maui wildfires, I cannot delegate my oversight of the investigation itself. You are probably aware that four Senators asked me to delegate my oversight of the independent investigation to an independent third party. I informed those Senators that I could not because those powers cannot be

delegated. It was reported in the news that this request was made and that I refused to do so. Unfortunately, I was not asked for comment, and some of the Senators who were interviewed stated that they made the request because, among other things, they believed that there was mistrust in government. The story was in the news for several days and, I believe, had the effect of undermining trust in my Department. It is my obligation, and I accept it fully, to foster and develop public trust in this Department by issuing objective, science-based, and transparent investigation reports in three phases. I have promised to do this and will.

In your letter, you asked for information concerning ten enumerated issues regarding the investigation, which I address here.

1. The process utilized to select FSRI as the independent entity to conduct an investigation

After I determined that an investigation was in the public interest, I contacted Deanne Criswell, the Administrator of the Federal Emergency Management Agency (FEMA). Criswell stated that the Fire Safety Research Institute (FSRI), a part of ULRI (an acronym for Underwriters Laboratories Research Institute), is the most experienced and respected entity to perform the investigation.

ULRI's mission is to promote safe, secure, and sustainable living and working environments by the application of science and hazard-based safety engineering. FSRI was created by ULRI to advance fire-safety knowledge to address the world's unresolved fire-safety risks and emerging dangers.

Following my call with Administrator Criswell, I contacted Dr. Lori Moore-Merrell, the United States Fire Administrator. Administrator Moore-Merrell stated that FSRI is the organization that she would choose if she were looking to perform a science-based, data-driven investigation.

Based on the recommendations of the chiefs of FEMA and the U.S. Fire Administration, I contacted Dr. Steve Kerber of FSRI. He and I had several conversations in which I explained what I hoped to achieve with this investigation. I also informed Dr. Kerber that I would insist on science-based answers, transparency, and the ability to complete the investigation in twelve months. I informed Dr. Kerber that I wanted to be able to divide the investigation into phases so that I could provide progress reports to the public. Following these discussions, FSRI provided the contractual scope of work.

A copy of my Department's contract with ULRI is attached to this response letter as Attachment 1.

Below, I have also provided links to the biographies of Criswell, Moore-Merrell, and Kerber. Copies of their biographies are attached to this letter as Attachment 2.

[Deanne Criswell | FEMA.gov](#)

[Dr. Lori Moore-Merrell, U.S. Fire Administrator \(fema.gov\)](#)

[Steve Kerber | UL's FSRI – Fire Safety Research Institute](#)

2. A copy of the contract or agreement with FSRI plus any modifications and memorandum about FSRI's work

The contract is Attachment 1 to this letter.

3. A copy of the investigation plan including the specific FSRI personnel conducting the investigation and their qualifications, and the methodology or approach that FSRI will be using to gather and evaluate the information

The investigation plan is contained in the contract.

The resumes of the FSRI investigators working on this project are attached to this letter as Attachment 3. Personal identifiable information regarding the FSRI investigators has been redacted.

I am also attaching a recent Civil Beat article profiling FSRI as Attachment 4. A link to the article can be found here: <https://www.civilbeat.org/2023/10/state-investigation-into-maui-fire-has-been-quietly-moving-along-now-its-going-public/>.

4. The cost to the State to have FSRI conduct the investigation

As set forth in Attachment 1, the contracted cost is not to exceed \$1.5 million.

5. The scope of the investigation and whether it will address non-governmental actors such as utility companies

The purpose of this investigation is to assess the policies and performance of state and county agencies in preparing for and responding to the Maui wildfires. The comprehensive analysis and review will (1) identify factors that characterized the incident's course towards its tragic outcome; (2) share lessons learned and

reinforced; and (3) develop strategies and recommendations for a resilient and equitable future across Maui County and the State of Hawai‘i.

The investigation’s full scope is set forth in the Department’s contract with FSRI (Attachment 1) and will be conducted in three phases that will generate three reports: an incident timeline report, an incident analysis report, and a forward-looking report.

FSRI is gathering data from utility companies as a part of its investigation, but the investigation is not focusing on the utility companies, per se. Our understanding is that other investigations are focusing on the utilities, and we are not looking to duplicate work. My Department’s investigation is focused squarely on governmental response as to what happened and how we can prevent this type of disaster from happening again.

6. The role of the Attorney General and the Department of the Attorney General in the investigation including oversight of FSRI

The role of the Department of the Attorney General is to ensure that FSRI receives all the cooperation, data, documents, and access to state and county officials and employees that it requires to fulfill the purpose of the investigation.

All the Phase 1 documents, information, audio, and data, etc., collected will be made publicly available. My Department will review all material collected to determine whether and to what extent any material should be redacted. Material may be redacted if it contains:

- Personal identifiable information such as social security numbers or home addresses and telephone numbers that are protected from disclosure under the Uniform Information Practices Act, Chapter 92F, Hawaii Revised Statutes;
- Personal information shared by community members who wish to have some information not made public (state and county employees providing information in their official capacities do not have the option to keep matters from being made public);
- Information that may be part of a separate ongoing criminal, civil, or administrative investigation, the disclosure of which could interfere with



said investigation.<sup>1</sup> Information will be unredacted after the investigation or proceeding arising from the investigation is complete, as applicable; or

- Information, such as photographs, that contains graphic material where such disclosure is gratuitous.

If information is redacted, the reason(s) for any redaction will be provided.

7. Identification of expertise or specialized knowledge, if any, the Department has to evaluate the information and reports provided by FSRI

Neither this Department nor any State/county governmental agency in the State of Hawai'i has the expertise to perform this investigation. This Department will review the reports to determine whether FSRI completed the scope of work as set forth in the contract.

I chose FSRI because it and ULRI are known throughout the world for their professional science-based work. *See Response to Inquiries ## 1, 3.* There will not be a need to “evaluate” the information—FSRI’s work will speak for itself.

8. Particulars about the review and release of FSRI’s work product, including the final report, such as
  - a. Which work product other than the final report will be made public, for example the comprehensive timeline to be developed during Phase 1

All reports and the documents, data, etc., will be made public except as redacted by this Department as described above in response to Inquiry #6. The comprehensive timeline will be a part of the Phase 1 report.

- b. Which persons will be provided the final report prior to it being made public

No person outside of my Department will be provided with the report from any phase of the investigation before I make it public.

---

<sup>1</sup> Note that no person or entity has been provided with any form of immunity for participating in this investigation.

- c. Whether the Attorney General, the Governor, and others will have the ability to edit, redact, or request changes to the final report before it is publicly released

I, and I alone, will determine what information will be redacted. No other person will have the ability to edit, redact, or request changes to the report from any phase of the investigation. I will review the report to make sure it complies with the scope of work and to determine whether any material must be redacted, as set forth in my response to Inquiry #6 above. If I have concerns, I will discuss those concerns with FSRI. FSRI is not and will not be required to make any changes it believes will change the quality or accuracy of its work product. Dr. Kerber, the lead FSRI Investigator, is willing to answer your questions if you need to confirm this statement.

- d. The process for releasing the final report

When the final report for each phase of the investigation is complete, I will release it publicly in a news release.

9. How the Department of the Attorney General intends to investigate or become informed about the cause or causes of the wildfires

The cause of the wildfires is not part of scope of this investigation. The Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) is investigating the cause of the wildfires. That type of investigation falls within the expertise of the ATF, and ATF has offered its expertise in the aftermath of this wildfire.

I note that an investigation declaring an official cause of the fire would expand the scope of the contract dramatically and would have been extremely expensive. It also would duplicate the work of ATF, which was on the scene quickly and was in the best place to conduct that investigation.

The Department's investigation is primarily concerned not with the cause of ignition, but rather how state and county agencies responded to the ignition and the subsequent wildfire, which only my investigation is primarily focused on.

10. The involvement of the Department in the investigations being conducted by other entities and whether there will be any coordination in these investigations

FSRI has requested ATF's and Maui County Fire Department's investigative reports, but the Department is not otherwise involved in the conducting of any other

independent investigation.

\* \* \*

Outside of the ten enumerated questions, you asked about hypothetical future prosecutions and litigation. Specifically, you ask: “We would like to know what role you intend to take concerning any litigation, whether you anticipate any conflicts of interest and how you plan to address them, and whether you intend to use outside counsel.”

While it is impossible to speculate about future events with any precision, the State has been named a defendant in nineteen (19) cases arising out of the wildfires. Defending this litigation is no different than any other tort suit filed against the State. But due to the extreme volume of cases, I have engaged outside litigation counsel: Hueston Hennigan and Case Lombardi. Hueston Hennigan has extensive experience in litigation arising out of the 2017 Thomas Fire and 2018 Montecito mudslides (that resulted from the wildfires), among other experience. I have engaged Case Lombardi & Pettit as local counsel.

For your convenience, links to Hueston Hennigan and Case Lombardi are below.

[Hueston Hennigan | Disruptive Trial Lawyers](#)  
[Case Lombardi, A Law Corporation | Honolulu Civil Practice](#)

I do not anticipate any conflicts of interest. If you have specific concerns, please let me know and I can address those.

Finally, you have asked for an update on matters concerning Deputy Director Kaleo Manuel, specifically “the current status of Manuel’s employment and work assignment and your and the Department’s role, if any, in his redeployment and the subsequent handling of the situation.”

Since your letter, DLNR announced that Deputy Director Manuel has returned to his position. See <https://governor.hawaii.gov/newsroom/dlnr-news-release-kaleo-manuel-returns-to-commission-on-water-resource-management-oct-9-2023/>.

I have attached correspondence between myself and Board of Land and Natural Resources Chairperson Dawn Chang regarding the redeployment as Attachment 5. I cannot otherwise discuss personnel matters.

The Honorable Keohokalole, Rhoads, and Dela Cruz

October 18, 2023

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If you have any other questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Anne E. Lopez". The signature is fluid and cursive, with a long horizontal stroke at the end.

Anne E. Lopez  
Attorney General of Hawai'i

# Attachment 1

Department of the Attorney General  
SUMMARY OF CONTRACT INFORMATION

<b>Name of Consultant/Contract Awardee</b> (If legal services, attorney's last, first, middle initial & firm name)		Underwriters Laboratories Inc., Fire Safety Research Institute	
<b>Type of service provided:</b> (e.g., personal services, consultant, other contracted services, special deputy, expert witness)		Consultant	
<b>Scope of service:</b>		Comprehensive analysis and review of August 2023 Lahaina fire incident to 1) identify factors that characterized the incident's course toward its tragic outcome; 2) share lessons learned and reinforced; and 3) develop strategies and recommendations for a resilient and equitable future across Maui County and the State of Hawaii.  Contractor is to produce a report in three phases at 3, 6, and 12-month increments, as well as bi-weekly progress reports.	
<b>Names of top 5 submitted for consideration</b> (If legal services, attorney's last, first, middle initial & firm name) If fewer than 5 submitted, identify all names submitted, e.g., top 3 or 4. Note: Minimum of 3 must be submitted.		1. Underwriters Laboratories Inc., Fire Safety Research Institute	
		*Contract was procured as an exemption to HRS 103D	
		pursuant to the Governor's Sixth Emergency Proclamation	
		Relating to Wildfires dated August 19, 2023.	
<b>City &amp; State of Consultant/Contract Awardee</b>		<b>City:</b> Honolulu	<b>State:</b> HI
<b>Effective date of contract</b>		August 24, 2023	<b>Termination date of contract</b> August 23, 2024 (Does not reflect options to extend)
<b>Signature date of A.G.</b> (OAG to fill in)		October 5, 2023	
<b>Compensation cap of contract</b>		\$1,500,000.00	<b>Hourly rate (if applicable)</b> See attachment.
<b>Funding agency, if different from AG</b>		N/A	
<b>Names of the members on review committee</b> Use additional lines if needed.	1. N/A	<b>Names of the members on selection committee</b> Use additional lines if needed.	1. N/A
	2.		2.
	3.		3.
	4.		4.
<b>Relationship between principals &amp; selection committee members</b>		None.	
<b>Division</b>		Office of Attorney General	
<b>Division Contact</b>		Brenden Kinoshita	<b>Division Contact's Phone No.</b> [REDACTED]
<b>For contract amendments:</b>		Complete applicable info in the top portion and this section.	
<b>Contract Date</b>		<b>Amendment No.</b>	
<b>Reason for Amendment</b>			

c: ASO

### HOURLY RATE BREAKDOWN

Classification	Hourly Rate of Pay
Principal	\$350.00
Associate	\$275.00
Analyst	\$100.00
Administrative Specialist	\$75.00
Administrative Assistant	\$45.00



**STATE OF HAWAII**  
**CONTRACT FOR GOODS AND SERVICES**  
(IN THE FOLLOWING CATEGORIES: EXEMPT; SMALL PURCHASE;  
SOLE SOURCE; OR EMERGENCY)

This Contract, executed on the respective dates indicated below, is effective as of  
August 24, 2023, between the Department of the Attorney General  
(insert name of state department, agency, board or commission)  
State of Hawaii ("STATE"), by its Attorney General  
(insert title of person signing for State)  
(hereafter also referred to as the HEAD OF THE PURCHASING AGENCY or designee ("HOPA")),  
whose address is 425 Queen Street, 3rd Floor, Honolulu, HI 96813  
and Underwriters Laboratories Inc.  
("CONTRACTOR"), a Delaware charitable non-stock company  
(insert corporation, partnership, joint venture, sole proprietorship, or other legal form of the Contractor)  
under the laws of the State of \_\_\_\_\_, whose business address and federal  
and state taxpayer identification numbers are as follows: 333 Pfingsten Road  
Northbrook, IL 60062

**RECITALS**

A. The STATE is in need of the goods and services, or both, described in this Contract and its attachments. The CONTRACTOR is agreeable to providing the goods and services, or both, as the case may be.

B. This Contract is for (check one box):

☒ (1) A procurement expenditure of public funds for goods or services, or both, that is otherwise exempt from public bidding as set forth in section 103D-102, Hawaii Revised Statutes ("HRS"), and chapter 3-120, Hawaii Administrative Rules ("HAR"); or  
Sixth Emergency Proclamation Relating to Wildfires dated August 19, 2023; or

☐ (2) A small purchase procurement of goods or services, or both, as set forth in section 103D-305, HRS, and subchapter 8, chapter 3-122, HAR; or

☐ (3) A sole source procurement of goods or services, or both, as set forth in section 103D-306, HRS, and subchapter 9, chapter 3-122, HAR; or

☐ (4) An emergency procurement of goods or services, or both, as set forth in section 103D-307, HRS, and subchapter 10, chapter 3-122, HAR.

C. Money is available to fund this Contract pursuant to:

(1) Act 164, SLH 2023

(Identify state source)

or (2) \_\_\_\_\_

(Identify federal source)

or both, in the following amounts: State \$ 1,500,000.00

Federal \$ \_\_\_\_\_

D. Pursuant to Chapter 127A, HRS, the STATE

(Legal authority to enter into this Contract)

is authorized to enter into this Contract.

E. The agency's Chief Procurement Officer is Bonnie Kahakui  
who ☐ has approved this procurement or ☒ is not required to approve this procurement.

NOW, THEREFORE, in consideration of the promises contained in this Contract, the STATE and the CONTRACTOR agree as follows:

1. Scope of Services. The CONTRACTOR shall, in a proper and satisfactory manner as determined by the STATE, provide all the goods or services, or both, set forth in Attachment I, which is made a part of this Contract.



2. Compensation. The CONTRACTOR shall be compensated for goods supplied or services performed, or both, under this Contract in a total amount not to exceed ONE MILLION FIVE HUNDRED THOUSAND DOLLARS (\$ 1,500,000.00 ), including approved costs incurred and taxes, according to the Compensation and Payment Schedule set forth in Attachment2, which is made a part of this Contract.

3. Time of Performance. The services or goods required of the CONTRACTOR under this Contract shall be performed and completed in accordance with the Time of Performance set forth in Attachment3, which is made a part of this Contract.

4. Bonds. The CONTRACTOR ☐ is required to provide or ☒ is not required to provide: ☐ a performance bond, ☐ a payment bond, ☐ a performance and payment bond in the amount of \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_).

5. Standards of Conduct Declaration. The Standards of Conduct Declaration of the CONTRACTOR is attached to and made a part of this Contract.

6. Other Terms and Conditions. The General Conditions and any Special Conditions are attached to and made a part of this Contract. In the event of a conflict between the General Conditions and the Special Conditions, the Special Conditions shall control.

7. Liquidated Damages. Liquidated damages shall be assessed in the amount of N/A DOLLARS (\$ 0.00 ) per day, in accordance with the terms of paragraph 9 of the General Conditions.

8. Notices. Any written notice required to be given by any party to this Contract shall be (a) delivered personally, or (b) sent by United States first class mail, postage prepaid. Notice to the STATE shall be sent to the HOPA'S address indicated in the Contract. Notice to the CONTRACTOR shall be sent to the CONTRACTOR'S address indicated in the Contract. A notice shall be deemed to have been received three (3) days after mailing or at the time of actual receipt, whichever is earlier. The CONTRACTOR is responsible for notifying the STATE in writing of any change of address.

IN VIEW OF THE ABOVE, the parties execute this Contract by their signatures, on the dates below, to be effective as of the date first above written.

STATE

  
(Signature)

ANNE E. LOPEZ

(Print Name)

ATTORNEY GENERAL

(Print Title)

10/5/23  
(Date)

CORPORATE SEAL  
(If available)

CONTRACTOR

Underwriters Laboratories Inc.

(Name of Contractor)

  
(Signature)

Steve Kerber

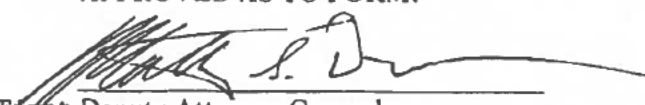
(Print Name)

VP & Exec. Director, Fire Safety Research Inst.\*

(Print Title)

10/4/2023  
(Date)

APPROVED AS TO FORM:

  
First Deputy Attorney General

\*Evidence of authority of the CONTRACTOR'S representative to sign this Contract for the CONTRACTOR must be attached.

## GENERAL CONDITIONS

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## GENERAL CONDITIONS

1. Coordination of Services by the STATE. The head of the purchasing agency ("HOPA") (which term includes the designee of the HOPA) shall coordinate the services to be provided by the CONTRACTOR in order to complete the performance required in the Contract. The CONTRACTOR shall maintain communications with HOPA at all stages of the CONTRACTOR'S work, and submit to HOPA for resolution any questions which may arise as to the performance of this Contract. "Purchasing agency" as used in these General Conditions means and includes any governmental body which is authorized under chapter 103D, HRS, or its implementing rules and procedures, or by way of delegation, to enter into contracts for the procurement of goods or services or both.
2. Relationship of Parties: Independent Contractor Status and Responsibilities, Including Tax Responsibilities.
  - a. In the performance of services required under this Contract, the CONTRACTOR is an "independent contractor," with the authority and responsibility to control and direct the performance and details of the work and services required under this Contract; however, the STATE shall have a general right to inspect work in progress to determine whether, in the STATE'S opinion, the services are being performed by the CONTRACTOR in compliance with this Contract. Unless otherwise provided by special condition, it is understood that the STATE does not agree to use the CONTRACTOR exclusively, and that the CONTRACTOR is free to contract to provide services to other individuals or entities while under contract with the STATE.
  - b. The CONTRACTOR and the CONTRACTOR'S employees and agents are not by reason of this Contract, agents or employees of the State for any purpose, and the CONTRACTOR and the CONTRACTOR'S employees and agents shall not be entitled to claim or receive from the State any vacation, sick leave, retirement, workers' compensation, unemployment insurance, or other benefits provided to state employees.
  - c. The CONTRACTOR shall be responsible for the accuracy, completeness, and adequacy of the CONTRACTOR'S performance under this Contract. Furthermore, the CONTRACTOR intentionally, voluntarily, and knowingly assumes the sole and entire liability to the CONTRACTOR'S employees and agents, and to any individual not a party to this Contract, for all loss, damage, or injury caused by the CONTRACTOR, or the CONTRACTOR'S employees or agents in the course of their employment.
  - d. The CONTRACTOR shall be responsible for payment of all applicable federal, state, and county taxes and fees which may become due and owing by the CONTRACTOR by reason of this Contract, including but not limited to (i) income taxes, (ii) employment related fees, assessments, and taxes, and (iii) general excise taxes. The CONTRACTOR also is responsible for obtaining all licenses, permits, and certificates that may be required in order to perform this Contract.
  - e. The CONTRACTOR shall obtain a general excise tax license from the Department of Taxation, State of Hawaii, in accordance with section 237-9, HRS, and shall comply with all requirements thereof. The CONTRACTOR shall obtain a tax clearance certificate from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of the Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid and submit the same to the STATE prior to commencing any performance under this Contract. The CONTRACTOR shall also be solely responsible for meeting all requirements necessary to obtain the tax clearance certificate required for final payment under sections 103-53 and 103D-328, HRS, and paragraph 17 of these General Conditions.
  - f. The CONTRACTOR is responsible for securing all employee-related insurance coverage for the CONTRACTOR and the CONTRACTOR'S employees and agents that is or may be required by law, and for payment of all premiums, costs, and other liabilities associated with securing the insurance coverage.

- g. The CONTRACTOR shall obtain a certificate of compliance issued by the Department of Labor and Industrial Relations, State of Hawaii, in accordance with section 103D-310, HRS, and section 3-122-112, HAR, that is current within six months of the date of issuance.
- h. The CONTRACTOR shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs, State of Hawaii, in accordance with section 103D-310, HRS, and section 3-122-112, HAR, that is current within six months of the date of issuance.
- i. In lieu of the above certificates from the Department of Taxation, Labor and Industrial Relations, and Commerce and Consumer Affairs, the CONTRACTOR may submit proof of compliance through the State Procurement Office's designated certification process.

3. Personnel Requirements.

- a. The CONTRACTOR shall secure, at the CONTRACTOR'S own expense, all personnel required to perform this Contract.
- b. The CONTRACTOR shall ensure that the CONTRACTOR'S employees or agents are experienced and fully qualified to engage in the activities and perform the services required under this Contract, and that all applicable licensing and operating requirements imposed or required under federal, state, or county law, and all applicable accreditation and other standards of quality generally accepted in the field of the activities of such employees and agents are complied with and satisfied.

4. Nondiscrimination. No person performing work under this Contract, including any subcontractor, employee, or agent of the CONTRACTOR, shall engage in any discrimination that is prohibited by any applicable federal, state, or county law.

5. Conflicts of Interest. The CONTRACTOR represents that neither the CONTRACTOR, nor any employee or agent of the CONTRACTOR, presently has any interest, and promises that no such interest, direct or indirect, shall be acquired, that would or might conflict in any manner or degree with the CONTRACTOR'S performance under this Contract.

6. Subcontracts and Assignments. The CONTRACTOR shall not assign or subcontract any of the CONTRACTOR'S duties, obligations, or interests under this Contract and no such assignment or subcontract shall be effective unless (i) the CONTRACTOR obtains the prior written consent of the STATE, and (ii) the CONTRACTOR'S assignee or subcontractor submits to the STATE a tax clearance certificate from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR'S assignee or subcontractor have been paid. Additionally, no assignment by the CONTRACTOR of the CONTRACTOR'S right to compensation under this Contract shall be effective unless and until the assignment is approved by the Comptroller of the State of Hawaii, as provided in section 40-58, HRS.

- a. Recognition of a successor in interest. When in the best interest of the State, a successor in interest may be recognized in an assignment contract in which the STATE, the CONTRACTOR and the assignee or transferee (hereinafter referred to as the "Assignee") agree that:

- (1) The Assignee assumes all of the CONTRACTOR'S obligations;
- (2) The CONTRACTOR remains liable for all obligations under this Contract but waives all rights under this Contract as against the STATE; and
- (3) The CONTRACTOR shall continue to furnish, and the Assignee shall also furnish, all required bonds.

- b. Change of name. When the CONTRACTOR asks to change the name in which it holds this Contract with the STATE, the procurement officer of the purchasing agency (hereinafter referred to as the "Agency procurement officer") shall, upon receipt of a document acceptable or satisfactory to the

Agency procurement officer indicating such change of name (for example, an amendment to the CONTRACTOR'S articles of incorporation), enter into an amendment to this Contract with the CONTRACTOR to effect such a change of name. The amendment to this Contract changing the CONTRACTOR'S name shall specifically indicate that no other terms and conditions of this Contract are thereby changed.

- c. Reports. All assignment contracts and amendments to this Contract effecting changes of the CONTRACTOR'S name or novations hereunder shall be reported to the chief procurement officer (CPO) as defined in section 103D-203(a), HRS, within thirty days of the date that the assignment contract or amendment becomes effective.
  - d. Actions affecting more than one purchasing agency. Notwithstanding the provisions of subparagraphs 6a through 6c herein, when the CONTRACTOR holds contracts with more than one purchasing agency of the State, the assignment contracts and the novation and change of name amendments herein authorized shall be processed only through the CPO's office.
7. Indemnification and Defense. The CONTRACTOR shall defend, indemnify, and hold harmless the State of Hawaii, the contracting agency, and their officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including all attorneys' fees, and all claims, suits, and demands therefore, arising out of or resulting from the acts or omissions of the CONTRACTOR or the CONTRACTOR'S employees, officers, agents, or subcontractors under this Contract. The provisions of this paragraph shall remain in full force and effect notwithstanding the expiration or early termination of this Contract.
  8. Cost of Litigation. In case the STATE shall, without any fault on its part, be made a party to any litigation commenced by or against the CONTRACTOR in connection with this Contract, the CONTRACTOR shall pay all costs and expenses incurred by or imposed on the STATE, including attorneys' fees.
  9. Liquidated Damages. When the CONTRACTOR is given notice of delay or nonperformance as specified in paragraph 13 (Termination for Default) and fails to cure in the time specified, it is agreed the CONTRACTOR shall pay to the STATE the amount, if any, set forth in this Contract per calendar day from the date set for cure until either (i) the STATE reasonably obtains similar goods or services, or both, if the CONTRACTOR is terminated for default, or (ii) until the CONTRACTOR provides the goods or services, or both, if the CONTRACTOR is not terminated for default. To the extent that the CONTRACTOR'S delay or nonperformance is excused under paragraph 13d (Excuse for Nonperformance or Delay Performance), liquidated damages shall not be assessable against the CONTRACTOR. The CONTRACTOR remains liable for damages caused other than by delay.
  10. STATE'S Right of Offset. The STATE may offset against any monies or other obligations the STATE owes to the CONTRACTOR under this Contract, any amounts owed to the State of Hawaii by the CONTRACTOR under this Contract or any other contracts, or pursuant to any law or other obligation owed to the State of Hawaii by the CONTRACTOR, including, without limitation, the payment of any taxes or levies of any kind or nature. The STATE will notify the CONTRACTOR in writing of any offset and the nature of such offset. For purposes of this paragraph, amounts owed to the State of Hawaii shall not include debts or obligations which have been liquidated, agreed to by the CONTRACTOR, and are covered by an installment payment or other settlement plan approved by the State of Hawaii, provided, however, that the CONTRACTOR shall be entitled to such exclusion only to the extent that the CONTRACTOR is current with, and not delinquent on, any payments or obligations owed to the State of Hawaii under such payment or other settlement plan.
  11. Disputes. Disputes shall be resolved in accordance with section 103D-703, HRS, and chapter 3-126, Hawaii Administrative Rules ("HAR"), as the same may be amended from time to time.
  12. Suspension of Contract. The STATE reserves the right at any time and for any reason to suspend this Contract for any reasonable period, upon written notice to the CONTRACTOR in accordance with the provisions herein.
    - a. Order to stop performance. The Agency procurement officer may, by written order to the CONTRACTOR, at any time, and without notice to any surety, require the CONTRACTOR to stop all or any part of the performance called for by this Contract. This order shall be for a specified

period not exceeding sixty (60) days after the order is delivered to the CONTRACTOR, unless the parties agree to any further period. Any such order shall be identified specifically as a stop performance order issued pursuant to this section. Stop performance orders shall include, as appropriate: (1) A clear description of the work to be suspended; (2) Instructions as to the issuance of further orders by the CONTRACTOR for material or services; (3) Guidance as to action to be taken on subcontracts; and (4) Other instructions and suggestions to the CONTRACTOR for minimizing costs. Upon receipt of such an order, the CONTRACTOR shall forthwith comply with its terms and suspend all performance under this Contract at the time stated, provided, however, the CONTRACTOR shall take all reasonable steps to minimize the occurrence of costs allocable to the performance covered by the order during the period of performance stoppage. Before the stop performance order expires, or within any further period to which the parties shall have agreed, the Agency procurement officer shall either:

- (1) Cancel the stop performance order; or
- (2) Terminate the performance covered by such order as provided in the termination for default provision or the termination for convenience provision of this Contract.

b. Cancellation or expiration of the order. If a stop performance order issued under this section is cancelled at any time during the period specified in the order, or if the period of the order or any extension thereof expires, the CONTRACTOR shall have the right to resume performance. An appropriate adjustment shall be made in the delivery schedule or contract price, or both, and the Contract shall be modified in writing accordingly, if:

- (1) The stop performance order results in an increase in the time required for, or in the CONTRACTOR'S cost properly allocable to, the performance of any part of this Contract; and
- (2) The CONTRACTOR asserts a claim for such an adjustment within thirty (30) days after the end of the period of performance stoppage; provided that, if the Agency procurement officer decides that the facts justify such action, any such claim asserted may be received and acted upon at any time prior to final payment under this Contract.

c. Termination of stopped performance. If a stop performance order is not cancelled and the performance covered by such order is terminated for default or convenience, the reasonable costs resulting from the stop performance order shall be allowable by adjustment or otherwise.

d. Adjustment of price. Any adjustment in contract price made pursuant to this paragraph shall be determined in accordance with the price adjustment provision of this Contract.

### 13. Termination for Default.

a. Default. If the CONTRACTOR refuses or fails to perform any of the provisions of this Contract with such diligence as will ensure its completion within the time specified in this Contract, or any extension thereof, otherwise fails to timely satisfy the Contract provisions, or commits any other substantial breach of this Contract, the Agency procurement officer may notify the CONTRACTOR in writing of the delay or non-performance and if not cured in ten (10) days or any longer time specified in writing by the Agency procurement officer, such officer may terminate the CONTRACTOR'S right to proceed with the Contract or such part of the Contract as to which there has been delay or a failure to properly perform. In the event of termination in whole or in part, the Agency procurement officer may procure similar goods or services in a manner and upon the terms deemed appropriate by the Agency procurement officer. The CONTRACTOR shall continue performance of the Contract to the extent it is not terminated and shall be liable for excess costs incurred in procuring similar goods or services.

b. CONTRACTOR'S duties. Notwithstanding termination of the Contract and subject to any directions from the Agency procurement officer, the CONTRACTOR shall take timely, reasonable, and

necessary action to protect and preserve property in the possession of the CONTRACTOR in which the STATE has an interest.

- c. Compensation. Payment for completed goods and services delivered and accepted by the STATE shall be at the price set forth in the Contract. Payment for the protection and preservation of property shall be in an amount agreed upon by the CONTRACTOR and the Agency procurement officer. If the parties fail to agree, the Agency procurement officer shall set an amount subject to the CONTRACTOR'S rights under chapter 3-126, HAR. The STATE may withhold from amounts due the CONTRACTOR such sums as the Agency procurement officer deems to be necessary to protect the STATE against loss because of outstanding liens or claims and to reimburse the STATE for the excess costs expected to be incurred by the STATE in procuring similar goods and services.
- d. Excuse for nonperformance or delayed performance. The CONTRACTOR shall not be in default by reason of any failure in performance of this Contract in accordance with its terms, including any failure by the CONTRACTOR to make progress in the prosecution of the performance hereunder which endangers such performance, if the CONTRACTOR has notified the Agency procurement officer within fifteen (15) days after the cause of the delay and the failure arises out of causes such as: acts of God; acts of a public enemy; acts of the State and any other governmental body in its sovereign or contractual capacity; fires; floods; epidemics; quarantine restrictions; strikes or other labor disputes; freight embargoes; or unusually severe weather. If the failure to perform is caused by the failure of a subcontractor to perform or to make progress, and if such failure arises out of causes similar to those set forth above, the CONTRACTOR shall not be deemed to be in default, unless the goods and services to be furnished by the subcontractor were reasonably obtainable from other sources in sufficient time to permit the CONTRACTOR to meet the requirements of the Contract. Upon request of the CONTRACTOR, the Agency procurement officer shall ascertain the facts and extent of such failure, and, if such officer determines that any failure to perform was occasioned by any one or more of the excusable causes, and that, but for the excusable cause, the CONTRACTOR'S progress and performance would have met the terms of the Contract, the delivery schedule shall be revised accordingly, subject to the rights of the STATE under this Contract. As used in this paragraph, the term "subcontractor" means subcontractor at any tier.
- e. Erroneous termination for default. If, after notice of termination of the CONTRACTOR'S right to proceed under this paragraph, it is determined for any reason that the CONTRACTOR was not in default under this paragraph, or that the delay was excusable under the provisions of subparagraph 13d, "Excuse for nonperformance or delayed performance," the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to paragraph 14.
- f. Additional rights and remedies. The rights and remedies provided in this paragraph are in addition to any other rights and remedies provided by law or under this Contract.

14. Termination for Convenience.

- a. Termination. The Agency procurement officer may, when the interests of the STATE so require, terminate this Contract in whole or in part, for the convenience of the STATE. The Agency procurement officer shall give written notice of the termination to the CONTRACTOR specifying the part of the Contract terminated and when termination becomes effective.
- b. CONTRACTOR'S obligations. The CONTRACTOR shall incur no further obligations in connection with the terminated performance and on the date(s) set in the notice of termination the CONTRACTOR will stop performance to the extent specified. The CONTRACTOR shall also terminate outstanding orders and subcontracts as they relate to the terminated performance. The CONTRACTOR shall settle the liabilities and claims arising out of the termination of subcontracts and orders connected with the terminated performance subject to the STATE'S approval. The Agency procurement officer may direct the CONTRACTOR to assign the CONTRACTOR'S right, title, and interest under terminated orders or subcontracts to the STATE. The CONTRACTOR must still complete the performance not terminated by the notice of termination and may incur obligations as necessary to do so.



- c. Right to goods and work product. The Agency procurement officer may require the CONTRACTOR to transfer title and deliver to the STATE in the manner and to the extent directed by the Agency procurement officer:

- (1) Any completed goods or work product; and
- (2) The partially completed goods and materials, parts, tools, dies, jigs, fixtures, plans, drawings, information, and contract rights (hereinafter called "manufacturing material") as the CONTRACTOR has specifically produced or specially acquired for the performance of the terminated part of this Contract.

The CONTRACTOR shall, upon direction of the Agency procurement officer, protect and preserve property in the possession of the CONTRACTOR in which the STATE has an interest. If the Agency procurement officer does not exercise this right, the CONTRACTOR shall use best efforts to sell such goods and manufacturing materials. Use of this paragraph in no way implies that the STATE has breached the Contract by exercise of the termination for convenience provision.

- d. Compensation.

- (1) The CONTRACTOR shall submit a termination claim specifying the amounts due because of the termination for convenience together with the cost or pricing data, submitted to the extent required by chapter 3-122, HAR, bearing on such claim. If the CONTRACTOR fails to file a termination claim within one year from the effective date of termination, the Agency procurement officer may pay the CONTRACTOR, if at all, an amount set in accordance with subparagraph 14d(3) below.
- (2) The Agency procurement officer and the CONTRACTOR may agree to a settlement provided the CONTRACTOR has filed a termination claim supported by cost or pricing data submitted as required and that the settlement does not exceed the total Contract price plus settlement costs reduced by payments previously made by the STATE, the proceeds of any sales of goods and manufacturing materials under subparagraph 14c, and the Contract price of the performance not terminated.
- (3) Absent complete agreement under subparagraph 14d(2) the Agency procurement officer shall pay the CONTRACTOR the following amounts, provided payments agreed to under subparagraph 14d(2) shall not duplicate payments under this subparagraph for the following:
  - (A) Contract prices for goods or services accepted under the Contract;
  - (B) Costs incurred in preparing to perform and performing the terminated portion of the performance plus a fair and reasonable profit on such portion of the performance, such profit shall not include anticipatory profit or consequential damages, less amounts paid or to be paid for accepted goods or services; provided, however, that if it appears that the CONTRACTOR would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss;
  - (C) Costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to subparagraph 14b. These costs must not include costs paid in accordance with subparagraph 14d(3)(B);
  - (D) The reasonable settlement costs of the CONTRACTOR, including accounting, legal, clerical, and other expenses reasonably necessary for the preparation of settlement claims and supporting data with respect to the terminated portion of the Contract and for the termination of subcontracts thereunder, together with reasonable storage, transportation, and other costs incurred in connection with the protection or disposition of property allocable to the terminated portion of this Contract. The total sum to be paid the CONTRACTOR under this subparagraph shall not exceed the



total Contract price plus the reasonable settlement costs of the CONTRACTOR reduced by the amount of payments otherwise made, the proceeds of any sales of supplies and manufacturing materials under subparagraph 14d(2), and the contract price of performance not terminated.

- (4) Costs claimed, agreed to, or established under subparagraphs 14d(2) and 14d(3) shall be in accordance with Chapter 3-123 (Cost Principles) of the Procurement Rules.

15. Claims Based on the Agency Procurement Officer's Actions or Omissions.

- a. Changes in scope. If any action or omission on the part of the Agency procurement officer (which term includes the designee of such officer for purposes of this paragraph 15) requiring performance changes within the scope of the Contract constitutes the basis for a claim by the CONTRACTOR for additional compensation, damages, or an extension of time for completion, the CONTRACTOR shall continue with performance of the Contract in compliance with the directions or orders of such officials, but by so doing, the CONTRACTOR shall not be deemed to have prejudiced any claim for additional compensation, damages, or an extension of time for completion; provided:

- (1) Written notice required. The CONTRACTOR shall give written notice to the Agency procurement officer:

- (A) Prior to the commencement of the performance involved, if at that time the CONTRACTOR knows of the occurrence of such action or omission;
- (B) Within thirty (30) days after the CONTRACTOR knows of the occurrence of such action or omission, if the CONTRACTOR did not have such knowledge prior to the commencement of the performance; or
- (C) Within such further time as may be allowed by the Agency procurement officer in writing.

- (2) Notice content. This notice shall state that the CONTRACTOR regards the act or omission as a reason which may entitle the CONTRACTOR to additional compensation, damages, or an extension of time. The Agency procurement officer, upon receipt of such notice, may rescind such action, remedy such omission, or take such other steps as may be deemed advisable in the discretion of the Agency procurement officer;

- (3) Basis must be explained. The notice required by subparagraph 15a(1) describes as clearly as practicable at the time the reasons why the CONTRACTOR believes that additional compensation, damages, or an extension of time may be remedies to which the CONTRACTOR is entitled; and

- (4) Claim must be justified. The CONTRACTOR must maintain and, upon request, make available to the Agency procurement officer within a reasonable time, detailed records to the extent practicable, and other documentation and evidence satisfactory to the STATE, justifying the claimed additional costs or an extension of time in connection with such changes.

- b. CONTRACTOR not excused. Nothing herein contained, however, shall excuse the CONTRACTOR from compliance with any rules or laws precluding any state officers and CONTRACTOR from acting in collusion or bad faith in issuing or performing change orders which are clearly not within the scope of the Contract.

- c. Price adjustment. Any adjustment in the price made pursuant to this paragraph shall be determined in accordance with the price adjustment provision of this Contract.

16. Costs and Expenses. Any reimbursement due the CONTRACTOR for per diem and transportation expenses under this Contract shall be subject to chapter 3-123 (Cost Principles), HAR, and the following guidelines:

- a. Reimbursement for air transportation shall be for actual cost or coach class air fare, whichever is less.
- b. Reimbursement for ground transportation costs shall not exceed the actual cost of renting an intermediate-sized vehicle.
- c. Unless prior written approval of the HOPA is obtained, reimbursement for subsistence allowance (i.e., hotel and meals, etc.) shall not exceed the applicable daily authorized rates for inter-island or out-of-state travel that are set forth in the current Governor's Executive Order authorizing adjustments in salaries and benefits for state officers and employees in the executive branch who are excluded from collective bargaining coverage.

17. Payment Procedures; Final Payment; Tax Clearance.

- a. Original invoices required. All payments under this Contract shall be made only upon submission by the CONTRACTOR of original invoices specifying the amount due and certifying that services requested under the Contract have been performed by the CONTRACTOR according to the Contract.
- b. Subject to available funds. Such payments are subject to availability of funds and allotment by the Director of Finance in accordance with chapter 37, HRS. Further, all payments shall be made in accordance with and subject to chapter 40, HRS.
- c. Prompt payment.
  - (1) Any money, other than retainage, paid to the CONTRACTOR shall be disbursed to subcontractors within ten (10) days after receipt of the money in accordance with the terms of the subcontract; provided that the subcontractor has met all the terms and conditions of the subcontract and there are no bona fide disputes; and
  - (2) Upon final payment to the CONTRACTOR, full payment to the subcontractor, including retainage, shall be made within ten (10) days after receipt of the money; provided that there are no bona fide disputes over the subcontractor's performance under the subcontract.
- d. Final payment. Final payment under this Contract shall be subject to sections 103-53 and 103D-328, HRS, which require a tax clearance from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid. Further, in accordance with section 3-122-112, HAR, CONTRACTOR shall provide a certificate affirming that the CONTRACTOR has remained in compliance with all applicable laws as required by this section.

18. Federal Funds. If this Contract is payable in whole or in part from federal funds, CONTRACTOR agrees that, as to the portion of the compensation under this Contract to be payable from federal funds, the CONTRACTOR shall be paid only from such funds received from the federal government, and shall not be paid from any other funds. Failure of the STATE to receive anticipated federal funds shall not be considered a breach by the STATE or an excuse for nonperformance by the CONTRACTOR.

19. Modifications of Contract.

- a. In writing. Any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract permitted by this Contract shall be made by written amendment to this Contract, signed by the CONTRACTOR and the STATE, provided that change orders shall be made in accordance with paragraph 20 herein.
- b. No oral modification. No oral modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract shall be permitted.

- c. Agency procurement officer. By written order, at any time, and without notice to any surety, the Agency procurement officer may unilaterally order of the CONTRACTOR:
    - (A) Changes in the work within the scope of the Contract; and
    - (B) Changes in the time of performance of the Contract that do not alter the scope of the Contract work.
  - d. Adjustments of price or time for performance. If any modification increases or decreases the CONTRACTOR'S cost of, or the time required for, performance of any part of the work under this Contract, an adjustment shall be made and this Contract modified in writing accordingly. Any adjustment in contract price made pursuant to this clause shall be determined, where applicable, in accordance with the price adjustment clause of this Contract or as negotiated.
  - e. Claim barred after final payment. No claim by the CONTRACTOR for an adjustment hereunder shall be allowed if written modification of the Contract is not made prior to final payment under this Contract.
  - f. Claims not barred. In the absence of a written contract modification, nothing in this clause shall be deemed to restrict the CONTRACTOR'S right to pursue a claim under this Contract or for a breach of contract.
  - g. Head of the purchasing agency approval. If this is a professional services contract awarded pursuant to section 103D-303 or 103D-304, HRS, any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract which increases the amount payable to the CONTRACTOR by at least \$25,000.00 and ten per cent (10%) or more of the initial contract price, must receive the prior approval of the head of the purchasing agency.
  - h. Tax clearance. The STATE may, at its discretion, require the CONTRACTOR to submit to the STATE, prior to the STATE'S approval of any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract, a tax clearance from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid.
  - i. Sole source contracts. Amendments to sole source contracts that would change the original scope of the Contract may only be made with the approval of the CPO. Annual renewal of a sole source contract for services should not be submitted as an amendment.
20. Change Order. The Agency procurement officer may, by a written order signed only by the STATE, at any time, and without notice to any surety, and subject to all appropriate adjustments, make changes within the general scope of this Contract in any one or more of the following:
- (1) Drawings, designs, or specifications, if the goods or services to be furnished are to be specially provided to the STATE in accordance therewith;
  - (2) Method of delivery; or
  - (3) Place of delivery.
- a. Adjustments of price or time for performance. If any change order increases or decreases the CONTRACTOR'S cost of, or the time required for, performance of any part of the work under this Contract, whether or not changed by the order, an adjustment shall be made and the Contract modified in writing accordingly. Any adjustment in the Contract price made pursuant to this provision shall be determined in accordance with the price adjustment provision of this Contract. Failure of the parties to agree to an adjustment shall not excuse the CONTRACTOR from proceeding with the Contract as changed, provided that the Agency procurement officer promptly and duly makes the provisional adjustments in payment or time for performance as may be reasonable. By

proceeding with the work, the CONTRACTOR shall not be deemed to have prejudiced any claim for additional compensation, or any extension of time for completion.

- b. Time period for claim. Within ten (10) days after receipt of a written change order under subparagraph 20a, unless the period is extended by the Agency procurement officer in writing, the CONTRACTOR shall respond with a claim for an adjustment. The requirement for a timely written response by CONTRACTOR cannot be waived and shall be a condition precedent to the assertion of a claim.
- c. Claim barred after final payment. No claim by the CONTRACTOR for an adjustment hereunder shall be allowed if a written response is not given prior to final payment under this Contract.
- d. Other claims not barred. In the absence of a change order, nothing in this paragraph 20 shall be deemed to restrict the CONTRACTOR'S right to pursue a claim under the Contract or for breach of contract.

21. Price Adjustment.

- a. Price adjustment. Any adjustment in the contract price pursuant to a provision in this Contract shall be made in one or more of the following ways:
  - (1) By agreement on a fixed price adjustment before commencement of the pertinent performance or as soon thereafter as practicable;
  - (2) By unit prices specified in the Contract or subsequently agreed upon;
  - (3) By the costs attributable to the event or situation covered by the provision, plus appropriate profit or fee, all as specified in the Contract or subsequently agreed upon;
  - (4) In such other manner as the parties may mutually agree; or
  - (5) In the absence of agreement between the parties, by a unilateral determination by the Agency procurement officer of the costs attributable to the event or situation covered by the provision, plus appropriate profit or fee, all as computed by the Agency procurement officer in accordance with generally accepted accounting principles and applicable sections of chapters 3-123 and 3-126, HAR.
- b. Submission of cost or pricing data. The CONTRACTOR shall provide cost or pricing data for any price adjustments subject to the provisions of chapter 3-122, HAR.

22. Variation in Quantity for Definite Quantity Contracts. Upon the agreement of the STATE and the CONTRACTOR, the quantity of goods or services, or both, if a definite quantity is specified in this Contract, may be increased by a maximum of ten per cent (10%); provided the unit prices will remain the same except for any price adjustments otherwise applicable; and the Agency procurement officer makes a written determination that such an increase will either be more economical than awarding another contract or that it would not be practical to award another contract.

23. Changes in Cost-Reimbursement Contract. If this Contract is a cost-reimbursement contract, the following provisions shall apply:

- a. The Agency procurement officer may at any time by written order, and without notice to the sureties, if any, make changes within the general scope of the Contract in any one or more of the following:
  - (1) Description of performance (Attachment 1);
  - (2) Time of performance (i.e., hours of the day, days of the week, etc.);
  - (3) Place of performance of services;

- (4) Drawings, designs, or specifications when the supplies to be furnished are to be specially manufactured for the STATE in accordance with the drawings, designs, or specifications;
  - (5) Method of shipment or packing of supplies; or
  - (6) Place of delivery.
- b. If any change causes an increase or decrease in the estimated cost of, or the time required for performance of, any part of the performance under this Contract, whether or not changed by the order, or otherwise affects any other terms and conditions of this Contract, the Agency procurement officer shall make an equitable adjustment in the (1) estimated cost, delivery or completion schedule, or both; (2) amount of any fixed fee; and (3) other affected terms and shall modify the Contract accordingly.
  - c. The CONTRACTOR must assert the CONTRACTOR'S rights to an adjustment under this provision within thirty (30) days from the day of receipt of the written order. However, if the Agency procurement officer decides that the facts justify it, the Agency procurement officer may receive and act upon a proposal submitted before final payment under the Contract.
  - d. Failure to agree to any adjustment shall be a dispute under paragraph 11 of this Contract. However, nothing in this provision shall excuse the CONTRACTOR from proceeding with the Contract as changed.
  - e. Notwithstanding the terms and conditions of subparagraphs 23a and 23b, the estimated cost of this Contract and, if this Contract is incrementally funded, the funds allotted for the performance of this Contract, shall not be increased or considered to be increased except by specific written modification of the Contract indicating the new contract estimated cost and, if this contract is incrementally funded, the new amount allotted to the contract.

24. Confidentiality of Material.

- a. All material given to or made available to the CONTRACTOR by virtue of this Contract, which is identified as proprietary or confidential information, will be safeguarded by the CONTRACTOR and shall not be disclosed to any individual or organization without the prior written approval of the STATE.
- b. All information, data, or other material provided by the CONTRACTOR to the STATE shall be subject to the Uniform Information Practices Act, chapter 92F, HRS.

25. Publicity. The CONTRACTOR shall not refer to the STATE, or any office, agency, or officer thereof, or any state employee, including the HOPA, the CPO, the Agency procurement officer, or to the services or goods, or both, provided under this Contract, in any of the CONTRACTOR'S brochures, advertisements, or other publicity of the CONTRACTOR. All media contacts with the CONTRACTOR about the subject matter of this Contract shall be referred to the Agency procurement officer.

26. Ownership Rights and Copyright. The STATE shall have complete ownership of all material, both finished and unfinished, which is developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract, and all such material shall be considered "works made for hire." All such material shall be delivered to the STATE upon expiration or termination of this Contract. The STATE, in its sole discretion, shall have the exclusive right to copyright any product, concept, or material developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract.

27. Liens and Warranties. Goods provided under this Contract shall be provided free of all liens and provided together with all applicable warranties, or with the warranties described in the Contract documents, whichever are greater.

28. Audit of Books and Records of the CONTRACTOR. The STATE may, at reasonable times and places, audit the books and records of the CONTRACTOR, prospective contractor, subcontractor, or prospective subcontractor which are related to:
- a. The cost or pricing data, and
  - b. A state contract, including subcontracts, other than a firm fixed-price contract.
29. Cost or Pricing Data. Cost or pricing data must be submitted to the Agency procurement officer and timely certified as accurate for contracts over \$100,000 unless the contract is for a multiple-term or as otherwise specified by the Agency procurement officer. Unless otherwise required by the Agency procurement officer, cost or pricing data submission is not required for contracts awarded pursuant to competitive sealed bid procedures.
- If certified cost or pricing data are subsequently found to have been inaccurate, incomplete, or noncurrent as of the date stated in the certificate, the STATE is entitled to an adjustment of the contract price, including profit or fee, to exclude any significant sum by which the price, including profit or fee, was increased because of the defective data. It is presumed that overstated cost or pricing data increased the contract price in the amount of the defect plus related overhead and profit or fee. Therefore, unless there is a clear indication that the defective data was not used or relied upon, the price will be reduced in such amount.
30. Audit of Cost or Pricing Data. When cost or pricing principles are applicable, the STATE may require an audit of cost or pricing data.
31. Records Retention.
- (1) Upon any termination of this Contract or as otherwise required by applicable law, CONTRACTOR shall, pursuant to chapter 487R, HRS, destroy all copies (paper or electronic form) of personal information received from the STATE.
  - (2) The CONTRACTOR and any subcontractors shall maintain the files, books, and records that relate to the Contract, including any personal information created or received by the CONTRACTOR on behalf of the STATE, and any cost or pricing data, for at least three (3) years after the date of final payment under the Contract. The personal information shall continue to be confidential and shall only be disclosed as permitted or required by law. After the three (3) year, or longer retention period as required by law has ended, the files, books, and records that contain personal information shall be destroyed pursuant to chapter 487R, HRS or returned to the STATE at the request of the STATE.
32. Antitrust Claims. The STATE and the CONTRACTOR recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, the CONTRACTOR hereby assigns to STATE any and all claims for overcharges as to goods and materials purchased in connection with this Contract, except as to overcharges which result from violations commencing after the price is established under this Contract and which are not passed on to the STATE under an escalation clause.
33. Patented Articles. The CONTRACTOR shall defend, indemnify, and hold harmless the STATE, and its officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including all attorneys fees, and all claims, suits, and demands arising out of or resulting from any claims, demands, or actions by the patent holder for infringement or other improper or unauthorized use of any patented article, patented process, or patented appliance in connection with this Contract. The CONTRACTOR shall be solely responsible for correcting or curing to the satisfaction of the STATE any such infringement or improper or unauthorized use, including, without limitation: (a) furnishing at no cost to the STATE a substitute article, process, or appliance acceptable to the STATE, (b) paying royalties or other required payments to the patent holder, (c) obtaining proper authorizations or releases from the patent holder, and (d) furnishing such security to or making such arrangements with the patent holder as may be necessary to correct or cure any such infringement or improper or unauthorized use.

34. Governing Law. The validity of this Contract and any of its terms or provisions, as well as the rights and duties of the parties to this Contract, shall be governed by the laws of the State of Hawaii. Any action at law or in equity to enforce or interpret the provisions of this Contract shall be brought in a state court of competent jurisdiction in Honolulu, Hawaii.
35. Compliance with Laws. The CONTRACTOR shall comply with all federal, state, and county laws, ordinances, codes, rules, and regulations, as the same may be amended from time to time, that in any way affect the CONTRACTOR'S performance of this Contract.
36. Conflict Between General Conditions and Procurement Rules. In the event of a conflict between the General Conditions and the procurement rules, the procurement rules in effect on the date this Contract became effective shall control and are hereby incorporated by reference.
37. Entire Contract. This Contract sets forth all of the agreements, conditions, understandings, promises, warranties, and representations between the STATE and the CONTRACTOR relative to this Contract. This Contract supersedes all prior agreements, conditions, understandings, promises, warranties, and representations, which shall have no further force or effect. There are no agreements, conditions, understandings, promises, warranties, or representations, oral or written, express or implied, between the STATE and the CONTRACTOR other than as set forth or as referred to herein.
38. Severability. In the event that any provision of this Contract is declared invalid or unenforceable by a court, such invalidity or unenforceability shall not affect the validity or enforceability of the remaining terms of this Contract.
39. Waiver. The failure of the STATE to insist upon the strict compliance with any term, provision, or condition of this Contract shall not constitute or be deemed to constitute a waiver or relinquishment of the STATE'S right to enforce the same in accordance with this Contract. The fact that the STATE specifically refers to one provision of the procurement rules or one section of the Hawaii Revised Statutes, and does not include other provisions or statutory sections in this Contract shall not constitute a waiver or relinquishment of the STATE'S rights or the CONTRACTOR'S obligations under the procurement rules or statutes.
40. Pollution Control. If during the performance of this Contract, the CONTRACTOR encounters a "release" or a "threatened release" of a reportable quantity of a "hazardous substance," "pollutant," or "contaminant" as those terms are defined in section 128D-1, HRS, the CONTRACTOR shall immediately notify the STATE and all other appropriate state, county, or federal agencies as required by law. The Contractor shall take all necessary actions, including stopping work, to avoid causing, contributing to, or making worse a release of a hazardous substance, pollutant, or contaminant, and shall promptly obey any orders the Environmental Protection Agency or the state Department of Health issues in response to the release. In the event there is an ensuing cease-work period, and the STATE determines that this Contract requires an adjustment of the time for performance, the Contract shall be modified in writing accordingly.
41. Campaign Contributions. The CONTRACTOR is hereby notified of the applicability of 11-355, HRS, which states that campaign contributions are prohibited from specified state or county government contractors during the terms of their contracts if the contractors are paid with funds appropriated by a legislative body.
42. Confidentiality of Personal Information.
- a. Definitions.
- "Personal information" means an individual's first name or first initial and last name in combination with any one or more of the following data elements, when either name or data elements are not encrypted:
- (1) Social security number;
  - (2) Driver's license number or Hawaii identification card number; or

- (3) Account number, credit or debit card number, access code, or password that would permit access to an individual's financial information.

Personal information does not include publicly available information that is lawfully made available to the general public from federal, state, or local government records.

"Technological safeguards" means the technology and the policy and procedures for use of the technology to protect and control access to personal information.

b. Confidentiality of Material.

- (1) All material given to or made available to the CONTRACTOR by the STATE by virtue of this Contract which is identified as personal information, shall be safeguarded by the CONTRACTOR and shall not be disclosed without the prior written approval of the STATE.
- (2) CONTRACTOR agrees not to retain, use, or disclose personal information for any purpose other than as permitted or required by this Contract.
- (3) CONTRACTOR agrees to implement appropriate "technological safeguards" that are acceptable to the STATE to reduce the risk of unauthorized access to personal information.
- (4) CONTRACTOR shall report to the STATE in a prompt and complete manner any security breaches involving personal information.
- (5) CONTRACTOR agrees to mitigate, to the extent practicable, any harmful effect that is known to CONTRACTOR because of a use or disclosure of personal information by CONTRACTOR in violation of the requirements of this paragraph.
- (6) CONTRACTOR shall complete and retain a log of all disclosures made of personal information received from the STATE, or personal information created or received by CONTRACTOR on behalf of the STATE.

c. Security Awareness Training and Confidentiality Agreements.

- (1) CONTRACTOR certifies that all of its employees who will have access to the personal information have completed training on security awareness topics relating to protecting personal information.
- (2) CONTRACTOR certifies that confidentiality agreements have been signed by all of its employees who will have access to the personal information acknowledging that:
  - (A) The personal information collected, used, or maintained by the CONTRACTOR will be treated as confidential;
  - (B) Access to the personal information will be allowed only as necessary to perform the Contract; and
  - (C) Use of the personal information will be restricted to uses consistent with the services subject to this Contract.

d. Termination for Cause. In addition to any other remedies provided for by this Contract, if the STATE learns of a material breach by CONTRACTOR of this paragraph by CONTRACTOR, the STATE may at its sole discretion:



- (1) Provide an opportunity for the CONTRACTOR to cure the breach or end the violation; or
- (2) Immediately terminate this Contract.

In either instance, the CONTRACTOR and the STATE shall follow chapter 487N, HRS, with respect to notification of a security breach of personal information.

e. Records Retention.

- (1) Upon any termination of this Contract or as otherwise required by applicable law, CONTRACTOR shall, pursuant to chapter 487R, HRS, destroy all copies (paper or electronic form) of personal information received from the STATE.
- (2) The CONTRACTOR and any subcontractors shall maintain the files, books, and records that relate to the Contract, including any personal information created or received by the CONTRACTOR on behalf of the STATE, and any cost or pricing data, for at least three (3) years after the date of final payment under the Contract. The personal information shall continue to be confidential and shall only be disclosed as permitted or required by law. After the three (3) year, or longer retention period as required by law has ended, the files, books, and records that contain personal information shall be destroyed pursuant to chapter 487R, HRS or returned to the STATE at the request of the STATE.



STATE OF HAWAII

CONTRACTOR'S ACKNOWLEDGMENT

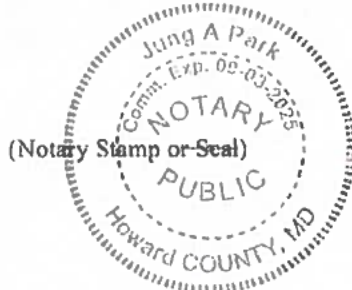
STATE OF MD )  
 ) SS.  
COUNTY OF Howard )

On this 4 day of October, 2023 before me appeared

Steve Kerber and \_\_\_\_\_, to me known, to be the person(s) described in and, who, being by me duly sworn, did say that he/she/they is/are

Vice President \_\_\_\_\_ and Executive Director \_\_\_\_\_ of the Fire Safety Research Institute, Underwriters Laboratories Inc. \_\_\_\_\_, the

CONTRACTOR named in the foregoing instrument, and that he/she/they is/are authorized to sign said instrument on behalf of the CONTRACTOR, and acknowledges that he/she/they executed said instrument as the free act and deed of the CONTRACTOR.



(Signature)

(Print Name)

Notary Public, State of MD

My commission expires: 09/03/25

Doc. Date: 10/4/23 # Pages: 1

Notary Name: \_\_\_\_\_ Circuit \_\_\_\_\_

Doc. Description: \_\_\_\_\_

Notary Signature

Date

NOTARY CERTIFICATION



**STATE OF HAWAII**  
**CONTRACTOR'S**  
**STANDARDS OF CONDUCT DECLARATION**

For the purposes of this declaration:

"Agency" means and includes the State, the legislature and its committees, all executive departments, boards, commissions, committees, bureaus, offices; and all independent commissions and other establishments of the state government but excluding the courts.

"Controlling interest" means an interest in a business or other undertaking which is sufficient in fact to control, whether the interest is greater or less than fifty per cent (50%).

"Employee" means any nominated, appointed, or elected officer or employee of the State, including members of boards, commissions, and committees, and employees under contract to the State or of the constitutional convention, but excluding legislators, delegates to the constitutional convention, justices, and judges. (Section 84-3, HRS).

On behalf of Underwriters Laboratories Inc., CONTRACTOR, the undersigned does declare as follows:

1. CONTRACTOR ☐ is ☒ is not a legislator or an employee or a business in which a legislator or an employee has a controlling interest. (Section 84-15(a), HRS).
2. CONTRACTOR has not been represented or assisted personally in the matter by an individual who has been an employee of the agency awarding this Contract within the preceding two years and who participated while so employed in the matter with which the Contract is directly concerned. (Section 84-15(b), HRS).
3. CONTRACTOR has not been assisted or represented by a legislator or employee for a fee or other compensation to obtain this Contract and will not be assisted or represented by a legislator or employee for a fee or other compensation in the performance of this Contract, if the legislator or employee had been involved in the development or award of the Contract. (Section 84-14 (d), HRS).
4. CONTRACTOR has not been represented on matters related to this Contract, for a fee or other consideration by an individual who, within the past twelve (12) months, has been an agency employee, or in the case of the Legislature, a legislator, and participated while an employee or legislator on matters related to this Contract. (Sections 84-18(b) and (c), HRS).

CONTRACTOR understands that the Contract to which this document is attached is voidable on behalf of the STATE if this Contract was entered into in violation of any provision of chapter 84, Hawaii Revised Statutes, commonly referred to as the Code of Ethics, including the provisions which are the source of the declarations above. Additionally, any fee, compensation, gift, or profit received by any person as a result of a violation of the Code of Ethics may be recovered by the STATE.

**\*Reminder to Agency:** If the "is" block is checked and if the Contract involves goods or services of a value in excess of \$10,000, the Contract must be awarded by competitive sealed bidding under section 103D-302, HRS, or a competitive sealed proposal under section 103D-303, HRS. Otherwise, the Agency may not award the Contract unless it posts a notice of its intent to award it and files a copy of the notice with the State Ethics Commission. (Section 84-15(a), HRS).

**CONTRACTOR**

By   
(Signature)

Print Name Steve Kerber

Print Title VP & Exec. Director, Fire Safety Research Inst.

Name of Contractor Underwriters Laboratories Inc.

Date 10/4/2023



## STATE OF HAWAII

# SCOPE OF SERVICES

CONTRACTOR agrees to provide the following activities and/or services to the State as described below.

CONTRACTOR further agrees that the scope of its activities and/or services as described below are limited to the circumstances and other related issues surrounding the Maui wildfires that began on August 8, 2023.

The goal of the analysis is to perform a comprehensive analysis and review of the August 2023 Lahaina fire incident to: (1) identify factors that characterized the incident's course towards its tragic outcome; (2) share lessons learned and reinforced; and (3) develop strategies and recommendations for a resilient and equitable future across Maui County and the State of Hawaii.

### **Phase 1: 3-Month Incident Timeline Report**

CONTRACTOR shall produce a Phase 1 report for the Attorney General that shall include a detailed timeline from the start of structure to structure fire spread through 11:59pm on August 8, 2023. (Or through the time that structure to structure fire spread stopped. This time frame will be determined during initial efforts of Phase 1.) CONTRACTOR shall also incorporate timeline information from investigating government agencies with respect to the time from ignition at 6:35am on August 8, 2023 through the start of structure to structure spread.

CONTRACTOR shall compile all of the raw data gathered and assemble it to generate information and knowledge during the next phase.

Data shall include, but need not be limited to, fire dynamics, fire incident response, and fire evacuation details.

CONTRACTOR shall deliver the Phase 1 report to the Attorney General within three (3) months of the effective date of this Contract.

### **Phase 2: 6-Month Incident Analysis Report**

CONTRACTOR shall produce a Phase 2 report for the Attorney General that shall include an analysis of the data and analyze what happened and how various protection systems functioned in the incident.

Analysis in the Phase 2 report shall include, but need not be limited to, fire dynamics and incident response, pre-incident planning, WUI firefighting capability (prevention, response, training, etc.), fire evacuation analysis, warning system, water system, policies and procedures

CONTRACTOR shall deliver the Phase 2 report to the Attorney General within six (6) months of the effective date of this Contract.

### **Phase 3: 12-Month Forward Looking Report**

CONTRACTOR shall produce a Phase 3 report for the Attorney General that shall include strategies and recommendations on prevention of a future incident like the August 2023 Lahaina wildfire.

The Phase 3 report shall be delivered to the Attorney General and shall include, but need not be limited to, the following: Community Risk Assessment (NFPA 1300), Standards of Cover Analysis (NFPA 1710), Community Risk Reduction Plan (NFPA 1300) and a Fire Code Review. Additional details can be found in Attachment S5.

### **Biweekly progress reports**

CONTRACTOR shall produce bi-weekly progress reports and promptly transmit them to the Attorney General via email.



## STATE OF HAWAII

**COMPENSATION AND PAYMENT SCHEDULE**

The following provisions shall apply to all compensation and reimbursements under this Agreement.

1. The total cost for the Time of Performance of this contract shall not exceed ONE MILLION FIVE HUNDRED THOUSAND AND 00/100 DOLLARS (\$1,500,000.00).

2. Hourly rates. The CONTRACTOR will be compensated at the hourly rates outlined below for the actual time expended by CONTRACTOR.

Classification	Hourly Rate of Pay
Principal	\$ 350.00
Associate	\$ 275.00
Analyst	\$ 100.00
Administrative Specialist	\$ 75.00
Administrative Assistant	\$ 45.00

3. Payments. Total payments to the CONTRACTOR under this Agreement, including those for taxes and compensation for services shall not exceed the maximum fee cap stated in recital 3 on page 2 of this Agreement. In the event that the CONTRACTOR determines that the CONTRACTOR'S compensation for services is likely to exceed the cap, the CONTRACTOR shall immediately notify the DIRECTOR in writing, and obtain the DIRECTOR'S prior written authorization to perform services for compensation in excess of this amount. Absent such authorization, the CONTRACTOR shall not be compensated for services in excess of the maximum cap.

3. Compensation. The above-referenced hourly rate, or fixed fee, as the case may be, shall be the only compensation payable to the CONTRACTOR under this Agreement, it being understood that said hourly rate, or fixed fee, as the case may be, include, without limitation, all general overhead and administrative costs such as secretarial time (regular or overtime), word processing time, use of computer assisted research, air conditioning, and rental of equipment.

4. Method of payment.

a. Detailed time sheets required. The CONTRACTOR shall keep contemporaneous detailed time sheets and itemized statements of costs which reflect all time spent and expenses incurred in connection with services performed under this Agreement.

b. Monthly billing statements.

(1) The billing statement shall be in detail sufficient for the STATE to identify with specificity the work performed by each individual, the time spent performing such work, and the expenses incurred. Each billing statement must contain a detailed description of the task performed and for each such task, (a) the name and title of the individual performing the task, (b) the time spent by the individual, (c) the appropriate hourly rate established above for the individual performing the work, and (d) the total amount charged for such task.

(2) Conferences and calls. Billings for meetings, conferences, and telephone calls must identify the participants and the subject matter discussed.

5. No STATE obligation to pay. Notwithstanding any other provision of this Agreement, the STATE shall have no duty to pay the CONTRACTOR, nor any other person performing services on behalf of the CONTRACTOR, unless the requirements described in this Compensation and Payment Schedule are first met to the STATE'S satisfaction.

6. The STATE will not be required to pay for any services it determines to be unreasonable.



**STATE OF HAWAII**  
**TIME OF PERFORMANCE**

The CONTRACTOR shall provide the services required under this Contract for a period not to exceed twelve (12) months from the effective date of this contract unless an extension is agreed upon between the parties or is sooner terminated as hereinafter provided.

Subject to mutual agreement between the parties, this contract shall allow for one (1) six-month (6-month) extension effective upon the termination date of the original contract.





## STATE OF HAWAII

**CERTIFICATE OF EXEMPTION  
FROM CIVIL SERVICE****1. By Heads of Departments Delegated by the Director of the Department of Human Resources Development ("DHRD").\***

Pursuant to a delegation of the authority by the Director of DHRD, I certify that the services to be provided under this Contract, and the person(s) providing the services under this Contract are exempt from the civil service, pursuant to § 76-16, Hawaii Revised Statutes (HRS).

Anne E. Lopez  
(Signature)

10/5/23  
(Date)

Anne E. Lopez

(Print Name)

Attorney General

(Print Title)

\* This part of the form may be used by all department heads and the heads of attached agencies to whom the Director of DHRD expressly has delegated authority to certify § 76-16, HRS, civil service exemptions. The specific paragraph(s) of § 76-16, HRS, upon which an exemption is based should be noted in the contract file. If an exemption is based on § 76-16(b)(15), the contract must meet the following conditions:

- (1) It involves the delivery of completed work or product by or during a specific time;
- (2) There is no employee-employer relationship; and
- (3) The authorized funding for the service is from other than the "A" or personal services cost element.

**NOTE:** Not all attached agencies have received a delegation under § 76-16(b)(15). If in doubt, attached agencies should check with the Director of DHRD prior to certifying an exemption under § 76-16(b)(15). Authority to certify exemptions under §§ 76-16(b)(2), and 76-16(b)(12), HRS, has not been delegated; only the Director of DHRD may certify §§ 76-16(b)(2), and 76-16(b)(12) exemptions.

**2. By the Director of DHRD, State of Hawaii.**

I certify that the services to be provided under this Contract, and the person(s) providing the services under this Contract are exempt from the civil service, pursuant to § 76-16, HRS.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Print Name)

\_\_\_\_\_  
(Print Title, if designee of the Director of DHRD)



## STATE OF HAWAII

# SPECIAL CONDITIONS

### Community Risk Assessment

Conduct a comprehensive Community Risk Assessment (CRA) that evaluates and enumerates natural, technological, and societal contributors to the health and safety of Maui residents and visitors. The CRA will be conducted in compliance with National Fire Protection Association (NFPA) Standard 1300—Standard on Community Risk Assessment and Community Risk Reduction Planning.

This assessment will benefit from the active involvement of Maui residents and local businesses in community-centered discussions of risk perception, societal and cultural contributors to risk, and the impact of multiple factors in the County's risk profile.

### Standards of Cover Analysis

Conduct a comprehensive, independent Standards of Cover (SOC) assessment of the deployment and performance of the Maui Fire Department (MFD). This assessment will quantify the MFD's ability to deliver the capabilities described in NFPA 1710—Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments.

This assessment will be conducted utilizing dynamic deployment modeling that considers the activity level of MFD emergency units and the interaction of these units with the County's Advanced Life Support (ALS) and emergency ambulance transportation systems.

### Community Risk Reduction Plan

Based on the Community Risk Assessment, develop a comprehensive Community Risk Reduction (CRR) plan that provides realistic strategies to increase the resiliency of Maui residents, infrastructure, and planning. This plan will describe actions that can be taken by individuals, community organizations, governmental agencies, and others to mitigate risks, prepare to actively address risks, and make long-term progress on addressing risk in the community.

The CRR planning process will recognize the vital cultural and historical attributes of Maui communities by including residents and local businesses at every stage.

### Fire and Building Code Review

Perform a comprehensive review of the current fire and building codes in Maui. Assess the current code enforcement capabilities of Maui County and the Maui Fire Department. This assessment is intrinsically related to the Community Risk Reduction plan outlined above and long-term strategies to address risk in the Maui community and across the State of Hawaii.



**ADDITIONAL SPECIAL CONDITIONS**

- A. Modifications to General Conditions: The General Conditions applicable to this Agreement have been modified as reflected on Attachments S7 and S8 in clean version and in a redline comparison, respectively.
- B. Representations and Warranties
1. STATE represents and warrants that the information or documentation provided by or on behalf of the STATE to CONTRACTOR is, at the time provided, true, complete, up-to-date and accurate in all respects, and shall not be misleading because of any omission or ambiguity or for any other reasons.
  2. Except as expressly set forth in this agreement, each party disclaims any and all warranties, whether express, implied or statutory, with respect to this agreement and/or the services, including but not limited to the implied warranties of merchantability, fitness for a particular purpose, non-infringement or any other warranties whatsoever, including any warranty as to the accuracy or completeness of the services, or those arising from course of dealing, usage or trade practice
- C. Liability
1. Except as prohibited by applicable law, CONTRACTOR's liability for loss or damage in contract, tort (including negligence or breach of statutory duty), misrepresentation, restitution or otherwise, arising in connection with the performance or contemplated performance of the services under this agreement shall not exceed two (2) times the aggregate fees paid for the services in the 12-month period prior to the date the cause of action arose.
  2. Except as precluded by applicable law, neither party shall be liable to the other (or otherwise under this agreement) for any of the following: any indirect or incidental loss or damage; consequential loss or damage: costs, expenses or other claims for consequential compensation whatsoever (howsoever caused); loss of revenue: loss of profit or anticipated profit; loss of data; loss of business and business interruption; depletion of goodwill; or exemplary, punitive or special damages; in each case which arise out of or in connection with the provision of the services or this agreement.
- D. Ownership: To the extent that any property (including any patent, copyright, trademark, trade secret or other intellectual property rights therein or related thereto) are created or exist as part of the services output or is used in the provision of services, such as, methodologies, procedures, documents, techniques, models, templates, software programs, know-how, analysis and/or other processes, such property (and any patent, copyright, trademark, trade secret or other intellectual property rights therein or related thereto) belong to CONTRACTOR. Upon payment for the applicable Services, CONTRACTOR grants to the STATE, as applicable, for an unlimited period of time, non-transferable and nonexclusive rights to use the reports provided to the Attorney General under the Scope of Work.
- E. Provision of Information to CONTRACTOR

1. In performing the Services, CONTRACTOR (including any authorized Subcontractor) may rely upon, and is authorized by the STATE to act upon information provided, or reasonably assumed to be provided by: (i) the STATE or any agency of the STATE; (ii) the United States or any agency of the United States; (iii) County authorities; and (iv) Other community organizations designated by the STATE as points of contact.
  2. If the STATE does not want CONTRACTOR to rely upon specific information provided by any person referred to in Special Conditions Clause E.1, STATE must notify CONTRACTOR in writing.
  3. The STATE shall make reasonable efforts to provide CONTRACTOR (or when applicable and possible direct that others provide CONTRACTOR) promptly and accurately with all instructions, information and documents as may be in the STATE's custody or control and are necessary or required by CONTRACTOR to provide the Services or to comply with Applicable Law when providing the Services.
  4. CONTRACTOR assumes no responsibility for verifying the accuracy, completeness, relevance, or reliability of any information provided to CONTRACTOR by the persons listed in Special Conditions Clause E.1. However, CONTRACTOR has no obligation to rely on such information, including in any situation in which CONTRACTOR believes it to be inaccurate, incomplete, unreliable, cumulative, or irrelevant.
- F. Assumptions: The parties assume that CONTRACTOR will request data from the appropriate stakeholders and the data will be shared freely and timely. If resistance is met, a request will be made to the Attorney General for assistance. If the Attorney General wishes to proactively request the data or facilitate the ask, that could speed up our data gathering. Delays in data sharing could result in timeline delays.
- G. CONTRACTOR Termination: The CONTRACTOR may terminate this Contract in whole or in part if the CONTRACTOR reasonably believes that further performance could pose a risk to CONTRACTOR of significant civil liability to some party other than the STATE. The CONTRACTOR shall give at least thirty (30) days written notice to the STATE of any such termination, specifying the part of the Contract terminated, when termination becomes effective, and the basis for termination.
- H. Support Requests: The CONTRACTOR requests, as necessary to its conducting the work, and the STATE agrees to make reasonable efforts to provide the following:
1. Ongoing permission to access the operational area.
  2. Aircraft access to survey all fire-affected areas and structural damage.
  3. Provision of a cultural and community liaison.
  4. Connection to points of contact representing Federal, State, County, Native Hawaiian and other community organizations to ensure CONTRACTOR has access to documentation and data from entities responsible for policy, preparedness, emergency response, and enforcement.
  5. Additional data needs:
    - FD Interviews
      - o All responding crews
      - o All responding Battalion Chiefs
      - o Fire Prevention Chief

- o Chief of Department
  - o PIO
  - o Training Chief (Training records)
  - o Others TBD
- Dispatch system data, including 911 call data
- Fire Dispatch Audio | All radio transmissions
- Police Dispatch Audio / All radio transmissions
- Drone Footage
- Additional drone footage above ignition area
- West Maui Emergency Plan
- Weather Data
  - o Times of wind shifts
  - o Historical weather data
- Overhead Persistent Infrared (OPIR) data from Department of Defense
- Water system maps
- Power grid maps
  - o Time history of power lines down, grid failure
- Codes and Standards compliance information
- Resident interviews and video footage
- Fuel mitigation history and policies — Department of Transportation
- Wildfire history data back to 2018
- History of Red flag data and policy
- Siren maps and policy
- Emergency alert text message system and policy
- Previous Fire Department Standard of Cover
- Map locations of the deceased
- Any additional map layers the fire prevention bureau can provide
- ATF Cause and Origin report / Maui County FD report
- Fire Department first due boundaries
- List of apparatus and relief/reserve apparatus
- Detailed Fire Department Staffing during the incident
- Police Department Interviews, Staffing and actions
- Police Department policies and procedures for responding to WUI incidents
- Previous MEMA Director Interview
- MEMA policies and plans
- Existing Evacuation plans and analyses
- Truth Excavating Interview, agreements in place
- IAFF Interview
- Data on fuels and grasses
- Structure assessments
  - o Surviving structures (Building material identification)
  - o Tax records, dates built/modified structures in the impacted area

GENERAL  
CONDITIONS

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GENERAL  
CONDITIONS

1. Coordination of Services by the STATE. (Modified.) The head of the purchasing agency, here the Attorney General of Hawaii ("HOPA") (which term includes the designee of the HOPA) shall coordinate the services to be provided by the CONTRACTOR in order to complete the performance required in the Contract. The CONTRACTOR shall maintain communications with HOPA at all stages of the CONTRACTOR'S work, and submit to HOPA for resolution any questions which may arise as to the performance of this Contract. "Purchasing agency" as used in these General Conditions means and includes any governmental body which is authorized under chapter 103D, HRS, or its implementing rules and procedures, or by way of delegation, to enter into contracts for the procurement of goods or services or both. Notwithstanding any other provision herein, no other department, agency, board, or commission of the State of Hawaii besides the Department of the Attorney General of Hawaii shall be considered the purchasing agency or otherwise have standing to assert the STATE's rights or coordinate services on behalf of the STATE under this Agreement, unless otherwise agreed to by the parties.
2. Relationship of Parties: Independent Contractor Status and Responsibilities, Including Tax Responsibilities. (Modified.)
  - a. In the performance of services required under this Contract, the CONTRACTOR is an "independent contractor," with the authority and responsibility to control and direct the performance and details of the work and services required under this Contract; however, the STATE shall have a general right to inspect work in progress to determine whether, in the STATE'S opinion, the services are being performed by the CONTRACTOR in compliance with this Contract. Unless otherwise provided by special condition, it is understood that the STATE does not agree to use the CONTRACTOR exclusively, and that the CONTRACTOR is free to contract to provide services to other individuals or entities while under contract with the STATE.
  - b. The CONTRACTOR and the CONTRACTOR'S employees and agents are not by reason of this Contract, agents or employees of the State for any purpose, and the CONTRACTOR and the CONTRACTOR'S employees and agents shall not be entitled to claim or receive from the State any vacation, sick leave, retirement, workers' compensation, unemployment insurance, or other benefits provided to state employees.
  - c. The CONTRACTOR shall be responsible for the accuracy, completeness, and adequacy of the CONTRACTOR'S performance under this Contract. Furthermore, the CONTRACTOR intentionally, voluntarily, and knowingly assumes the sole and entire liability to the CONTRACTOR'S employees and agents, and to any individual not a party to this Contract, for all loss, damage, or injury caused by the CONTRACTOR, or the CONTRACTOR'S employees or agents in the course of their employment.
  - d. The CONTRACTOR shall be responsible for payment of all applicable federal, state, and county taxes and fees which may become due and owing by the CONTRACTOR by reason of this Contract, including but not limited to (i) income taxes, (ii) employment related fees, assessments, and taxes, and (iii) general excise taxes. The CONTRACTOR also is responsible for obtaining all licenses, permits, and certificates that may be required in order to perform this Contract.
  - e. (Reserved.)

- f. The CONTRACTOR is responsible for securing all employee-related insurance coverage for the CONTRACTOR and the CONTRACTOR'S employees and agents that is or may be required by law, and for payment of all premiums, costs, and other liabilities associated with securing the insurance coverage.
  - g. (Reserved.)
  - h. (Reserved.)
  - i. (Reserved.)
- 3. Personnel Requirements.
  - a. The CONTRACTOR shall secure, at the CONTRACTOR'S own expense, all personnel required to perform this Contract.
  - b. The CONTRACTOR shall ensure that the CONTRACTOR'S employees or agents are experienced and fully qualified to engage in the activities and perform the services required under this Contract, and that all applicable licensing and operating requirements imposed or required under federal, state, or county law, and all applicable accreditation and other standards of quality generally accepted in the field of the activities of such employees and agents are complied with and satisfied.
- 4. Nondiscrimination. No person performing work under this Contract, including any subcontractor, employee, or agent of the CONTRACTOR, shall engage in any discrimination that is prohibited by any applicable federal, state, or county law.
- 5. Conflicts of Interest. The CONTRACTOR represents that neither the CONTRACTOR, nor any employee or agent of the CONTRACTOR, presently has any interest, and promises that no such interest, direct or indirect, shall be acquired, that would or might conflict in any manner or degree with the CONTRACTOR'S performance under this Contract.
- 6. Subcontracts and Assignments. (Modified.) The CONTRACTOR shall not assign or subcontract any of the CONTRACTOR'S duties, obligations, or interests under this Contract and no such assignment or subcontract shall be effective unless the CONTRACTOR obtains the prior written consent of the STATE. Additionally, no assignment by the CONTRACTOR of the CONTRACTOR'S right to compensation under this Contract shall be effective unless and until the assignment is approved by the Comptroller of the State of Hawaii, as provided in section 40-58, HRS. Notwithstanding the foregoing, STATE agrees that subcontractors hired before the execution date hereto, including Facets Consulting, have been approved in conformity with this Section 6.
  - a. Recognition of a successor in interest. When in the best interest of the State, a successor in interest may be recognized in an assignment contract in which the STATE, the CONTRACTOR and the assignee or transferee (hereinafter referred to as the "Assignee") agree that:
    - (1) The Assignee assumes all of the CONTRACTOR'S obligations;
    - (2) The CONTRACTOR remains liable for all obligations under this Contract but waives all rights under this Contract as against the STATE; and

- (3) The CONTRACTOR shall continue to furnish, and the Assignee shall also furnish, all required bonds.
- b. Change of name. When the CONTRACTOR asks to change the name in which it holds this Contract with the STATE, the procurement officer of the purchasing agency (hereinafter referred to as the "Agency procurement officer") shall, upon receipt of a document acceptable or satisfactory to the Agency procurement officer indicating such change of name (for example, an amendment to the CONTRACTOR'S articles of incorporation), enter into an amendment to this Contract with the CONTRACTOR to effect such a change of name. The amendment to this Contract changing the CONTRACTOR'S name shall specifically indicate that no other terms and conditions of this Contract are thereby changed.
- c. Reports. All assignment contracts and amendments to this Contract effecting changes of the CONTRACTOR'S name or novations hereunder shall be reported to the chief procurement officer (CPO) as defined in section 103D-203(a), HRS, within thirty days of the date that the assignment contract or amendment becomes effective.
- d. Actions affecting more than one purchasing agency. Notwithstanding the provisions of subparagraphs 6a through 6c herein, when the CONTRACTOR holds contracts with more than one purchasing agency of the State, the assignment contracts and the novation and change of name amendments herein authorized shall be processed only through the CPO's office.
7. Indemnification and Defense. (Modified.) The CONTRACTOR shall defend, indemnify, and hold harmless the State of Hawaii, the contracting agency, and their officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including all attorneys' fees, and all claims, suits, and demands therefore, related to third party claims arising out of or resulting from the reckless or grossly negligent acts or omissions of the CONTRACTOR or the CONTRACTOR'S employees, officers, agents, or subcontractors under this Contract, excluding any third party claims arising out of or resulting from the contents of the Phase 1, Phase 2, and Phase 3 reports. The provisions of this paragraph shall remain in full force and effect notwithstanding the expiration or early termination of this Contract.
8. (Reserved.)
9. (Reserved.)
10. STATE'S Right of Offset. The STATE may offset against any monies or other obligations the STATE owes to the CONTRACTOR under this Contract, any amounts owed to the State of Hawaii by the CONTRACTOR under this Contract or any other contracts, or pursuant to any law or other obligation owed to the State of Hawaii by the CONTRACTOR, including, without limitation, the payment of any taxes or levies of any kind or nature. The STATE will notify the CONTRACTOR in writing of any offset and the nature of such offset. For purposes of this paragraph, amounts owed to the State of Hawaii shall not include debts or obligations which have been liquidated, agreed to by the CONTRACTOR, and are covered by an installment payment or other settlement plan approved by the State of Hawaii, provided, however, that the CONTRACTOR shall be entitled to such exclusion only to the extent that the CONTRACTOR is current with, and not delinquent on, any payments or obligations owed to the State of Hawaii under such payment or other settlement plan.
11. Disputes. Disputes shall be resolved in accordance with section 103D-703, HRS, and chapter 3-126, Hawaii Administrative Rules ("HAR"), as the same may be amended from time to time.

12. Suspension of Contract. The STATE reserves the right at any time and for any reason to suspend this Contract for any reasonable period, upon written notice to the CONTRACTOR in accordance with the provisions herein.
- a. Order to stop performance. The Agency procurement officer may, by written order to the CONTRACTOR, at any time, and without notice to any surety, require the CONTRACTOR to stop all or any part of the performance called for by this Contract. This order shall be for a specified period not exceeding sixty (60) days after the order is delivered to the CONTRACTOR, unless the parties agree to any further period. Any such order shall be identified specifically as a stop performance order issued pursuant to this section. Stop performance orders shall include, as appropriate: (1) A clear description of the work to be suspended; (2) Instructions as to the issuance of further orders by the CONTRACTOR for material or services; (3) Guidance as to action to be taken on subcontracts; and (4) Other instructions and suggestions to the CONTRACTOR for minimizing costs. Upon receipt of such an order, the CONTRACTOR shall forthwith comply with its terms and suspend all performance under this Contract at the time stated, provided, however, the CONTRACTOR shall take all reasonable steps to minimize the occurrence of costs allocable to the performance covered by the order during the period of performance stoppage. Before the stop performance order expires, or within any further period to which the parties shall have agreed, the Agency procurement officer shall either:
- (1) Cancel the stop performance order; or
  - (2) Terminate the performance covered by such order as provided in the termination for default provision or the termination for convenience provision of this Contract.
- b. Cancellation or expiration of the order. If a stop performance order issued under this section is cancelled at any time during the period specified in the order, or if the period of the order or any extension thereof expires, the CONTRACTOR shall have the right to resume performance. An appropriate adjustment shall be made in the delivery schedule or contract price, or both, and the Contract shall be modified in writing accordingly, if:
- (1) The stop performance order results in an increase in the time required for, or in the CONTRACTOR'S cost properly allocable to, the performance of any part of this Contract; and
  - (2) The CONTRACTOR asserts a claim for such an adjustment within thirty (30) days after the end of the period of performance stoppage; provided that, if the Agency procurement officer decides that the facts justify such action, any such claim asserted may be received and acted upon at any time prior to final payment under this Contract.
- c. Termination of stopped performance. If a stop performance order is not cancelled and the performance covered by such order is terminated for default or convenience, the reasonable costs resulting from the stop performance order shall be allowable by adjustment or otherwise.
- d. Adjustment of price. Any adjustment in contract price made pursuant to this paragraph shall be determined in accordance with the price adjustment provision of this Contract.



13. Termination for Default.

- a. Default. If the CONTRACTOR refuses or fails to perform any of the provisions of this Contract with such diligence as will ensure its completion within the time specified in this Contract, or any extension thereof, otherwise fails to timely satisfy the Contract provisions, or commits any other substantial breach of this Contract, the Agency procurement officer may notify the CONTRACTOR in writing of the delay or non-performance and if not cured in ten (10) days or any longer time specified in writing by the Agency procurement officer, such officer may terminate the CONTRACTOR'S right to proceed with the Contract or such part of the Contract as to which there has been delay or a failure to properly perform. In the event of termination in whole or in part, the Agency procurement officer may procure similar goods or services in a manner and upon the terms deemed appropriate by the Agency procurement officer. The CONTRACTOR shall continue performance of the Contract to the extent it is not terminated and shall be liable for excess costs incurred in procuring similar goods or services.
- b. CONTRACTOR'S duties. Notwithstanding termination of the Contract and subject to any directions from the Agency procurement officer, the CONTRACTOR shall take timely, reasonable, and necessary action to protect and preserve property in the possession of the CONTRACTOR in which the STATE has an interest.
- c. Compensation. Payment for completed goods and services delivered and accepted by the STATE shall be at the price set forth in the Contract. Payment for the protection and preservation of property shall be in an amount agreed upon by the CONTRACTOR and the Agency procurement officer. If the parties fail to agree, the Agency procurement officer shall set an amount subject to the CONTRACTOR'S rights under chapter 3-126, HAR. The STATE may withhold from amounts due the CONTRACTOR such sums as the Agency procurement officer deems to be necessary to protect the STATE against loss because of outstanding liens or claims and to reimburse the STATE for the excess costs expected to be incurred by the STATE in procuring similar goods and services.
- d. Excuse for nonperformance or delayed performance. The CONTRACTOR shall not be in default by reason of any failure in performance of this Contract in accordance with its terms, including any failure by the CONTRACTOR to make progress in the prosecution of the performance hereunder which endangers such performance, if the CONTRACTOR has notified the Agency procurement officer within fifteen (15) days after the cause of the delay and the failure arises out of causes such as: acts of God; acts of a public enemy; acts of the State and any other governmental body in its sovereign or contractual capacity; fires; floods; epidemics; quarantine restrictions; strikes or other labor disputes; freight embargoes; or unusually severe weather. If the failure to perform is caused by the failure of a subcontractor to perform or to make progress, and if such failure arises out of causes similar to those set forth above, the CONTRACTOR shall not be deemed to be in default, unless the goods and services to be furnished by the subcontractor were reasonably obtainable from other sources in sufficient time to permit the CONTRACTOR to meet the requirements of the Contract. Upon request of the CONTRACTOR, the Agency procurement officer shall ascertain the facts and extent of such failure, and, if such officer determines that any failure to perform was occasioned by any one or more of the excusable causes, and that, but for the excusable cause, the CONTRACTOR'S progress and performance would have met the terms of the Contract, the delivery schedule shall be revised accordingly, subject to the rights of the STATE under this Contract. As used in this paragraph, the term "subcontractor" means subcontractor at any tier.

- e. Erroneous termination for default. If, after notice of termination of the CONTRACTOR'S right to proceed under this paragraph, it is determined for any reason that the CONTRACTOR was not in default under this paragraph, or that the delay was excusable under the provisions of subparagraph 13d, "Excuse for nonperformance or delayed performance," the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to paragraph 14.
- f. Additional rights and remedies. The rights and remedies provided in this paragraph are in addition to any other rights and remedies provided by law or under this Contract.

14. Termination for Convenience.

- a. Termination. The Agency procurement officer may, when the interests of the STATE so require, terminate this Contract in whole or in part, for the convenience of the STATE. The Agency procurement officer shall give written notice of the termination to the CONTRACTOR specifying the part of the Contract terminated and when termination becomes effective.
- b. CONTRACTOR'S obligations. The CONTRACTOR shall incur no further obligations in connection with the terminated performance and on the date(s) set in the notice of termination the CONTRACTOR will stop performance to the extent specified. The CONTRACTOR shall also terminate outstanding orders and subcontracts as they relate to the terminated performance. The CONTRACTOR shall settle the liabilities and claims arising out of the termination of subcontracts and orders connected with the terminated performance subject to the STATE'S approval. The Agency procurement officer may direct the CONTRACTOR to assign the CONTRACTOR'S right, title, and interest under terminated orders or subcontracts to the STATE. The CONTRACTOR must still complete the performance not terminated by the notice of termination and may incur obligations as necessary to do so.
- c. Right to goods and work product. (Modified.) The Agency procurement officer may require the CONTRACTOR to transfer title and deliver to the STATE in the manner and to the extent directed by the Agency procurement officer any finalized report work product described in the Scope of Work.

The CONTRACTOR shall, upon direction of the Agency procurement officer, protect and preserve property in the possession of the CONTRACTOR in which the STATE has an interest. Use of this paragraph in no way implies that the STATE has breached the Contract by exercise of the termination for convenience provision.

- d. Compensation.
  - (1) The CONTRACTOR shall submit a termination claim specifying the amounts due because of the termination for convenience together with the cost or pricing data, submitted to the extent required by chapter 3-122, HAR, bearing on such claim. If the CONTRACTOR fails to file a termination claim within one year from the effective date of termination, the Agency procurement officer may pay the CONTRACTOR, if at all, an amount set in accordance with subparagraph 14d(3) below.
  - (2) The Agency procurement officer and the CONTRACTOR may agree to a settlement provided the CONTRACTOR has filed a termination claim supported by cost or pricing data submitted as required and that the settlement does not

exceed the total Contract price plus settlement costs reduced by payments previously made by the STATE, the proceeds of any sales of goods and manufacturing materials under subparagraph 14c, and the Contract price of the performance not terminated.

- (3) Absent complete agreement under subparagraph 14d(2) the Agency procurement officer shall pay the CONTRACTOR the following amounts, provided payments agreed to under subparagraph 14d(2) shall not duplicate payments under this subparagraph for the following:
  - (A) Contract prices for goods or services accepted under the Contract;
  - (B) Costs incurred in preparing to perform and performing the terminated portion of the performance plus a fair and reasonable profit on such portion of the performance, such profit shall not include anticipatory profit or consequential damages, less amounts paid or to be paid for accepted goods or services; provided, however, that if it appears that the CONTRACTOR would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss;
  - (C) Costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to subparagraph 14b. These costs must not include costs paid in accordance with subparagraph 14d(3)(B);
  - (D) The reasonable settlement costs of the CONTRACTOR, including accounting, legal, clerical, and other expenses reasonably necessary for the preparation of settlement claims and supporting data with respect to the terminated portion of the Contract and for the termination of subcontracts thereunder, together with reasonable storage, transportation, and other costs incurred in connection with the protection or disposition of property allocable to the terminated portion of this Contract. The total sum to be paid the CONTRACTOR under this subparagraph shall not exceed the total Contract price plus the reasonable settlement costs of the CONTRACTOR reduced by the amount of payments otherwise made, the proceeds of any sales of supplies and manufacturing materials under subparagraph 14d(2), and the contract price of performance not terminated.
- (4) Costs claimed, agreed to, or established under subparagraphs 14d(2) and 14d(3) shall be in accordance with Chapter 3-123 (Cost Principles) of the Procurement Rules.

15. Claims Based on the Agency Procurement Officer's Actions or Omissions.

- a. Changes in scope. If any action or omission on the part of the Agency procurement officer (which term includes the designee of such officer for purposes of this paragraph 15) requiring performance changes within the scope of the Contract constitutes the basis for a claim by the CONTRACTOR for additional compensation, damages, or an extension of time for completion, the CONTRACTOR shall continue with performance of the Contract in compliance with the directions or orders of such officials, but by so

doing, the CONTRACTOR shall not be deemed to have prejudiced any claim for additional compensation, damages, or an extension of time for completion; provided:

- (1) Written notice required. The CONTRACTOR shall give written notice to the Agency procurement officer:
    - (A) Prior to the commencement of the performance involved, if at that time the CONTRACTOR knows of the occurrence of such action or omission;
    - (B) Within thirty (30) days after the CONTRACTOR knows of the occurrence of such action or omission, if the CONTRACTOR did not have such knowledge prior to the commencement of the performance; or
    - (C) Within such further time as may be allowed by the Agency procurement officer in writing.
  - (2) Notice content. This notice shall state that the CONTRACTOR regards the act or omission as a reason which may entitle the CONTRACTOR to additional compensation, damages, or an extension of time. The Agency procurement officer, upon receipt of such notice, may rescind such action, remedy such omission, or take such other steps as may be deemed advisable in the discretion of the Agency procurement officer;
  - (3) Basis must be explained. The notice required by subparagraph 15a(1) describes as clearly as practicable at the time the reasons why the CONTRACTOR believes that additional compensation, damages, or an extension of time may be remedies to which the CONTRACTOR is entitled; and
  - (4) Claim must be justified. The CONTRACTOR must maintain and, upon request, make available to the Agency procurement officer within a reasonable time, detailed records to the extent practicable, and other documentation and evidence satisfactory to the STATE, justifying the claimed additional costs or an extension of time in connection with such changes.
- b. CONTRACTOR not excused. Nothing herein contained, however, shall excuse the CONTRACTOR from compliance with any rules or laws precluding any state officers and CONTRACTOR from acting in collusion or bad faith in issuing or performing change orders which are clearly not within the scope of the Contract.
  - c. Price adjustment. Any adjustment in the price made pursuant to this paragraph shall be determined in accordance with the price adjustment provision of this Contract.
16. Costs and Expenses. Any reimbursement due the CONTRACTOR for per diem and transportation expenses under this Contract shall be subject to chapter 3-123 (Cost Principles), HAR, and the following guidelines:
- a. Reimbursement for air transportation shall be for actual cost or coach class air fare, whichever is less.
  - b. Reimbursement for ground transportation costs shall not exceed the actual cost of renting an intermediate-sized vehicle.

- c. Unless prior written approval of the HOPA is obtained, reimbursement for subsistence allowance (i.e., hotel and meals, etc.) shall not exceed the applicable daily authorized rates for inter-island or out-of-state travel that are set forth in the current Governor's Executive Order authorizing adjustments in salaries and benefits for state officers and employees in the executive branch who are excluded from collective bargaining coverage.

17. Payment Procedures; Final Payment; Tax Clearance. (Modified.)

- a. Original invoices required. All payments under this Contract shall be made only upon submission by the CONTRACTOR of original invoices specifying the amount due and certifying that services requested under the Contract have been performed by the CONTRACTOR according to the Contract.
- b. Subject to available funds. Such payments are subject to availability of funds and allotment by the Director of Finance in accordance with chapter 37, HRS. Further, all payments shall be made in accordance with and subject to chapter 40, HRS.
- c. Prompt payment.
  - (1) Any money, other than retainage, paid to the CONTRACTOR shall be disbursed to subcontractors within ten (10) days after receipt of the money in accordance with the terms of the subcontract; provided that the subcontractor has met all the terms and conditions of the subcontract and there are no bona fide disputes; and
  - (2) Upon final payment to the CONTRACTOR, full payment to the subcontractor, including retainage, shall be made within ten (10) days after receipt of the money; provided that there are no bona fide disputes over the subcontractor's performance under the subcontract.
- d. (Reserved.)

18. Federal Funds. If this Contract is payable in whole or in part from federal funds, CONTRACTOR agrees that, as to the portion of the compensation under this Contract to be payable from federal funds, the CONTRACTOR shall be paid only from such funds received from the federal government, and shall not be paid from any other funds. Failure of the STATE to receive anticipated federal funds shall not be considered a breach by the STATE or an excuse for nonperformance by the CONTRACTOR.

19. Modifications of Contract. (Modified.)

- a. In writing. Any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract permitted by this Contract shall be made by written amendment to this Contract, signed by the CONTRACTOR and the STATE, provided that change orders shall be made in accordance with paragraph 20 herein.
- b. No oral modification. No oral modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract shall be permitted.
- c. (Reserved.)

- d. Adjustments of price or time for performance. If any modification increases or decreases the CONTRACTOR'S cost of, or the time required for, performance of any part of the work under this Contract, an adjustment shall be made and this Contract modified in writing accordingly. Any adjustment in contract price made pursuant to this clause shall be determined, where applicable, in accordance with the price adjustment clause of this Contract or as negotiated.
  - e. Claim barred after final payment. No claim by the CONTRACTOR for an adjustment hereunder shall be allowed if written modification of the Contract is not made prior to final payment under this Contract.
  - f. Claims not barred. In the absence of a written contract modification, nothing in this clause shall be deemed to restrict the CONTRACTOR'S right to pursue a claim under this Contract or for a breach of contract.
  - g. Head of the purchasing agency approval. If this is a professional services contract awarded pursuant to section 103D-303 or 103D-304, HRS, any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract which increases the amount payable to the CONTRACTOR by at least \$25,000.00 and ten per cent (10%) or more of the initial contract price, must receive the prior approval of the head of the purchasing agency.
  - h. (Reserved.)
  - i. (Reserved.)
20. Change Order. (Modified.) The Agency procurement officer may, by a written order signed only by the STATE, at any time, and without notice to any surety, and subject to all appropriate adjustments, make changes within the general scope of this Contract in any one or more of the following:
- (1) Method of delivery; or
  - (2) Place of delivery.
- a. Adjustments of price. If any change order increases or decreases the CONTRACTOR'S cost of performance of any part of the work under this Contract, whether or not changed by the order, an adjustment shall be made and the Contract modified in writing accordingly. Any adjustment in the Contract price made pursuant to this provision shall be determined in accordance with the price adjustment provision of this Contract. Failure of the parties to agree to an adjustment shall not excuse the CONTRACTOR from proceeding with the Contract as changed, provided that the Agency procurement officer promptly and duly makes the provisional adjustments in payment as may be reasonable. By proceeding with the work, the CONTRACTOR shall not be deemed to have prejudiced any claim for additional compensation.
  - b. Time period for claim. Within ten (10) days after receipt of a written change order under subparagraph 20a, unless the period is extended by the Agency procurement officer in writing, the CONTRACTOR shall respond with a claim for an adjustment. The requirement for a timely written response by CONTRACTOR cannot be waived and shall be a condition precedent to the assertion of a claim.
  - c. Claim barred after final payment. No claim by the CONTRACTOR for an adjustment

hereunder shall be allowed if a written response is not given prior to final payment under this Contract.

- d. Other claims not barred. In the absence of a change order, nothing in this paragraph 20 shall be deemed to restrict the CONTRACTOR'S right to pursue a claim under the Contract or for breach of contract.

21. Price Adjustment.

- a. Price adjustment. Any adjustment in the contract price pursuant to a provision in this Contract shall be made in one or more of the following ways:

- (1) By agreement on a fixed price adjustment before commencement of the pertinent performance or as soon thereafter as practicable;
- (2) By unit prices specified in the Contract or subsequently agreed upon;
- (3) By the costs attributable to the event or situation covered by the provision, plus appropriate profit or fee, all as specified in the Contract or subsequently agreed upon;
- (4) In such other manner as the parties may mutually agree; or

In the absence of agreement between the parties, by a unilateral determination by the Agency procurement officer of the costs attributable to the event or situation covered by the provision, plus appropriate profit or fee, all as computed by the Agency procurement officer in accordance with generally accepted accounting principles and applicable sections of chapters 3-123 and 3-126, HAR.

- b. Submission of cost or pricing data. The CONTRACTOR shall provide cost or pricing data for any price adjustments subject to the provisions of chapter 3-122, HAR.

22. Variation in Quantity for Definite Quantity Contracts. Upon the agreement of the STATE and the CONTRACTOR, the quantity of goods or services, or both, if a definite quantity is specified in this Contract, may be increased by a maximum of ten per cent (10%); provided the unit prices will remain the same except for any price adjustments otherwise applicable; and the Agency procurement officer makes a written determination that such an increase will either be more economical than awarding another contract or that it would not be practical to award another contract.

23. (Reserved.)

24. Confidentiality of Material. (Modified.)

- a. All material given to or made available to the CONTRACTOR by virtue of this Contract, which is identified as proprietary or confidential information, will be safeguarded by the CONTRACTOR and shall not be disclosed to any individual or organization without the prior written approval of the STATE.
- b. All information, data, or other material provided by the CONTRACTOR to the STATE or given to or made available to the CONTRACTOR by virtue of this Contract shall be treated as potentially confidential and potentially subject to Section 92F-13(2)

and/or (3) of the Uniform Information Practices Act, chapter 92F, HRS providing for exceptions from disclosure of government records. The determination of the applicability of Section 92F-13(2) and/or (3) and/or other potential bases for non-disclosure shall be within the discretion of the STATE. However, no information, data, or other material provided by the CONTRACTOR to the STATE and identified as proprietary or confidential information shall be disclosed by the STATE without advance notice to CONTRACTOR sufficient for CONTRACTOR to object to (and pursue judicial remedies to prevent) disclosure.

- c. Aspects of the services will be advice to and consultation with the Office of the Attorney General of Hawaii for purposes of facilitating the Attorney General's rendering legal advice to the STATE, and for purposes of facilitating that Office's personnel rendering legal advice to the Attorney General for the benefit of the STATE. Moreover, aspects of the services may be work for the STATE in preparation for potential or actual litigation to which the STATE or its instrumentalities or agencies are party. CONTRACTOR and STATE therefore understand and acknowledge that the services and communications under this agreement are or may be protected from disclosure by the attorney-client privilege, attorney work product doctrine, deliberative process privilege, or other applicable privileges.
  - d. At present trial and deposition testimony are not anticipated. In the event that the STATE determines that any CONTRACTOR personnel's role will change to that of a testifying expert, CONTRACTOR and the STATE intend to enter into a separate agreement regarding any testimony and related work, and CONTRACTOR and STATE understand that CONTRACTOR will rely upon STATE's counsel's direction and instructions in connection with any attorney/client and/or work product privilege issues.
- 25. (Reserved.)
  - 26. (Reserved.)
  - 27. Liens and Warranties. Goods provided under this Contract shall be provided free of all liens and provided together with all applicable warranties, or with the warranties described in the Contract documents, whichever are greater.
  - 28. Audit of Books and Records of the CONTRACTOR. The STATE may, at reasonable times and places, audit the books and records of the CONTRACTOR, prospective contractor, subcontractor, or prospective subcontractor which are related to:
    - a. The cost or pricing data, and
    - b. A state contract, including subcontracts, other than a firm fixed-price contract.
  - 29. (Reserved.)
  - 30. (Reserved.).
  - 31. Records Retention.
    - (1) Upon any termination of this Contract or as otherwise required by applicable law, CONTRACTOR shall, pursuant to chapter 487R, HRS, destroy all copies (paper or



electronic form) of personal information received from the STATE.

- (2) The CONTRACTOR and any subcontractors shall maintain the files, books, and records that relate to the Contract, including any personal information created or received by the CONTRACTOR on behalf of the STATE, and any cost or pricing data, for at least three (3) years after the date of final payment under the Contract. The personal information shall continue to be confidential and shall only be disclosed as permitted or required by law. After the three (3) year, or longer retention period as required by law has ended, the files, books, and records that contain personal information shall be destroyed pursuant to chapter 487R, HRS or returned to the STATE at the request of the STATE.
32. Antitrust Claims. The STATE and the CONTRACTOR recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, the CONTRACTOR hereby assigns to STATE any and all claims for overcharges as to goods and materials purchased in connection with this Contract, except as to overcharges which result from violations commencing after the price is established under this Contract and which are not passed on to the STATE under an escalation clause.
33. (Reserved.)
34. Governing Law. (Modified.) The validity of this Contract and any of its terms or provisions, as well as the rights and duties of the parties to this Contract, shall be governed by the laws of the State of Hawaii. Any action at law or in equity to enforce or interpret the provisions of this Contract shall be brought in a federal court of competent jurisdiction in Honolulu, Hawaii.
35. Compliance with Laws. The CONTRACTOR shall comply with all federal, state, and county laws, ordinances, codes, rules, and regulations, as the same may be amended from time to time, that in any way affect the CONTRACTOR'S performance of this Contract.
36. (Reserved.)
37. Entire Contract. This Contract sets forth all of the agreements, conditions, understandings, promises, warranties, and representations between the STATE and the CONTRACTOR relative to this Contract. This Contract supersedes all prior agreements, conditions, understandings, promises, warranties, and representations, which shall have no further force or effect. There are no agreements, conditions, understandings, promises, warranties, or representations, oral or written, express or implied, between the STATE and the CONTRACTOR other than as set forth or as referred to herein.
38. Severability. In the event that any provision of this Contract is declared invalid or unenforceable by a court, such invalidity or unenforceability shall not affect the validity or enforceability of the remaining terms of this Contract.
39. Waiver. (Modified.) The failure of either party to insist upon the strict compliance with any term, provision, or condition of this Contract shall not constitute or be deemed to constitute a waiver or relinquishment of that party's right to enforce the same in accordance with this Contract.
40. (Reserved.)
41. Campaign Contributions. The CONTRACTOR is hereby notified of the applicability of 11-355, HRS, which states that campaign contributions are prohibited from specified state or county government contractors during the terms of their contracts if the contractors are paid with funds

appropriated by a legislative body.

42. Confidentiality of Personal Information.

a. Definitions.

"Personal information" means an individual's first name or first initial and last name in combination with any one or more of the following data elements, when either name or data elements are not encrypted:

- (1) Social security number;
- (2) Driver's license number or Hawaii identification card number; or
- (3) Account number, credit or debit card number, access code, or password that would permit access to an individual's financial information.

Personal information does not include publicly available information that is lawfully made available to the general public from federal, state, or local government records.

"Technological safeguards" means the technology and the policy and procedures for use of the technology to protect and control access to personal information.

b. Confidentiality of Material.

- (1) All material given to or made available to the CONTRACTOR by the STATE by virtue of this Contract which is identified as personal information, shall be safeguarded by the CONTRACTOR and shall not be disclosed without the prior written approval of the STATE.
- (2) CONTRACTOR agrees not to retain, use, or disclose personal information for any purpose other than as permitted or required by this Contract.
- (3) CONTRACTOR agrees to implement appropriate "technological safeguards" that are acceptable to the STATE to reduce the risk of unauthorized access to personal information.
- (4) CONTRACTOR shall report to the STATE in a prompt and complete manner any security breaches involving personal information.
- (5) CONTRACTOR agrees to mitigate, to the extent practicable, any harmful effect that is known to CONTRACTOR because of a use or disclosure of personal information by CONTRACTOR in violation of the requirements of this paragraph.
- (6) CONTRACTOR shall complete and retain a log of all disclosures made of personal information received from the STATE, or personal information created or received by CONTRACTOR on behalf of the STATE.

c. Security Awareness Training and Confidentiality Agreements.

- (1) CONTRACTOR certifies that all of its employees who will have access to the personal information have completed training on security awareness topics relating to protecting personal information.
  - (2) CONTRACTOR certifies that confidentiality agreements have been signed by all of its employees who will have access to the personal information acknowledging that:
    - (A) The personal information collected, used, or maintained by the CONTRACTOR will be treated as confidential;
    - (B) Access to the personal information will be allowed only as necessary to perform the Contract; and
    - (C) Use of the personal information will be restricted to uses consistent with the services subject to this Contract.
- d. Termination for Cause. In addition to any other remedies provided for by this Contract, if the STATE learns of a material breach by CONTRACTOR of this paragraph by CONTRACTOR, the STATE may at its sole discretion:
- (1) Provide an opportunity for the CONTRACTOR to cure the breach or end the violation; or
  - (2) Immediately terminate this Contract.
- In either instance, the CONTRACTOR and the STATE shall follow chapter 487N, HRS, with respect to notification of a security breach of personal information.
- e. Records Retention.
- (1) Upon any termination of this Contract or as otherwise required by applicable law, CONTRACTOR shall, pursuant to chapter 487R, HRS, destroy all copies (paper or electronic form) of personal information received from the STATE.
  - (2) The CONTRACTOR and any subcontractors shall maintain the files, books, and records that relate to the Contract, including any personal information created or received by the CONTRACTOR on behalf of the STATE, and any cost or pricing data, for at least three (3) years after the date of final payment under the Contract. The personal information shall continue to be confidential and shall only be disclosed as permitted or required by law. After the three (3) year, or longer retention period as required by law has ended, the files, books, and records that contain personal information shall be destroyed pursuant to chapter 487R, HRS or returned to the STATE at the request of the STATE.

# Attachment 2



## Deanne Criswell



Office of the Administrator  
FEMA Administrator

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 (NIMAT) 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 2001 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.

Last updated May 12, 2023

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# U.S. Fire Administration

**Working for a fire-safe America**

## **Dr. Lori Moore-Merrell**

### **U.S. Fire Administrator**

≡ In this section

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).



Dr. Lori Moore-Merrell

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.

## Administrator's remarks and news

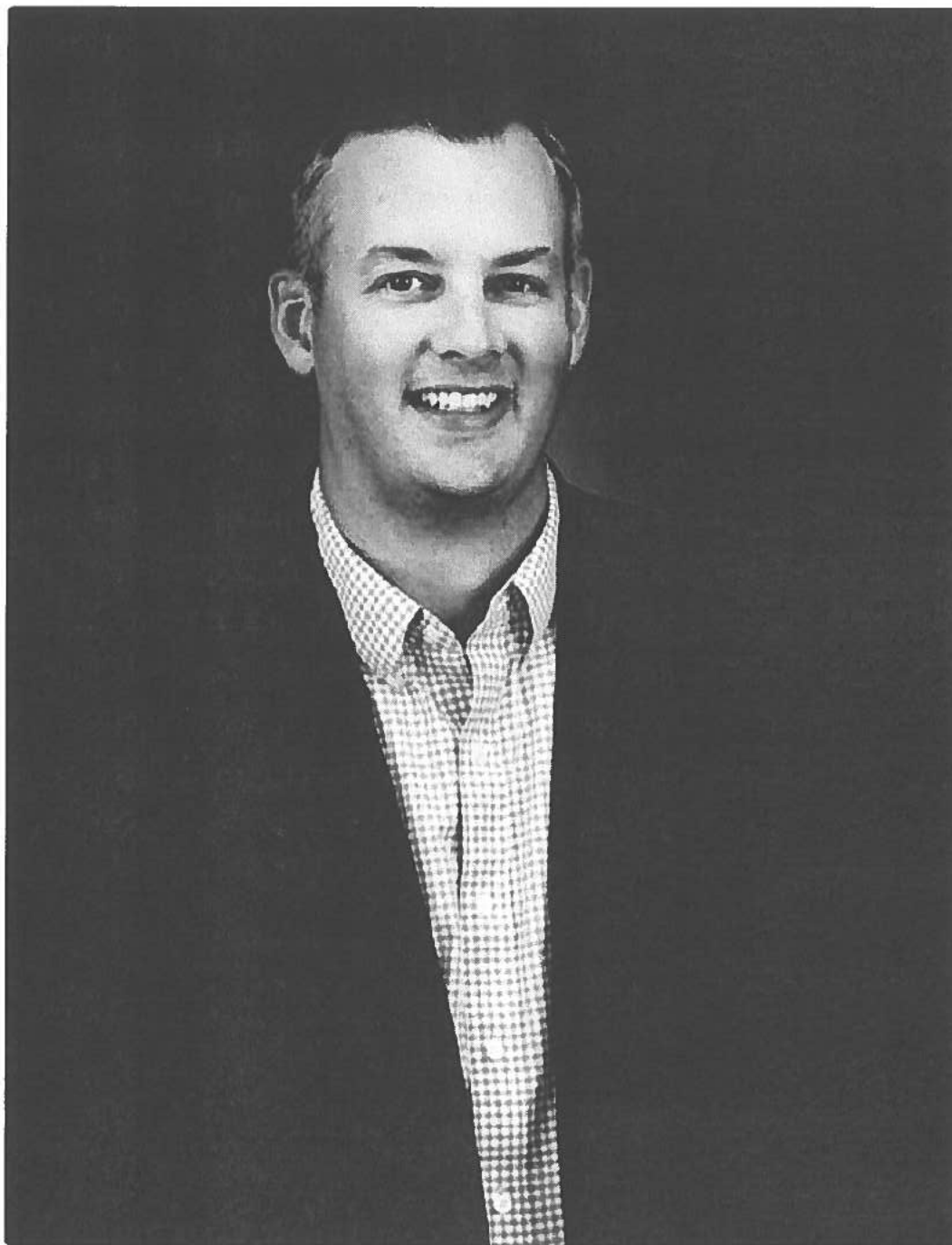
**Jan. 19, 2023:** The USFA Podcast. On this episode, we recap 2022 accomplishments with Fire Administrator Dr. Lori Moore-Merrell and discuss USFA priorities and initiatives for 2023.

**Jan. 10-12, 2023:** The Fire Stop Event. The U.S. Fire Administrator and principal leaders from the American fire service, in partnership with the Fire Department of New York, the Philadelphia Fire Department, and the Washington, D.C. Fire and Emergency Medical Services Department, will stand together to speak with one voice to address the fire problem facing our nation.

**Oct. 11, 2022:** U.S. Fire Administrator's Summit on Fire Prevention and Control. Highlights from the summit at the National Emergency Training Center in Emmitsburg, Maryland.

**June 21, 2022:** Fire and Life Safety Communicators Initiative. Created by Dr. Moore-Merrell, the Fire and Life Safety Communicators Initiative is a collaboration among the fire and the emergency medical


**FSRI**



**Steve Kerber**

## Vice President and Executive Director

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.

 0000-0002-4951-6927



### EXPLORE

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# Attachment 3

Kerber, Stephen			Vice President & Executive Director, Fire Safety Research Institute
UL Research Institutes			
University of Maryland, College Park	BS	2003	Fire Protection Engineering
University of Maryland, College Park	MS	2005	Fire Protection Engineering
Lund University, Lund, Sweden	Ph.D.	2020	Fire Safety Engineering

Licensed Professional Engineer, State of Maryland 36808

### Positions

2019 – Present Vice President, UL Research Institutes, Columbia, MD, USA  
2013 – Present Executive Director, Fire Safety Research Institute  
UL Research Institutes, Columbia, MD, USA  
2009 – 2013 Research Engineer  
Underwriters Laboratories Inc., Northbrook, IL, USA  
2002 – 2008 Fire Protection Engineer  
National Institute of Standards and Technology, Gaithersburg, MD, USA  
1999 – 2009 Deputy Chief  
College Park Volunteer Fire Department, College Park, MD, USA

### Service

Society of Fire Protection Engineers – Fellow, Director, Board of Directors (2012-2017)  
National Fire Protection Association - Member, Research Section Executive Committee, Fire Service Training Technical Committee (2008), Fundamentals of Fire Control Within a Structure Utilizing Fire Dynamics (2015-Present), Fire Investigations Committee (2017-Present)  
International Association for Fire Safety Science - Member  
International Association of Fire Chiefs - Regular Member, Volunteer and Combination Officer Section  
International Society of Fire Service Instructors – Member  
University of Maryland Fire Protection Engineering Department - Board of Visitors

### Honors

University of Maryland Fire Protection Engineering Distinguished Alumni, 2022  
Metropolitan Fire Chiefs President's Award of Distinction 2019  
Senator Paul S. Sarbanes Fire Service Safety Leadership Award, UL FSRI 2018  
ISFSI George D. Post Fire Service Instructor of the Year 2014  
Honorary Battalion Chief, Fire Department of New York 2012  
Department of Commerce Gold Medal Award 2008  
- Research on Wind Driven Fires and Positive Pressure Ventilation  
Department of Commerce Bronze Medal Award 2007  
- Research on Positive Pressure Ventilation in High-rise Buildings  
Department of Commerce Bronze Medal Award 2005  
- Research on the Station Nightclub Fire  
Prince George's County Fire Department Silver Medal of Valor 2002  
Fire House Magazine Heroism Award 2002

### Selected Peer Reviewed Publications

Kerber, S., Regan, J., Fent K. Horn, G., and D. Smith. "Effect of Firefighting Intervention on Occupant Tenability during a Residential Fire." *Fire Technology*, 55:2289–2316, 2019.  
Kerber, S. "Analysis of Changing Residential Fire Dynamics and its Implications on Firefighter Operational Timeframes." *Fire Technology*. Volume 48, Number 4, 2012, p 865-891.

- Kerber, S. "*Analysis of One and Two-Story Single Family Home Fire Dynamics and the Impact of Firefighter Horizontal Ventilation.*" Fire Technology, Online First 28 August 2012.
- Horn, G., Kesler, R., Kerber, S., Fent, K., Schroeder, T., Scott, W., Fehling, P., Fernhall, B. & Smith, D. (2018) Thermal response to firefighting activities in residential structure fires: impact of job assignment and suppression tactic, *Ergonomics*, 61:3, 404-419.
- Kenneth W. Fent, Barbara Alexander, Jennifer Roberts, Shirley Robertson, Christine Toennis, Deborah Sammons, Stephen Bertke, Steve Kerber, Denise Smith & Gavin Horn. (2017) Contamination of firefighter personal protective equipment and skin and the effectiveness of decontamination procedures, *Journal of Occupational and Environmental Hygiene*, 14:10, 801-814.
- Kenneth W. Fent, Douglas E. Evans, Kelsey Babik, Cynthia Striley, Stephen Bertke, Steve Kerber, Denise Smith & Gavin P. Horn (2018) Airborne contaminants during controlled residential fires, *Journal of Occupational and Environmental Hygiene*, 15:5, 399-412, DOI: 10.1080/15459624.2018.1445260
- Gavin P. Horn, Jacob W. Stewart, Richard M. Kesler, Jacob P. DeBlois, Steve Kerber, Kenneth W. Fent, William S. Scott, Bo Fernhall, Denise L. Smith "Impact of training fire environment on physiological responses" *Ergonomics*
- Alexander C. Mayer, Kenneth W. Fent, Stephen Bertke, Gavin P. Horn, Denise L. Smith, Steve Kerber, and Mark J. La Guardia "Firefighter Hood Contamination: Laundered vs. Unlaundered" Submitted to JOEH
- Kenneth W. Fent, Christine Toennis, Deborah Sammons, Shirley Robertson, Stephen Bertke, Antonia Calafat, Joachim D. Pleil, M. Ariel Geer Wallace, Steve Kerber, Denise Smith, Gavin P. Horn. "Firefighters' absorption of PAHs and benzene during controlled residential fires" Submitting to JOEH
- Nicholas Traina, Richard M. Kesler, Steve Kerber, Robin Zevotek, Tonghun Leeb, Gavin P. Horn. "Ex-vivo porcine skin model for prediction of trapped occupant burn risk applicable to pre- and post-suppression fire environments" Submitting to Fire Technology.
- Horn, Kesler, Kerber, Fent, Schroeder, Scott, Fehling, Fernhall & Smith (2017): *Thermal response to firefighting activities in residential structure fires: impact of job assignment and suppression tactic*, *Ergonomics*, DOI: 10.1080/00140139.2017.1355072
- Kerber, S., Madrzykowski, D. "*Wind Driven Structure Fire and Mitigation Strategy Experiments.*" 2009 International Symposium on Fire Science and Fire-Protection Engineering Proceedings, Beijing, China, 2009.
- Madrzykowski, D., Kerber, S., "*Fire Fighting Tactics Under Wind Driven Conditions: Laboratory Experiments.*" National Institute of Standards and Technology, NIST TN 1618, 2009.
- Kerber, S., Madrzykowski, "*Evaluating Positive Pressure Ventilation In Large Structures: School Pressure and Fire Experiments.*" National Institute of Standards and Technology, NIST TN 1498, 2008.
- Kerber, S., "*Evaluation of Fire Service Positive Pressure Ventilation Tactics on Large Structures.*" International Congress: Smoke Control in Buildings and Tunnels Proceedings, Santander, Spain, 2008.
- Kerber, S., Madrzykowski, "*Evaluating Positive Pressure Ventilation In Large Structures: High-Rise Fire Experiments.*" National Institute of Standards and Technology, NISTIR 7468, 2007.
- Kerber, S. "*Evaluation of Fire Service Positive Pressure Ventilation Tactics on High-rise Buildings.*" Interflam Proceedings 2007.
- Kerber, S., Madrzykowski, D., Stroup, D. "*Evaluating Positive Pressure Ventilation In Large Structures: High-Rise Pressure Experiments.*" National Institute of Standards and Technology, NISTIR 7412, 2007.
- Kerber, S. "*Evaluation of the Ability of Fire Dynamic Simulator to Simulate Positive Pressure Ventilation in the Laboratory and Practical Scenarios.*" National Institute of Standards and Technology, NISTIR 7315, 2006.

## Research Support

Previous research support from DHS-FEMA, National Institute of Justice, City of New York, USFA and the US Department of Commerce during tenure at NIST from 2002 – 2008

## Derek M. Alkonis

Capistrano Beach, California

**Education:** USC/LA County Executive Leadership Development Program Graduate, December 2016  
University of California, San Diego, Bachelor of Arts, Biology, 1987

**Experience:** Fire Safety Research Institute, 2012 – Present

- *Advisory Board Member, 2012 to 2021*
- *Research Program Manager, August 2021 to Present*  
Instrumental in identifying WUI as a research focus. Created strategic alliances with other WUI related policy and research organizations. WUI Advisory Committee Leader. Work closely with FD's to integrate FSRI structural firefighting tactical considerations.

Los Angeles County Fire Department, 1990 – Retired July 2021

- |      |   |          |                |
|------|---|----------|----------------|
| AC   | Air & Wildland (3 yrs), Training Services (2 yrs)           | 5 yrs    | September 2015 |
| BC   | Director of Training (3.25 yrs); Bn 11 (2 yrs)              | 5.25 yrs | April 2010     |
| CA   | FS 3 (9 yrs); WF Coordinator (2 yrs); FS 90 (1 yr)          | 12 yrs   | March 1998     |
| EN   | Training (6 mos); FS 181 (1.5 yrs); FS 14 (2 yrs)           | 4 yrs    | April 1994     |
| FFPM | FS 29 (1 yr); '93 Firestorms Report (8 mos); FS 116 (5 mos) | 2 yrs    | September 1992 |
| FF   | FS 36 (10 mos); FS 82 (7 mos); FS 10 (4 mos)                | 2 yrs    | October 1990   |
- *Additional Assignments:* OSC2t, DIVS, ICT 3, Agency Rep., Strike Team Leader, Serious Incident Report Team (SIRT) Leader, Radio Training Project Leader, Recruit Training Captain (3 classes), FF Survival Lead Instructor and Committee Director, Physical Fitness and Nutrition Committee Director.

LACoFD Leadership and Administrative Accomplishments:

*Air & Wildland, 2017-2021*

- Leader of the largest county Air & Wildland Division in the U.S.. Responsible for operational readiness and response of Aircraft (10 helicopters), Fire Suppression Camps (4 paid, 5 correctional), and Heavy Equipment (49 pieces of equipment) to wildfires in LA and adjacent counties. Worked closely with Forestry Division, USFS, and other FD agencies in developing preparedness and operational plans.

*Wildfire Staffing Augmentation Optimization Project, 2017-2021*

- Established relationship with Naval Postgraduate School, Operations Research Department. Lead role in creating computer model that calculates probability of wildfire start in 21 RAWs subareas and recommends best pre-deployment staffing options. Staffing optimization has potential to save Department millions of dollars during future wildfire seasons.

*Responding to Wildland Firefighting Board Inquires, 2017-2021*

- Composed several responses to Board of Supervisors wildland firefighting inquires, including Board Motion, "Aerial Resources to Combat Wildfires, March 2019." Also completed several Executive Staff assignments enabling better understanding and decision making of wildland firefighting topics.

*"Leading with Compassion" Training Project, 2017*

- Worked closely with UCLA PhD to develop training program to improve unbiased and compassionate leadership capacity of managers and influencers.

*Recruit Fire Fighter Hiring Surge Project, 2016 - 2017*

- Met Fire Chief's hiring goals by graduating five Recruit Fire Fighter classes in 2016 and having five classes scheduled in 2017. Effort required extensive modification to recruit class schedule and coordination of personnel needed to provide training.

*Battalion Chief and Fire Captain Academy Program Development, 2014*

- Led a team of 30 subject matter experts to develop LACoFD's first blended learning course for newly promoted Battalion Chiefs and Fire Captains. Course applies cutting edge learning principles and technologies to encourage behavioral change in the areas of leadership, management, and emergency operations.

*UL/NIST New Firefighting Tactics Training, 2013 – 2021*

- Implemented tactical changes that contributed to significant reductions in firefighter burn injuries and reduction in structure and content loss in the millions within the first two years. Team also published LACoFD's first structure firefighting policy.

*Training Video Production, 2013*

- Worked closely with Operations Deputy Chiefs, MMD and ISD to assemble a talented team of uniformed, non-uniformed, and contract personnel to assist with all facets of video production and instructional design. Fire fighters from around the world use the videos for training.

*College of the Canyons (COC), Instructional Service Agreement (ISA) Project, 2011*

- Created first-ever LACoFD training matrix identifying training topics satisfying federal, state, Insurance Service Office (ISO) and Department training requirements. Developed first LACoFD firefighter online training delivery platform. Worked closely with COC, State Fire Marshal, and Chancellor's Office of California Community Colleges to change CCR Title V, ISA synchronous rule to asynchronous.

*IAFF Fire Ground Survival Development and Implementation, 2007*

- Wrote grant to secure funds for development of the fire service's first international Fire Ground Survival Program. Assigned as Lead Investigator. Worked closely with NIOSH, NIST, NFA, NFPA, IAFC, IAFF and numerous FD's within U.S. & Canada to complete the comprehensive course.

*Peer Fitness Trainer (PFT) Development and Implementation, 2000 – 2007*

- One of two IAFF/IAFC Fire Service Joint Labor-Management Technical Committee members assigned to research and write the internationally recognized PFT program. Collaborated with fitness organizations and fire departments from US and Canada to ensure the needs of the international fire service were addressed.

*Candidate Physical Ability Test (CPAT) Development and Implementation, 1998*

- One of two IAFF/IAFC Fire Service Joint Labor-Management Technical Committee members assigned to design the first fire service physical ability test for use by North American fire departments. Worked closely with the Department of Justice and subject matter experts to address the comprehensive needs of the fire service.

*IAFF/IAFC Wellness-Fitness Initiative (WFI), 1996 - 1998*

- Member of technical committee assigned to write the 1<sup>st</sup> edition of the WFI. WFI elements adopted into NFPA 1582 and 1583. Led a multi-disciplinary team of 10 individuals to implement the WFI within LACoFD in 1998. Initiated cardiovascular (CV) ultra-fast CT scan program with Harbor UCLA in 2000 that has resulted in more effective treatment for individuals with CV disease, and significantly faster recovery times.

*'93 and '96 Firestorms After Action Reports, 1993 – 1994, and 1996 - 1997*

- Assigned to investigate Kinneloa, Old Topanga and Calabasas wildfires and prepare comprehensive reports. Report findings resulted in improvements to local, state and federal regulations governing brush clearance, ICS organization, water systems, and mutual aid response.

**Professional:** Featured speaker at numerous fire service symposia and conferences since 1998  
Author of several articles for fire service publications since 2000  
Offered pre-publication comments on 4 book manuscripts  
IAFF Fire Ground Survival Lead Investigator, 2007 – present  
IAFF/IAFC Fire Service Joint Labor-Management Technical Committee member, 1996 – 2020

**Community:** 1988 to Present – Have served in a variety of local faith-based positions to assist members with spiritual and temporal welfare needs.

**Honors:** 2020 Fire Fighter Fitness Leadership Award recipient, First Responder Center for Excellence and Fit Fighter  
2013 Ed Bent Award recipient, California Fire Service Instructor of the Year  
2000 CSFA Award of Merit recipient  
1999 LA County Service to Children Recognition  
1990 Valedictorian, LACoFD Firefighter Recruit Class 82  
1987 UCSD Chancellor Leadership Transcript recipient



## ADAM K. THIEL

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### CAREER EXPERIENCE

#### **City of Philadelphia – Philadelphia, PA**

**May 2016-present**

**Fire Commissioner**—Responsible for the Philadelphia Fire Department's 3,488 uniformed and civilian members, deployed across 70 work locations in ~200 response units, answering 900-1100 daily (24x7x365) calls for service in one of the nation's busiest fire-EMS agencies. Appointed in 2016 as the first-ever leader from outside the organization, with a broad mandate to develop and execute a strategic transformation of a fire-EMS department with a lineage dating back to 1736. Administer a \$500M+ budget and charged with addressing every facet of protecting the 6<sup>th</sup>-largest U.S. city from fires and emergencies arising from all hazards. Sponsoring agency chief for FEMA National US&R Pennsylvania Task Force One. Primary appointment as a deputy managing director (deputy city/county manager).

**Director, Office of Emergency Management**—Directed, from 2019-2022, the city's comprehensive emergency management portfolio in collaboration with partner agencies from law enforcement, infrastructure, transportation, and other domains. Function as the principal point of contact for federal, state, and regional (multi-state) disaster prevention, mitigation, response, and recovery activities.

#### **Commonwealth of Virginia – Richmond, VA**

**2014-2016**

**Deputy Secretary of Public Safety and Homeland Security**—Appointed by the Governor to help provide leadership, strategic direction, policy advice, management oversight, and operational coordination for the largest cabinet-level office in state government, comprised of eleven agencies with an overall budget of more than \$3B and 30,000 employees deployed across 42,000+ square miles serving a population of 8.5+ million. Direct responsibility for the Departments of: Emergency Management, Fire Programs (including the State Fire Marshal's Office), Military Affairs (Virginia Army and Air National Guard), and State Police, along with the state's Homeland Security and Resilience portfolio. Served as the Governor's deputy Homeland Security Advisor (dHSA), deputy Chief Resilience Officer (dCRO), Statewide Interoperability Coordinator (SWIC), and FirstNet State Single Point of Contact (SPOC). Facilitated the *Secure Commonwealth Panel and Rail Safety/Security Task Force*, co-led the state's *National Disaster Resilience Competition (NDRC)* project team to a \$120M dollar Housing and Urban Development (HUD) grant award, and collaborated with local, state, federal, military, and other stakeholders in managing all aspects of Virginia's homeland security enterprise, including cybersecurity consequence management, unmanned systems deployment, and critical infrastructure protection. Also served as the Governor's liaison to the U.S. Department of State's *Foreign Affairs Security Training Center* project, senior advisor to the *Virginia 9-1-1 Services Board*, public safety liaison to the *Virginia Cyber Commission*, executive sponsor of the *Virginia Cyber Response Working Group*, and principal investigator for a Department of Homeland Security (DHS)-funded *Regional Resilience Dashboard* project, and a member of the: *National Capital Region (NCR) Homeland Security Executive Committee*, *DHS Domestic Nuclear Detection Office (DNDO) Executive Steering Committee*, *Virginia Aviation Security Committee*, *Virginia Area Maritime Security Executive Committee*, *Virginia IT Infrastructure Sourcing Program Steering Committee*, *FBI Joint Terrorism Task Force (JTTF) Executive Committee*, and *DHS Non-Traditional Aviation Technology (NTAT) Threat Task Force*. Provided direct advice and cross-cabinet coordination to the Governor and cabinet members during statewide emergencies and disasters of all types.

#### **Alexandria Fire Department – Alexandria, VA**

**2007-2014**

**Fire Chief**—Provided overall leadership and strategic direction for the City of Alexandria's fire/injury prevention, all-hazards emergency response, emergency medical services (EMS), building/fire code administration, and emergency management functions. As a member of the City's executive leadership team, provided policy analysis and recommendations to the city manager and city council. Participated in National Capital Region (NCR) homeland security, fire-rescue, and emergency management initiatives. Chaired the *Northern Virginia Emergency Response System (NVERS) Steering Committee*.

## ADAM K. THIEL

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### **City of Goodyear Fire Department – Goodyear, AZ**

**2004-2007**

**Deputy Chief of Emergency Services**—In a community characterized by rapid growth and a dynamic risk profile, managed the department's response to incidents arising from all hazards including wildland-urban interface fires, hazardous materials releases, and specialized rescues. Represented the City in metropolitan Phoenix regional operations, communications, safety, emergency management, and homeland security initiatives.

### **Virginia Department of Fire Programs – Richmond, VA**

**2002-2004**

**Executive Director/State Urban Services Fire Chief**—Directed the state fire agency with overall responsibility for: fire suppression, fire marshal, technical rescue, aircraft rescue and firefighting, and hazardous materials first responder training/certification; administering funding to localities for fire services training, facilities, vehicles, and equipment; conducting fire protection and homeland security policy analyses; developing/deploying public fire and life safety education statewide; providing emergency technical assistance, mobile incident support, heavy/technical rescue services, and statewide mutual-aid coordination; maintaining national accreditation and instructional quality; and fire incident reporting/analysis. Served as fire section director, emergency services branch chief, and human services branch chief during Virginia's response/recovery to Hurricane Isabel. Participated at the policy and operational levels during several other disasters and multi-agency, multi-jurisdictional exercises. Member of the *Commonwealth Preparedness Working Group*, *Virginia Emergency Response Council*, *State Hazardous Materials Emergency Response Advisory Committee*, *Critical Infrastructure Working Group*, and *Child Day-Care Council*.

### **Fairfax County Fire and Rescue Department – Fairfax, VA**

**1995-2002**

**Firefighter/Hazmat Technician/Paramedic/Fire Lieutenant**—Provided leadership and initial incident command for a skilled team of firefighter/EMTs and hazardous materials technicians. Regularly functioned as the hazmat team leader for Fairfax County. Participated in a variety of task forces, committees, exercises, and work groups. Adjunct instructor for the Fairfax County Fire-Rescue Academy.

### **New Hope Fire Department—Orange & Durham Counties, NC**

**1994-1995**

#### **Firedriver/EMT-D**

Part-time firefighter and volunteer deputy chief in a combination fire-EMS department.

### **Redwood Fire Department – Durham, NC**

**1993-1995**

**Firedriver/EMT-D**—Operated fire apparatus; performed firefighting, rescue, and EMS duties; supervised volunteers in the absence of command staff; trained career and volunteer members; and maintained facilities and equipment.

## **CONSULTING EXPERIENCE**

### **FACETS Consulting, LLP – Phoenix, AZ**

**2006-present**

**Founding Partner**—Of a management consultancy with capabilities including: crisis management; public safety analytics; disaster preparedness; hazardous materials mitigation; homeland security assessment; occupational safety/health; curriculum design; leadership/command training; strategic planning; project management; policy analysis; and organizational development. Clients include international organizations, federal/state/local government agencies, educational institutions, non-profits, and Fortune 500 firms.

### **A-K Thiel Ltd. – Fairfax, VA**

**1999-2002**

**President**—And founder of a research and education firm with expertise applying data analysis, information technology, curriculum development, needs assessment, quality assurance, risk management, front-line leadership, and instructional best practices to real-world public safety challenges. Clients included national organizations, federal agencies, and educational institutions.

## ADAM K. THIEL

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**TriData Corporation – Arlington, VA**

**1996-1999**

**Research Analyst/Deputy Project Manager**—For a range of fire and emergency service-related projects for clients including the Federal Emergency Management Agency (FEMA), United States Fire Administration (USFA), District of Columbia (DC) Fire-EMS Department, Chicago (IL) Fire Department, Nashville (TN) Fire Department, York Region (Ontario) Fire Service, and Palm Beach County (FL) Fire-Rescue Service.

### TEACHING EXPERIENCE

**Georgetown University – Washington, DC**

**2022-present**

**Adjunct Faculty**—Teach courses in the graduate Emergency and Disaster Management degree programs.

**George Mason University – Fairfax, VA**

**2008-present**

**Adjunct Faculty**—Develop and teach *Administration in Public and Nonprofit Organizations*, *Emergency Planning and Preparedness*, and *Disaster Response Operations and Recovery* courses for the Master's in Public Administration (MPA) degree program.

**Arizona State University, Polytechnic Campus – Mesa, AZ**

**2006-2010**

**Faculty Associate**—Developed and taught graduate-level fire service administration courses, including: *EMS Administration*; *Fire Department Budgeting and Finance*; *Special Operations Administration*; and *Fire Service Leadership*. Taught undergraduate fire service management courses such as *Incident Management and EOC Operations*.

**Cogswell Polytechnical College – Sunnyvale, CA**

**2006-2010**

**Adjunct Faculty**—Taught courses in the fire science bachelor's degree-at-a-distance program including *Managerial Issues of Hazardous Materials* and *Applications of Fire Research*.

**Grand Canyon University – Phoenix, AZ**

**2005-2006**

**Online Faculty**—Taught online courses in the graduate-level Executive Fire Leadership program, including: *Community and Human Service Delivery*; *Strategic Planning for the Fire Service*; *Organizational Behavior*, and *Public Policy*.

**Northern Virginia Community College – Annandale, VA**

**2001-2002**

**Adjunct Assistant Professor**—Developed and taught *Urban Fire & Risk Analysis*, *Hazardous Materials Response*, and *Fundamentals of Hazardous Materials* courses.

**Durham Technical Community College – Durham, NC**

**1994-1995**

**Instructor**—Coordinated and instructed fire, rescue, and emergency medical service classes including an emergency medical technician course for Duke University students.

### VOLUNTEER SERVICE

**Boys & Girls Clubs of Philadelphia — Philadelphia, PA**

**2019-present**

Board member

**American Red Cross of Eastern Pennsylvania – Philadelphia, PA**

**2016-present**

Board member

**Philadelphia Police Athletic League – Philadelphia, PA**

**2016-present**

Board member

## **ADAM K. THIEL**

**New Hope Fire Department— Orange & Durham Counties, NC** **1992-1995**  
Firefighter, captain, and deputy chief of a municipally funded fire-rescue department with eight part-time employees and 40 active volunteers. Served as an elected member of the board of directors.

**Orange County Dive SAR Team – Hillsborough, NC** **1995**  
Divemaster, training coordinator, and charter member of an underwater search and recovery team.

**Orange County HAZMAT Team – Hillsborough, NC** **1993-1995**  
Member of a countywide hazardous materials response unit.

**Cabin John Park Volunteer Fire Department – Potomac, MD** **1992-1995**  
Firefighter/rescuer II in a combination career/volunteer fire-rescue department.

### **ELECTED POSITIONS**

**Fairfax County Uniformed Retirement Board** **1998-2002**  
Trustee and fiduciary for the Fairfax County Uniformed Retirement System, a public pension fund with more than \$650 million in assets.

**Fairfax County Professional Fire Fighters and Paramedics, IAFF Local 2068** **1998-2002**  
Executive board member for a labor union representing more than 1,000 active and retired members of the Fairfax County Fire and Rescue Department. Served as a charter member of the human relations committee.

### **EARNED DEGREES**

**London School of Economics and Political Science – London, UK**

- M.Sc.—Cities

**George Mason University – Fairfax, VA**

- M.P.A.—Master's in Public Administration

**University of Maryland University College – Adelphi, MD**

- B.S.—Fire Science

**University of North Carolina – Chapel Hill, NC**

- B.A.—History

### **OTHER EDUCATION**

**University of Pennsylvania – Philadelphia, PA**

- M.Phil in Organizational Dynamics (Spring 2024)

**Arizona State University – Tempe, AZ**

- Ph.D.—Public Administration (ABD)

**George Mason University – Fairfax, VA**

- Ph.D.—Public Policy (former student)

**Harvard University – Cambridge, MA**

- Program for Senior Executives in State and Local Government

**Virginia Commonwealth University – Richmond, VA**

- Virginia Executive Institute

**Naval Postgraduate School, Center for Homeland Defense and Security – Monterey, CA**

- Executive Leaders Program (Cohort 1201)

**U.S. Army War College – Carlisle, PA**

- Commandant's National Security Program

## ADAM K. THIEL

### AWARDS, SCHOLARSHIPS, AND FELLOWSHIPS

2022 Aspen Health Innovation Fellow  
2018 Eisenhower USA Fellow  
2018 George Mason University 50<sup>th</sup> Anniversary Alumni Exemplar  
2017 Leadership Philadelphia Fellow  
2016 Virginia National Guard—Legion of Merit (civilian)  
2012 White House Fellows Program—National Finalist  
2011 Sons of the American Revolution, George Washington Chapter—Public Service Award  
2008 Wayne F. Anderson Award for Distinguished Public Service—George Mason University  
Robert E. White Memorial Scholarship—Virginia Fire Chiefs Association  
Pi Alpha Alpha—The National Honor Society for Public Affairs and Administration  
2005 International Association of Fire Chiefs Foundation Scholarship  
2004 Harvard Fire Service Fellow, USFA/IAFC/NFPA/IFSTA  
2001 Leadership Scholarship, Yvorra Leadership Development Foundation  
Academic Excellence Award, George Washington University Paramedic Education Program  
Academic Achievement Award, Fairfax County Fire and Rescue Dept. 89<sup>th</sup> Recruit School  
Richard D. Thompson Emergency Care Award, Montgomery Co. (MD) Fire-Rescue Academy

### PROFESSIONAL CREDENTIALS

Chief Fire Officer (CFO) Designation\*  
VA/NBFSPQ/IFSA Fire Fighter II  
VA/NBFSPQ/IFSA Fire Instructor II  
VA/NBFSPQ Fire Officer III  
NREMT-Paramedic\*

Certified Emergency Manager® (CEM)\*  
Fellow—Institution of Fire Engineers (FIFireE)  
Hazardous Materials Technician  
PADI Rescue Diver  
Swiftwater Rescue Technician

\* = expired

### PROFESSIONAL ASSOCIATIONS

International Association of Fire Chiefs  
Big City Emergency Managers  
National Fire Protection Association  
Metropolitan Fire Chiefs Association

American Society for Public Administration  
Section for Emergency and Crisis Management  
International Association of Emergency Managers  
Institute for Diversity & Inclusion in Emer. Mgmt.

### SECURITY CLEARANCES

U.S. Department of Homeland Security: TOP SECRET/SCI (inactive)  
U.S. Department of Defense: TOP SECRET (inactive)

### LANGUAGES

Limited command of Spanish, French, Portuguese, and German.

### ATHLETICS

Ironman Florida triathlon (2.4-mile swim, 112-mile bike, 26.2-mile run) finisher; 3-time Marine Corps Marathon finisher; Crossfit; martial arts; and yoga

## ADAM K. THIEL

### SELECTED BOARDS, COMMITTEES, AND PROJECTS

#### Department of Homeland Security, FEMA, United States Fire Administration

- *National Fire Academy Board of Visitors*, former chair
- *Fire and Emergency Services Higher Education (FESHE)*, committee member
- *National Fire Science Curriculum Committee* member
- *Personnel Management for the Fire & Emergency Services* course, curriculum reviewer
- *Disaster and Fire Defense Planning* course, subject matter expert
- *Assistance to Firefighters Grant* program, peer reviewer

#### Health and Safety Institute/24-7 FIRE

- *Program Advisory Group*, former chair

#### National Fire Protection Association (NFPA)

- *Technical Committee on Emergency Services Organization Risk Management*, chair
- *Fire Service Section* executive board, former director
- *East Coast Fire Data SME Group* member

#### International Association of Fire Chiefs

- *Labor-Management Initiative* facilitator
- *Executive Edge* faculty

#### Fire-Rescue One

- *Editorial Advisory Board* member

#### Fire 20/20: Dedicated to an Inclusive Fire and EMS Workforce by 2020

- *Board of Directors* member

#### George Washington/Auburn University, Cyber and Homeland Security Policy Institute

- *Steering Committee* member

#### American Red Cross—Alexandria Chapter

- *Chairman's Advisory Committee* member

#### International Fire Networking and Exchange (IN-FIRENET) Program

- Delegate to *The Main School of the Fire Service* in Warsaw, Poland

#### Arizona Fire Chiefs Association

- *Professional Development Section*, chair
- *Safety, Health, and Survival Section*, subcommittee chair
- *Annual Conference Planning Group* member

#### American Society for Public Administration

- *Section on Emergency and Crisis Management*, board member
- *Hurricane Katrina Advisory Group*, member

#### International Fire Service Training Association (IFSTA)

- *Emergency Management Handbook* validation committee, member

#### Underwriter's Laboratories (UL)

- *Fire Council* member
- *Firefighter Safety Research Institute*, advisory board member

#### National Fallen Firefighters Foundation (NFFF)

- *Vulnerability Assessment Project (VAP)*, principal consultant
- *Supporting the Incident Commander after a LODD* member
- *Chief to Chief LODD Network* member
- *Technology Steering Committee* member
- *Strategic Leadership Group* member

#### International Society of Fire Service Instructors (ISFSI)

- *Basement Fires Curriculum Technical Panel* member

## ADAM K. THIEL

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### **Metropolitan Fire Chiefs Association**

- *Urban Fire Forum* member
- *National SAFECOM* alternate
- *National NG911 Coalition* liaison

### **Drexel University**

- *Center for Firefighter Injury Research & Safety Trends (FIRST)* board member

### **Department of Homeland Security, Science & Technology Directorate**

- *Smart City Workshop* presenter
- *Technology Transition Working Group* member
- *Regional Resilience Dashboard* project, principal investigator

### **Homeland Security Studies and Analysis Institute**

- Senior Fellow

## **SELECTED PUBLICATIONS**

### **Fire Chief Magazine**

- *Generation Next*, multiple columns

### **International City/County Management Association**

- *Managing Fire and Emergency Services: Principles and Practice for Local Government*, 3e (co-editor)
  - *Chapter One: Contemporary Fire and Emergency Services* (author)
  - *Chapter Nine: Fire and Emergency Services Professional Development* (author)

### **International Association of Fire Chiefs/United States Fire Administration**

- *Guide to Model Policies and Procedures for Emergency Vehicle Safety* (development team)

### **Fire Engineering Magazine**

- *Leadership Lessons for the "Fire Force Twentysomethings"*—FireEngineering.com
- *Carbon Monoxide: Not Just a Winter Problem*—May 2002
- *Firefighting Considerations in "Tech Hotels"* (with Katherine Thiel)—October 2001
- *How to Protect Against SCBA Failures*—April 1998

### **Fire Engineers Journal—United Kingdom**

- *National Incident Management System (NIMS) Overview*—November 2005
- *The Training Paradox* (with Jeff Stern)—November 2001

### **University of Maryland—University College**

- *FSCN 414: Fire Dynamics* (web-based course)
- *FSCN 411: Fire Protection Structures and Systems Design* (web-based course)

### **International Association of Fire Fighters**

- *Frontline Safety* course (development team)
- *Online Hazardous Materials Safety Training Modules* (development team)
- *Hazardous Materials Training for First Responders* course (development team)
- *Emergency Response to Terrorism: Operations* course (development team)

### **United States Fire Administration**

- *Emergency Vehicle Visibility and Conspicuity Study* (principal writer)
- *Trends and Hazards in Firefighter Training*
- *Improving Firefighter Communications*
- *Developing Effective SOPs for Fire and EMS Departments* (contributing author)
- *The Prevention of Self-Contained Breathing Apparatus Failures*
- *The Aftermath of Firefighter Fatalities: Preparing for the Worst*

## ADAM K. THIEL

### SELECTED PANELS AND PRESENTATIONS

#### **International Liquid Terminals Association**

September 2020, *Partnerships in Preparedness: The Philadelphia Experience*

#### **Semiconductor Environmental Safety and Health Association**

October 2020, *Managing Incidents at High-Technology Facilities*

#### **American Association of Port Authorities, Security Committee Seminar & Exhibition, Philadelphia, PA**

July 2019, *Keynote speech*

#### **APCO International, Public Safety Broadband Summit, Arlington, VA**

May 2019, *Ground Truth: Perspectives of 9-1-1 Center Leaders* panelist

#### **Ontario Association of Fire Chiefs Association Conference, Toronto, ON, Canada**

April 2019, *Keynote speech*

#### **Volunteer Firefighters Insurance Services (VFIS) 50<sup>th</sup> Anniversary, Philadelphia, PA**

April 2019, *Keynote speech*

#### **Society of Fire Protection Engineers, Pennsylvania Chapter, Philadelphia, PA**

April 2019, *Keynote speech*

#### **American Society for Public Administration (ASPA) 2019 Conference, Washington, DC**

March 2019, *Crisis and Emergency Management Decision-making Panel* moderator

#### **Firehouse Expo 2018, Nashville, TN**

October 2018, *Keynote speech*

#### **Virginia Public Safety Equity-Diversity Conference 2018, Richmond, VA**

October 2018, *Keynote speech*

#### **Virginia Chief Fire Officer Academy, Richmond, VA**

June 2018, *Keynote speech*

#### **American Industrial Hygiene Conference & Exposition, Philadelphia, PA**

May 2018, *Mitigating Opioid Exposure Risks to First Responders* panelist

#### **Delaware State Fire School Hazmat Conference, Dover, DE**

May 2018, *Keynote speech*

#### **Villanova University Masters in Public Administration Program, Villanova, PA**

April 2018, *Keynote speech*

#### **UAE Fire Safety Forum, Dubai, UAE**

March 2018, *Keynote speech*

#### **American Society for Public Administration (ASPA) 2019 Conference, Denver, CO**

March 2018, *21st Century Threats and Integrated Emergency Operations*

#### **International Fire Safety Forum at UK Parliament, London, UK**

January 2018, *Panelist*

#### **Florida Fire Chiefs Association Executive Development Symposium, Orlando, FL**

July 2017, *Keynote speech*

#### **2017 Virginia Fallen Firefighters Memorial Service, Richmond, VA**

June 2017, *Keynote speech*

#### **Scottish Fire Symposium, Glasgow, UK**

May 2017, *Active Shooter & Kinetic Threats*

#### **Maryland Fire & Rescue Institute 2017 Chief Officers Seminar, Rockville, MD**

March 2017, *Keynote speech*

#### **Responsible Hospitality Institute 2017 Annual Meeting, Austin, TX**

February 2017, *Nightlife Crisis Management* panelist

#### **US Fire Administration Professional Development Initiative 2016 Conference, Emmitsburg, MD**

July 2016, *Keynote speech*

#### **Resilient Virginia Conference, Norfolk, VA**

March 2016, *Keynote speech*



## ADAM K. THIEL

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**American Society for Public Administration (ASPA) 2016 Conference, Seattle, WA**  
March 2016, *Managing Hometown Security—Advances in Public Safety, Emergency & Disaster Management*

**RES/CON 2016, New Orleans, LA**  
March 2016, *Resilient Infrastructure*

**AFCEA Homeland Security Conference**  
March 2014, Panelist

**Fire-Rescue International Conference 2014, Dallas, TX**  
August 2014, *Labor-Management Initiative*

**Metropolitan Fire Chiefs Association 2014 Conference, Baltimore, MD**  
June 2014, *Labor-Management Initiative*

**International Assn. of Fire Chiefs 2012 Volunteer and Combination Officers Section Symposium**  
November 2012, *Communicating Your Capabilities for Success*

**Arizona Fire Chiefs Association 2012 Desert Southwest Leadership Conference, Glendale, AZ**  
June 2012, *The New Fire Chief*

**National Fire Academy Fire & Emergency Services Higher Education 2012 Conference**  
June 2012, *Keynote speech*

**US Department of Defense, Assistant Secretary of Defense COOP Training Series, The Pentagon**  
April 2012, *Continuity of Operations Planning for Street-Level Emergency Services*

**Texas A&M University/TEEX Leadership Symposium 2012, Frisco, TX**  
January 2012, *Accountability and Public Policy: Speaking Truth to Power*

**F.I.E.R.O. Fire Station Symposium 2011, Charlotte, NC**  
November 2011, *Alternative Funding Sources for Fire Stations*

**Center for Public Safety Excellence Webinar, Fairfax, VA**  
November 2011, *Labor-Management Cooperation*

**ANSI/Homeland Security Standards Panel Workshop, Arlington, VA**  
November 2011, *Keynote Address—Homeland Security Standards in the Street*

**National Fire Academy 2011 TRADE Conference, Emmitsburg, MD**  
*Creating a Shared Professional Development Roadmap*

**2011 Homeland Security Shared Strategies Conference, Denver, CO**  
*Panelist—Regional Collaboration: The Northern Virginia Emergency Response System*

**2011 International Association of Fire Chiefs New Chiefs Leadership Symposium, Phoenix, AZ**  
*Generational Considerations*  
*Technology and the Executive*

**2010 Fire-Rescue International Conference (Intl. Assn. of Fire Chiefs), Chicago, IL**  
*Labor-Management Initiative Overview*

**2010 Arizona Fire Chiefs Association Leadership Conference, Glendale, AZ**  
*Leadership in Tough Times: You Wouldn't Like it Easy, Right?*

**April 2010 George Washington University, Homeland Security Policy Institute, Washington, DC**  
*Panelist—Improvised Explosive Devices: The Domestic Threat*

**2009 Redmond Health and Safety Symposium, Los Angeles, CA**  
*Panelist—Building codes: Making buildings safer for fire fighters and residents.*

**2008 Fire-Rescue International Conference (Intl. Assn. of Fire Chiefs), Denver, CO**  
*Training for a Safety Culture*

**2007 Redmond Health and Safety Symposium, Chicago, IL**  
*Panelist—Frontline Safety*

**2007 Mid-Atlantic Association of Fire Commissioners, Hampton, VA**  
*Keynote Address—Fire Commissions: A local-state-local perspective*

**2006 Fire/EMS User Conference (Bio-key International), Las Vegas, NV**  
*Keynote Address—Data, Information, and Opportunity*

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**2006 Fire-Rescue International Conference (Intl. Assn. of Fire Chiefs), Dallas, TX**  
*Managing Opportunity in a Complex World*  
*Implementation of Model Policies & Procedures for Emergency Vehicle Safety*

**2006 Arizona State Fire School, Mesa, AZ**  
*Survival Skills for Fire and Emergency Service Leaders*

**2006 Safety of Society (SoS) Project (Main School of the Fire Service), Warsaw, Poland**  
*Training vs. Reality: The Training Paradox*

**2006 Arizona Fire Service Institute (Arizona State University), Phoenix, AZ**  
*Managing Opportunity in a Complex World*

**2005 Arizona State Fire School, Mesa, AZ**  
*Survival Skills for Fire and Emergency Service Leaders*

**2005 Fire Department Instructors Conference (FDIC), Indianapolis, IN**  
*Training vs. Reality: The Training Paradox*

**2004 Fire Department Instructors Conference East (FDIC East), Atlantic City, NJ**  
*Training vs. Reality: The Training Paradox*

**2004 Fire and Emergency Services Higher Education Conference, National Fire Academy**  
*School Counselor Partnerships*

**14th World Conference on Disaster Management (2004), Toronto, ON, Canada**  
*Public/Private Partnerships--Panelist*

**2004 Fire Department Instructors Conference (FDIC), Indianapolis, IN**  
*Training vs. Reality: The Training Paradox*

**2004 Virginia Fire Chiefs Assn. Mid-Atlantic Expo & Symposium, Virginia Beach, VA**  
*Virginia's Emergency Response to Hurricane Isabel*

**13th World Conference on Disaster Management (2003), Toronto, ON, Canada**  
*Implementing a Common Incident Management System: Virginia's Experience*

**2003 Fire Department Instructors Conference (FDIC), Indianapolis, IN**  
*The Quest for Interoperability: Virginia's Experience*

**2003 GWU/TIEMS Transportation Safety and Security Workshop, Washington, DC**  
*The ABCs of Safely Managing Transportation-Related Emergencies: A Responder's View*

**2003 Transportation Research Board 82nd Annual Meeting, Washington, DC**  
*Panelist—Hazardous Materials Transportation Risk Management: Safety & Security*

**Johns Hopkins Education and Research Center for Occupational Safety and Health**  
*Panelist—Worker Training in a New Era: Responding to New Threats*

**E-Gov 2002, Washington, DC**  
*Panelist—Homeland Preparedness Panel: Realities and Readiness*

**2001 Fire Department Instructors Conference (FDIC), Indianapolis, IN**  
*The Training Paradox (with Jeff Stern)*

**1999 DOE/TRADE Training Development Workshop, Amarillo, TX**  
*Utilizing Advanced Training Technologies...The HAZWOPER Experience*

**George Washington University (GWU) Y2K Conference Series, Washington, DC**  
*Panelist—The Y2K and Embedded Systems Crisis*

**International Union of Operating Engineers Year 2000 Conference, Beckley, WV**  
*Fire Department Contingency Planning for Y2K and Beyond*

**1999 EPA/CEPPO Region III Conference, Washington, DC**  
*Fire Fighters and Y2K: How will it affect us? What can we do about it?*

**1998 Fire Department Instructors Conference (FDIC), Indianapolis, IN**  
*USFA Major Fire Investigation Update*

**1998 Virginia State Firefighters' Association Conference, Arlington, VA**  
*The USFA Major Fire Investigation Program—How it can help your fire department.*

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**SELECTED INTERVIEWS AND APPEARANCES**

**Television**

- CNN, *The Situation Room with Wolf Blitzer*
- PBS, *NewsHour with Judy Woodruff*
- BBC News
- 6ABC in Philadelphia
- NBC10 in Philadelphia
- FOX29 in Philadelphia
- PHL17 in Philadelphia
- NBC4 in Washington, DC
- FOX5 in Washington, DC
- WJLA Channels 7 & 8 in Washington, DC
- WUSA Channel 9 in Washington, DC

**Print**

- The New York Times
- The Wall Street Journal
- The Philadelphia Inquirer
- The Washington Post
- USA Today

**Radio**

- WAMU, *The Kojo Nnamdi Show*
- WKYW (CBS) in Philadelphia
- WHYY in Philadelphia
- WURD Radio in Philadelphia, *Let's Talk Safety* (host)

**Karl F. Fippinger, CEM, PMP**

**QUALIFICATIONS SUMMARY**

**Experienced non-profit association executive leading advocacy for resilient codes and standards with the nation's fire service and emergency management leaders.**

Mr. Fippinger brings nearly a decade of professional staff experience in national non-profit associations supporting the nation's fire service. This includes deep experience leading issue advocacy, fundraising, direct sales, donations management, revenue generation, and government relations.

- 30-year veteran of the fire, rescue, and emergency services as a chief fire officer and fire service instructor leading teams in major metropolitan combination fire and rescue systems
- Real-world crisis, command staff, EOC, and special event experience including Line-of-Duty Death (LODD) events, protocols, services, and family assistance. Exceptionally skilled and experienced with organizing and leading volunteer teams; certified to the ICS-400 level and experience leading advanced and complex incidents
- More than 25 years of public/private business leadership and management experience building strong and effective, trust-based relationships
- Deep understanding of the budget development and administration process having developed and managed strategic and operational budgets for non-profits, government organizations, and private sector commercial firms of various sizes
- Experienced in corporate imaging, sales, marketing, communication, organizing and executing industry meetings, tradeshow, as well as developing and leading special events

**PROFESSIONAL CREDENTIALS**

Project Management Professional (PMP) – Project Management Institute

Certified Emergency Manager (CEM) – International Association of Emergency Managers

**EDUCATION**

**B.A., Communication, American University, Washington, DC - 1990**

**Leadership Prince William, Prince William County (VA) - 2016**

A 10-month signature program during which participants develop personal and professional leadership skills through experiential learning about topics ranging from Economic Development & Tourism to Education, Arts & Culture, and Public Safety. The program culminates with a participant-driven and executed project to enrich the local community.

**PROFESSIONAL EXPERIENCE**

**International Code Council  
Government Relations Department  
Vice President, Fire and Disaster Mitigation**

**December 2018 to Present  
Washington, DC**

Private sector executive for a 64,000-member non-profit organization dedicated to protecting the health, safety, and welfare of people by creating safe buildings and communities through the

development of model codes and standards used in the design, build and compliance process to construct safe, sustainable, affordable and resilient structures.

#### Experience Highlights

- Develop, coordinate, direct, and implement programs related to Code Council's relationships with organizations that oversee or engage in national fire service activities, emergency management, and federal agencies with oversight of disaster preparedness and public safety.
- Principal Code Council liaison to national fire service and emergency management organizations including:
  - United States Fire Administration (USFA), Congressional Fire Services Institute (CFSI), National Fire Protection Association (NFPA), International Association of Fire Chiefs (IAFC), International Association of Fire Fighters (IAFF), National Association of State Fire Marshals (NASFM), and the National Volunteer Fire Council (NVFC).
  - Federal Emergency Management Agency (FEMA), the National Emergency Management Association (NEMA) and the International Association of Emergency Managers (IAEM)
- Featured presenter at the U.S. Fire Administrator's 2022 Summit on Fire Prevention and Control - State of Science
  - Support the planning and execution of the U.S. Fire Administration's National Fire Strategy
- Facilitate the development, adoption, inspection, and enforcement of a complete set of comprehensive, coordinated fire prevention and building safety codes.
- Plan and execute the Code Council's pre- and post-disaster assistance initiatives to assist States and local jurisdictions mitigate, prepare for, and recover from hurricanes, floods, earthquakes, wildfires, and other emergencies and disasters.

**Federal Emergency Management Agency (FEMA)**  
**National Advisory Council**  
**Appointee/Special Government Employee**

**December 2022 to Present**  
**Washington, DC**

The National Advisory Council (NAC) advises the FEMA Administrator on all aspects of emergency management, including preparedness, protection, response, recovery, and mitigation for natural disasters, acts of terrorism and other manmade disasters.

**Dewberry**  
**Emergency Management, Disaster, and Mitigation Services**  
**Senior Associate / Senior Emergency Management Specialist**

**September 2011 to November 2018**  
**Fairfax, VA**

Senior Emergency Management Specialist for a 1,800-person architectural, engineering, and consulting firm. Responsible for leading, managing, and supporting federal, state, and local emergency management projects and programs.

#### Experience Highlights

- FEMA Individual Assistance Technical Assistance Contract (IA-TAC) Regions VIII, IX, X – *Project Manager*
  - Led individual assistance program support to FEMA Headquarters and Regions VIII, IX and X for temporary housing and mass care. Temporary housing services ranged from construction programs providing temporary repairs to homes,

allowing survivors to remain in their homes, to hauling and installing manufactured housing units, either on group sites or on individual installations on private property. Mass care services included sheltering and feeding operations for responders and survivors as well as providing various basic services (basic first aid, grief counseling, veterinary services) for disaster survivors.

- VDOT Statewide Tunnels Oversight Committee Planning and Exercise Program – *Project Manager*
  - Led support for a multi-year series of emergency operations planning and exercise tasks for the Commonwealth of Virginia's tunnels, bridges, movable bridges, and ferries. This included developing and revising emergency operations plans as well as designing, developing, conducting, and evaluating exercises to test and evaluate the adequacy and effectiveness of VDOT's emergency response plans.
- VDEM/Hampton Roads Regional Catastrophic Planning Program – *Project Manager*
  - Developed and delivered a Regional Catastrophic Preparedness and Response Framework plan with hazard-specific catastrophic incident annexes for a Category 3+ hurricane, multiple improvised explosive devices (IEDs), and an aerosolized anthrax attack occurring in the Hampton Roads region. Also developed and delivered a series of 9 instructor-led training sessions throughout the Hampton Roads region to familiarize stakeholders with the document and its components.
- Virginia Governor's Office/Hampton Roads Shelter and Evacuation Gap Planning Project – *Project Manager*
  - Led a team of Dewberry emergency management professionals who conducted a complex management study and review of the Commonwealth of Virginia Emergency Operations Plan (COVEOP). Assessed the capability and compatibility of State government, to support the anticipated needs of the 22 local government entities in the Hampton Roads region during emergencies and major disasters. Developed guidance, policies, and processes to enhance State government's ability to support localities during emergencies and major disasters.

**ICF International**  
**Homeland Security and Program Management Division**  
**Project Manager**

**July 2008 to July 2011**  
**Fairfax, VA**

Project manager for a 5,000+ person consulting firm that provides advisory and implementation services to assist clients in strategy and policy analysis, program management, project evaluation, and other services.

**Experience Highlights**

- Metropolitan Washington Council of Governments (MWCOG) National Capital Region (NCR) Health and Medical Planning Project – *Project Manager*
  - Led and managed more than 15 full-time public health and emergency medical service (EMS) planners embedded within 13 public health and EMS organizations throughout the NCR
  - Supported NCR jurisdictions with the development of state, local, and regional emergency plans focusing on Public Health, EMS, and Health and Medical Surge
- FEMA Radiological Emergency Preparedness (REP) Program – *Project Management Team*
  - Certified, credentialed FEMA REP Planner and FEMA REP Evaluator

- Managed more than 35 week-long emergency preparedness exercises annually for communities surrounding the nation's licensed commercial nuclear power plants
- Supported rule-making development and revisions for *44 CFR Parts 350-354 - Review and Approval of State and Local Radiological Emergency Plans and Preparedness*
- Contributing author for Hostile Action-Based Drills and Homeland Security Exercise and Evaluation Program (HSEEP) implementation sections of FEMA REP Program Manual

**Detica (formerly DFI Government Services)**  
**Senior Associate**

**June 2007 to May 2008**  
**Arlington, VA/Washington, DC**

Provided tailored research, analysis, knowledge management, and consulting services to senior decision-makers in industry and government. Assisted U.S. government leaders in the development and implementation of national security policies and programs.

**Experience Highlights**

- DHS Lessons Learned Information Sharing (*LLIS.gov*) – *Program Manager*
  - Directed the day-to-day operations of *LLIS.gov*, the national online network of lessons learned and best practices for the emergency response and homeland security communities
- DHS/FEMA National Exercise Division Terrorism Prevention Exercise Program (TPEP) – *Project Manager*
  - Led Detica's support for a capabilities- and performance-based exercise program designed to prevent acts of terrorism and counter crosscutting criminal activities that threaten the United States

**U.S. Department of Homeland Security**  
**Exercise and Evaluation Division – Operations Branch**  
**Exercise Program Manager**

**July 2004 to June 2007**  
**Washington, DC**

Led the policy, doctrine, planning, and operational conduct of homeland security and emergency management exercises for the United States government.

**Experience Highlights**

- Government authorized representative for the National Exercise Program (NEP) and the Homeland Security Exercise and Evaluation Program (HSEEP)
  - Regularly facilitated and conducted training and preparedness exercises for homeland security and emergency management professionals at all levels of government as well as international cross-border
  - Developed, negotiated, and executed multiple task orders for firms contracted by the U.S. Government to provide direct delivery of exercise support and technical services to federal, state, and local homeland security and emergency management organizations
- Exercise Division representative to the U.S. Secret Service-chaired National Special Security Event (NSSE) Working Group and the DHS Special Events Working Group (SEWG)
  - Conducted and facilitated preparedness exercises for the annual State of the Union Address, 2004 Presidential Inaugural, Super Bowl, and other NSSE-designated special events

- Experience with Joint Field Office (JFO) and EOC operations, served as a member of the Field Operations staff in New Orleans, LA during the response to Hurricane Katrina

**Titan Corporation**

**December 2002 to July 2004**

**Program Analyst**

**Fairfax, VA**

**Emergency Management Division - Federal Programs Group**

Delivered specialized emergency management and homeland security services for FEMA, the U.S. Department of Homeland Security, and state and local customers.

**Experience Highlights**

- Led chemical and biological preparedness exercises under the Nunn-Lugar-Domenici Exercise Series
- Managed and coordinated 2003 Homeland Security Assessment and Strategy for the State of Indiana
- Designed and developed tools and resources supporting the National Incident Management System (NIMS) and the NIMS Integration Center (NIC)
  - NIMS Compliance Criteria/NIMS Compliance Assistance Support Tool
- Developed policy and doctrine for the DHS/FEMA National Emergency Response Team for the National Capital Region (ERT-N NCR)
- Developed and conducted planning meetings, assessments, and exercises for the ERT-N NCR, DHS/FEMA Region III, DHS/FEMA Region V, and DHS/FEMA Headquarters in Washington, DC

**Cygnus Business Media**

**April 2001 to January 2002**

**Show Manager**

**Fairfax, VA/Burnsville, MN**

**Firehouse Expo & Fire-Rescue West**

Member of the management team for the Cygnus public safety and security portfolio, a comprehensive, integrated marketing platform serving the nation's first responders and security industry professionals through print, online, mobile and event mediums.

**Experience Highlights**

- Responsible for developing and maintaining relationships with industry leaders in the fire, rescue and emergency services including chief officers, instructors and other nationally recognized fire, EMS and rescue personnel
- Managed two nationally recognized annual fire, rescue and emergency service conferences and trade shows
  - Firehouse Expo in Baltimore, MD
  - Fire-Rescue West (Firehouse World) in San Jose, CA
- Developed and presented continuing education programs for members of the fire, rescue, and emergency services community including classroom and hands-on training sessions
  - Topics included presentations on firefighting strategy and tactics, emergency medical response, hazardous materials incident response, chemical/biological attacks, response to terrorism and domestic preparedness



**International Association of Fire Chiefs (IAFC)  
Manager of Professional Development &  
Exhibits Manager/Professional Development Manager**

**May 1996 to April 2001  
Fairfax, VA**

Represented the leadership of firefighters and emergency responders worldwide. IAFC members are the world's leading experts in firefighting, emergency medical services, terrorism response, hazardous materials spills, natural disasters, search and rescue, and public safety policy.

**Experience Highlights**

- Developed and managed relationships with senior leaders of the fire and emergency response community
- Managed the conference and exhibits for Fire-Rescue International
  - National fire and emergency response conference and tradeshow
  - 250,000+ net square foot exhibit floor; 10,000+ attendees
  - Developed and presented continuing education programs for members of the fire, rescue and emergency services community
- Managed the Fire-Rescue Med Emergency Medical Services conference and tradeshow
- Managed the International Hazardous Materials Response Teams conference
- Helped develop and present the 1998 Conference on "Strengthening the Public Safety Response to Terrorism" that brought together public safety officials from all 120 of the nation's largest cities included in the Department of Justice Domestic Preparedness Program

**Occoquan-Woodbridge-Lorton Volunteer  
Fire Department  
Past Assistant Fire Chief**

**May 1993 to Present  
Woodbridge, VA**

As a Past Assistant Fire Chief (2009-2013) and Life Member of the organization, responded to and supervised battalion and division level responses to major fire and rescue incidents in Prince William County, VA.

**Experience Highlights**

- Routinely directed fire suppression operations, emergency medical incidents, specialized rescue operations, marine rescue operations, and hazardous materials response operations
  - Shared responsibility for supervising over 150 firefighters, paramedics, and emergency medical technicians assigned across 6 regularly scheduled duty shifts
  - Served as a media spokesperson at emergency incident scenes as needed
- Responsible for leading and managing several programs and critical functions
  - Public education and outreach program; supervised a team of public education specialists responsible for delivering fire prevention and community risk reduction programs for the community
  - Membership, Recruitment, and Retention
  - Marine Division of four fire and rescue boats
  - Communications Division; led a \$200,000+ upgrade to the department's station alerting systems
- Responded to the September 11, 2001 terrorist attack on the Pentagon. Conducted collapse rescue and shoring operations as a member of the rescue task force supporting FEMA Urban Search and Rescue (US&R), Virginia Task Force 2

- In January 2004, awarded the fire department Medal of Gallantry for “having been instrumental in rescuing and saving another from possible death while operating at great personal risk.”
  - Medal of Gallantry presented in recognition of actions taken as the officer-in-charge of the first arriving Heavy Rescue Company at a four-alarm fire in a senior living apartment complex

**Fairfax County Fire & Rescue Department**  
**Adjunct Instructor**

**October 1998 to October 2012**  
**Fairfax, VA**

Training Division Staff for the Fairfax County Fire and Rescue Department, a premier community-focused fire and rescue department that provides high quality services to protect the lives, property, and environment of the community.

Experience Highlights

- Regularly provided fire and emergency medical service course instruction to personnel within the Fairfax County Fire & Rescue system as a fire and emergency medical service lead instructor
- Delivered classroom and lecture-based instruction, hands-on practical skills instruction, supervision of live fire training in specially designed burn buildings and acquired structures, and supervision of scenario-based response operations to a variety of simulated incidents including auto accidents with injury, emergency medical service incidents, outside fires, single family and commercial building fires as well as hazardous materials incidents

**Arlington County Fire Department**  
**Volunteer Firefighter - Clarendon VFD**

**September 1991 to May 1993**  
**Arlington, VA**

Responded to fire and rescue incidents in Arlington County, VA as a member of Engine and Truck Company 74 in Clarendon.

Experience Highlights

- Completed basic recruit firefighter training
- Achieved basic firefighter proficiency to actively respond to fire and rescue incidents

**VOLUNTEER ADVISORY COUNCIL AND COMMITTEE SERVICE**

Congressional Fire Services Institute, National Advisory Committee Member

National Carbon Monoxide Awareness Association, Advisory Committee Member

Vision 20/20 Project, Advisory Council Member

**PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS**

International Association of Fire Chiefs

National Fire Protection Association

Virginia Association of Fire Chiefs (*Past*)

National Emergency Management Association

International Association of Emergency Managers

Virginia Emergency Management Association

Project Management Institute

## **SECURITY CLEARANCE**

Previously held TOP SECRET/SCI – U.S. Department of Homeland Security

## **AWARDS AND RECOGNITIONS**

Boy Scouts of America

*Eagle Scout, 1984*

American University, Washington, DC

*Outstanding Technical Achievement Award, 1990*

Occoquan-Woodbridge-Lorton Volunteer Fire Department, Woodbridge, VA

*Life Member, 2013 (20 years of service)*

*Medal of Gallantry, 2003*

*Outstanding Participation Award, 2005*

*Outstanding Participation Award, 2004*

*Outstanding Participation Award, 1998*

*Outstanding Participation Award, 1994*

## **SPECIALIZED TRAINING**

American Heart Association

*Heartsaver Cardiopulmonary Resuscitation (CPR) for Healthcare Providers*

Commonwealth of Virginia Department of Fire Programs

*Firefighter I/II/III*

*Fire Instructor I/II*

*Fire Officer I/II/III*

*Hazardous Materials Operations*

*MAYDAY Firefighter Down*

*Rapid Intervention Team (RIT)*

*Heavy and Tactical Rescue (Rope, Confined Space, Vehicle, Collapse, Trench)*

*Emergency Vehicle Operator (EVOC) Class IV*

*Emergency Vehicle Operator Instructor and Train-the-Trainer*

*Emergency Vehicle Operations (Pump Operator, Aerial Ladder Operator)*

Commonwealth of Virginia Department of Game and Inland Fisheries

*Virginia Boater Safety Course*

Commonwealth of Virginia Department of Health

*Emergency Medical Technician (EMT-B)*

*EMT State Test Site Evaluator*

Federal Emergency Management Agency (FEMA), Emergency Management Institute

*Emergency Manager: An Orientation to the Position*

*Principles of Emergency Management*

*National Incident Management System – NIMS (IS 700.A)*

*NIMS Resource Management*

*Introduction to the Incident Command System (ICS 100)*

*Incident Command System, ICS for Single Resources and Initial Action Incidents (ICS 200)*

*Incident Command System, Intermediate ICS for Expanding Incidents for Operational First Responders (ICS 300)*

*Advanced ICS for Command and General Staff, Complex Incidents and MACS for Operational First Responders (ICS 400)*

*Special Events Contingency Planning for Public Safety Agencies*

*Introduction to FEMA's Public Assistance Program*

*Résumé - Karl F. Fippinger, CEM, PMP*

*An Orientation to Community Disaster Exercises*  
*Exercise Design*  
*Exercise Evaluation and Improvement Planning*  
*Introduction to Radiological Emergency Preparedness Exercise Evaluation*  
*Radiological Emergency Preparedness (REP) Evaluation*  
*Radiological Emergency Preparedness (REP) Planning*  
*Continuity of Operations (COOP) Awareness Course*  
*Introduction to the National Infrastructure Protection Plan*  
*National Response Plan*  
*National Response Framework (IS 800.B)*

**National Fire Protection Association**  
*NFPA 1403 Lead Instructor for Live Fire Training*

**Prince William County, Virginia**  
*Critical Incident Stress Management*  
*Infection Control*  
*BLS Protocols*  
*EMS Billing/HIPAA*

**United States Coast Guard**  
*U.S. Merchant Marine Officer's License (Past)*  
*Master of Steam or Motor Vessels of not more than 50 Gross Registered Tons*  
*Inland Waters*  
*Commercial Assistance Towing*  
*Radar Observer (Unlimited)*

**United States Department of Homeland Security**  
*Homeland Security Exercise and Evaluation Program (HSEEP) Train-the-Trainer*  
*Incident Response to Terrorist Bombings Technical Operations Course*  
*Terrorism/Countering Terrorism Course*  
*WMD Incident Management/Unified Command*

**United States Fire Administration, National Fire Academy**  
*Emergency Response to Terrorism*  
*Incident Command*  
*Incident Command Instructor/Train-the-Trainer*

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# DARUS ANE

Huntington Beach, California

## Skills Summary

Eighteen years concentrated in the WUI environment in Los Angeles County and throughout the State of California. Represented Los Angeles County Fire Department as Agency Representative on major conflagrations throughout the State of California. Collaborated with Federal, State, and Local agencies under the California Disaster and Civil Defense "Master Mutual Aid Agreement". Held the positions of Incident Commander, Operations Section Chief, Branch Director, or Division/Group Supervisor on multiple WUI Incidents. Coordinate with multiple public and private agencies to meet incident objectives.

## Education

**Rancho Santiago Community College** 1990

Associate in Science Degree – Public Fire Service

**California State University Long Beach** 1984

Bachelor of Science Degree – Business Administration

**College of the Canyons** 1981

Associate in Arts Degree – General Studies

## Experience

33 years of experience with the Los Angeles County Fire Department as a firefighter, paramedic, engineer, camp foreman, captain, camp superintendent, battalion chief in structure operations, and a battalion chief in the Air and Wildland Division.

## Instructor/Mentor

Fire Academy Wildland Instructor, Foreman Training Instructor, Wildland Command Instructor

**QUALIFICATIONS (CICCS)** California incident command certification system

(DIVS) – DIVISION/GROUP SUPERVISOR, (STEN) – STRIKE TEAM LEADER ENGINE, (STCR) – STRIKE TEAM CREW, (FIRB) FIRING BOSS, (CRWB) – CREW BOSS, (ICT4) INCIDENT COMMANDER

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## Daniel J. Gorham

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### Education

M.S. Fire Protection Engineering, University of Maryland College Park, 2014

*Thesis: Studying Wildfire Spread Using Stationary Burners*

B.S. Fire Protection Engineering, University of Maryland College Park, 2012

A.A. General Studies, Community College of Baltimore County, 2010

### Professional Experience

Research Engineer

August 2022 - Present

**Underwriters Laboratories' Fire Safety Research Institute**

Columbia, MD

Plan, conduct, and communicate research projects related to wildfire-hazards to the built environment. Conduct laboratory and field experiments studying fire behavior and fire performance of building materials/assemblies of wildland-urban fire scenarios. Communicate research findings and outcomes to scientific community, public, and other stakeholders.

Research Engineer

July 2018 – August 2022

**Insurance Institute for Business & Home Safety**

Richburg, SC

Plan, conduct, and communicate research projects related to wildfire-hazards to the built environment. Conduct laboratory and field experiments on mitigation techniques from firebrands (embers) and other wildfire hazards. Communicate research findings and outcomes to insurance industry stakeholders and public.

Research Project Manager

October 2015 - June 2018

**Fire Protection Research Foundation**

Quincy, MA

Manage the technical and logistical conducting of research projects. Develop technical and financial support for Foundation projects. Facilitate research program planning in conjunction with Foundation stakeholders in order to develop research agendas and development of projects.

Associate Engineer

September 2014 - October 2015

**National Fire Protection Association**

Quincy, MA

Managed technical committee activities and projects throughout document development processing. Provided technical services to support the adoption and use of NFPA documents. Answered advisory service questions related to assigned standards.

Guest Researcher

June 2013 - August 2013

**US Forest Service Missoula Fire Sciences Laboratory**

Missoula, MT

Developed and performed experimental methods to study fire spread via flame intermittency. Assisted in performance of wind-tunnel fire spread experiments. Performed analytical and statistical analysis of experimental data. Contributed in the performance of additional large-scale experiments to study the intermittent heating from stationary fires.

Graduate Research Assistant

January 2013 - August 2014

**University of Maryland, College Park**

College Park, MD

Responsible for the technical and personnel management of multiple undergraduate research projects. Designed, developed, and used several experimental apparatus including a uniform-velocity wind

blower for studying fire dynamics and multiple controlled heat release rate burners. Established safety protocols and operating procedures including fire safety considerations for multiple fire laboratories.

## Certifications

Professional Fire Protection Engineer, California Certificate No. FP1943

## Publications

1. Quarles SL, Standohar-Alfano C, Hedayati F, **Gorham DJ** (2023) Factors influencing ember accumulation near a building. *International Journal of Wildland Fire* 32(3), 380-387. doi: 10.1071/WF22132
2. Maranghides A, Nazare S, Hedayati F, **Gorham D**, Link E, Hoehler M, Bundy M, Monroy X, Morrison M, Mell W, Bova A, McNamara D, Milac T, Hawks S, Bigelow F, Raymer B, Frievall F, Walton W (2022) Structure Separation Experiments: Shed Burns without Wind. NIST Technical Note 2235
3. Penney, G., Baker, G., Valencia, A., **Gorham, D.** (2022) The CAED Framework for the Development of Performance-Based Design at the Wildland-Urban Interface. *Fire* 5:54. doi: 10.3390/fire5020054
4. Maranghides A, Link ED, Hawks S, McDougald J, Quarles SL, **Gorham DJ**, Nazare S (2022) WUI Structure/Parcel/Community Fire Hazard Mitigation Methodology. NIST Technical Note 2205
5. Hedayati F., Bahrani B., Zhou A., Quarles S. and **Gorham D.** (2019) A Framework to Facilitate Firebrand Characterization. *Front. Mech. Eng.* 5:43. doi:10.3389/fmech.2019.00043
6. Manzello, M., Bianchi, R., Gollner, M., **Gorham, D.**, McAllister, S., Pastor, E., Planas, E., Reszka, P., Suzuki, S., Summary of workshop large outdoor fires and the built environment, *Fire Safety Journal* (2018): 76-92
7. Manzello, M., Bianchi, R., Gollner, M., **Gorham, D.**, McAllister, S., Pastor, E., Planas, E., Reszka, P., Suzuki, S., Summary of workshop large outdoor fires and the built environment, *Fire Safety Journal* (2018): 76-92
8. Tang, W., **Gorham, D.**, Finney, M., McAllister, S., Cohen, J., Forthofer, J., Gollner, M. An experimental study on intermittent extension of flames in wind-driven fires, *Fire Safety Journal* (2017): 742-748
9. Hakes, R., Caton, S., **Gorham, D.**, and Gollner, M. A Review of Pathways for Building Fire Spread in the Wildland Urban Interface Part II: Response of Components and Systems and Mitigation Strategies in the United States. *Fire Technology* (2017)
10. Caton S., Hakes, R., **Gorham D.**, Zhou, A., and Gollner, M. A Review of Pathways for Building Fire Spread in the Wildland Urban Interface Part I: Exposure Conditions. *Fire Technology*
11. Finney, M., Cohen, J., Forthofer, J., McAllister, S., Gollner, M., **Gorham, D.**, Saito, K., Akafuah, N., Adams, B., English, J. The Influence of Buoyant Dynamics on Wildfire Spread, *Proceedings of the National Academy of Science* (2015): 9833-9838

## Conference Proceedings

1. Quarles, SL., Standohar-Alfano, C., Hedayati F, **Gorham, D.**, Factors influencing ember accumulation near a building, IX International Conference on Forest Fire Research, November 2022, Coimbra, Portugal
2. Tang, W., **Gorham, D.**, Gollner, M., Forthofer, J., Finney, M., Forward pulsation behavior of wind-driven line fires, 9<sup>th</sup> U.S. National Combustion Meeting, May 2015
3. Miller, C., Gollner, M., Finney, M., **Gorham, D.**, An Investigation of Wildfire Dynamics via Fixed Inclined Burners, 9<sup>th</sup> U.S National Combustion Meeting, May 2015

4. **Gorham, D.**, Hakes, R., Singh, A., Forthofer, J., Finney, M., Gollner, M., Studying Wildland Fire Spread Using Stationary Fires, VII International Conference on Forest Fire Research, November 2014
5. Finney, M., Cohen, J., Forthofer, J., McAllister, S., Adam, B., Akafuah, N., English, J., Saito, K., **Gorham, D.**, Gollner, M., Experimental evidence of buoyancy-controlled flame spread in wildland fires, VII International Conference on Forest Fire Research, November 2014
6. **Gorham, D.**, and Gollner, M., Buoyancy-enhanced Flame Spread over Continuous Surfaces, 8<sup>th</sup> U.S. Meeting of the Combustion Institute, May 2013
7. Zhao, Z., **Gorham D.**, Gollner M., Flame Spread through Arrays of Wooden Dowels, 8<sup>th</sup> U.S. National Meeting of the Combustion Institute, May 2013

## Conference Talks

1. Wildfire Resilient Structure (WiReS) Conference, February 2023, San Diego, CA, *Wind-driven Building to Building Fire Spread: Accessory (Shed) Structures*
2. IX International Conference on Forest Fire Research, November 2022, Coimbra, Portugal, *Factor influencing ember accumulation near a building*
3. IAWF Fire Behavior and Fuels Conference, May 2019, Albuquerque, NM, *Lessons Learned from 2017 California Wildfires – Impact on the Built Environment*
4. SFPE North America Conference, October 2018, Nashville, TN, *Navigating Your Career Path*
5. IAFC WUI Conference, February 2018, Reno, NV, *Evacuation Form and Function – How much is Art, and How Much is Science?*
6. SFPE North America Conference, October 2017, Montreal, Canada, *NFPA Standards and FPRF Research Projects on Energy Storage Systems*
7. 12<sup>th</sup> International Symposium on Fire Safety Science, June 2017, Lund, Sweden, *An experimental study on intermittent extension of flames in wind-driven fires*
8. NFPA Conference, June 2017, Boston, MA, *Status Report – NFPA 1961 & Fire Hose Research*
9. NFPA Conference, June 2017, Boston, MA, *LNG Model Evaluation Protocol & Validation Database Update*
10. NFPA Conference, June 2016, Las Vegas, NV, *Fire Protection Design of Wildland-Urban Interface Communities*
11. Backyards & Beyond, October 2015, Myrtle Beach, SC, *Studying Wildland Fire Spread Using Stationary Burners*
12. Backyards & Beyond, October 2015, Myrtle Beach, SC, *Pathways to Fire Spread in the Wildland Urban Interface (WUI)*
13. The Battery Show Conference, September 2015, Novi, Michigan, *Improving the Safety of Stationary Storage Systems*
14. NFPA Conference, June 2015, Chicago, IL, *Application of Fire Protection in Wildland-Urban Interface Design*
15. NFPA Conference, June 2015, Chicago, IL, *What you need to know about NFPA & Energy Storage Systems*
16. Conference on Fire Suppression Detection and Signaling (SUPDET), March 2015, *Application of Fire Protection in Wildland Urban Interface (WUI) Design: Hazard Definition and Current Practices*
17. VII International Conference on Forest Fire Research, November 2014, Coimbra, Portugal, *Studying Wildland Fire Spread Using Stationary Fires*

## Professional Associations

Society of Fire Protection Engineers (SFPE), *Professional Member*



- Member, Committee on Research, Tools and Methods
- Member, Committee on Continuing Professional Development
- Member, Emerging Professionals of SFPE

SFPE Foundation WUI Working Group, *Member*

National Fire Protection Association (NFPA), *Member*

- Member, Technical Committee on Wildland and Rural Fire Protection

International Association of Fire Safety Science (IAFSS), *Member*

- Member, Working Group on Large Outdoor Fires and the Built Environment

American Society for Testing and Materials (ASTM), *Member*

- Member & Secretary, E05.14 Subcommittee on Exterior Fires

International Association of Wildland Fire, *Member*

International Standards Organization, *Member – U.S. delegation*

- Member, TC 92/WG 14 Large Outdoor Fires and the Built Environment

## Experience

Richburg (South Carolina) Fire-Rescue Department, *Firefighter, 2019 - present*

South Carolina High School League, *Wrestling Official, 2022 - present*

Massachusetts Wildland Fire Crew, *Firefighter Type 2, 2015 - 2018*

Boston Youth Wrestling, *Assistant Coach, 2014 - 2017*

Maryland Wildland Fire Crew, *Firefighter Type 2, 2009 - 2013*

Kingsville (Baltimore County, Maryland) Volunteer Fire Company, *Firefighter/EMT, 2008 - 2013*

## Skills

Project management; Research planning and communication; Small-scale and Large-scale fire experiments – planning, instrumenting, and implementing; Data collection, interpretation, and analysis; Scientific and technical communication

## Research Interests

Firefighter and emergency responder safety; Fire behavior and fire dynamics; Fire modeling/simulation; Wildland and wildland-urban fire spread; Data science & data visualization

# Todd A. Harms

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## PROFILE

Executive level fire service professional with forty-two years of public safety service. Sixteen years as an executive level manager serving the sixth largest city in the United States and the seventh largest fire department in California. Extensive experience creating results through strategic, tactical, and task level leadership. Committed to creating an environment that instills trust, clear communication, responsibility, support and excellent customer service. Diverse and comprehensive experience managing dispatch and deployment, safety, personnel, training, EMS, operations, wildland, special operations and administration. Excellent communication skills with well developed public speaking and training at the local, national and international levels.

## PROFESSIONAL CAREER HISTORY -

### *Fire Chief Sacramento Metropolitan Fire District 2016-2022*

- The Sacramento Metropolitan Fire District, "Metro Fire," serves a population of over 720,000 in a 359 square mile service area. Metro Fire is the 7th largest fire agency in the State of California with a current the budget of \$290 million.
- From 2017 to 2021 Metro Fire supported nine of the ten largest wildland fires in California history. Due to the magnitude of these incidents, unprecedented resources were required. Metro Fire sent personnel including firefighters, Command Officers, and specialty personnel in addition too fire apparatus and air support.
- Chair of the Sacramento County Fire Chief Association in 2017 and 2021.
- California Fire Chief Association
  - Chair of the California Metro Fire Chief Section 2020-2022.
- Member of Emergency Medical Services Authority advisory council.
- California Homeland Security Committee member.
  - Level Secret clearance through the FBI.
- Completed a Community Risk assessment funded by Assistance to Firefighters Fire Prevention and Safety Grant program.
- Cap-to-Cap Program lead, 2017-2022
  - A Public Safety lead for the Sacramento Metro Chamber. A delegation of hundreds of area officials and business leaders who travel to Washington, D.C., and meet with federal representatives. The Capitol-to-Capitol program is meant to secure funding and resources for high-priority projects in the region and raise local concerns to officials at the national level.

*Assistant Chief of Operations, Training, EMS, Special Operations, IT, and 911-- 2013 - 2016*

- Overall leadership and responsibility for Fire, EMS, and emergency response 24-7. Including 58 Fire stations, 65 Engine, 14 ladders, 3 Squads, and 35 ambulances.
- Senior Advisor for the Incident Command team on greater alarm incidents.
- Co-chair of the Labor Management Deployment committee.
- Overall responsibility for the management of the Operations division budget.
- Managed the dispatch center that dispatches for 26 regional fire departments and the dispatching of 344,206 calls per year.
- Responsibility for department wide training for 1600 operational members, emergency medical service for basic EMT's and paramedics, command officer training and special operations training.
- Management of Special Operations including hazardous materials response, technical rescue, wildland deployment, and the state wide rapid response team.
- Overall training and management responsibility for emergency medical services. Including initial paramedic training and continuing education for 1800 certifications.
- Co-Chair of the department's Training Labor Management Committee
- Overall responsibility for maintaining and planning future improvements for the Technical Services Section, including Information Technology for the fire department and the Computer Aided Dispatch system for 26 valley fire departments.
- Senior management team representative for the procurement of a new dispatch system.
- Leadership level member of a type III Incident Management Team (IMT) on a 21 day deployment to New York City following Hurricane Sandy.
- Overall responsibility for the management of the Training division budget.
- Management of the Maricopa Regional Enhanced 911 system and the 26 Public Safety Answering Points.

*Chair of the Central Arizona Life Safety System Response Council (CALSSRC) -- 2013 - present*

- Management of the CALSSRC which is comprised of fire chiefs of 30 fire departments in the Phoenix metropolitan area. The council is a consortium of governments (cities, towns, and fire districts) joined by an inter-governmental agreement (IGA). The participants agree to act as one entity for the purpose of improved fire / rescue / emergency medical services. The system provides the closest most appropriate fire service resource regardless of jurisdictional boundaries.
- Committee member of the Arizona Fire Service Institute, who identify core legislative initiatives and publish a legislative agenda each year.

*Assistant Chief of Personnel -- 2010 - 2013*

- Primary responsibility for personnel matters in support of 2000 members of the fire department.
- Responsible for liaison functions with City Human Resource, Equal Opportunity, and Law department.
- Represented the Fire Chief in administering the personnel section and legal matters.
- Maintained strong relationships with four labor unions.

- Represented the fire department during key labor contract negotiations.
- Managed the Public Affairs Section which included Public Information Officers and Community Education Specialist.
- Co-Chaired the department Labor Management Personnel committee.
- Overall responsibility for the management of the Personnel Division budget.
- Programmed and hosted a weekly 30 minute radio show on KTAR addressing topics within the fire service.

*Assistant Chief of Operations -- 2007 - 2010*

- Overall leadership and responsibility for Fire, EMS, and emergency response 24-7. Including 58 Fire stations, 65 Engine, 14 ladders, 3 Squads, and 35 ambulances.
- Senior Advisor for the Incident Command team on greater alarm incidents.
- Co-chair of the Labor Management Deployment committee.
- Managed the EMS service delivery system and the upgrade of all engines and ambulances to ALS service capabilities.
- Overall responsibility for the management of the Operations division budget.
- Responsible for planning and budgeting for department wide training.
- Managed the dispatch center that dispatches for 26 regional fire departments.

*South Deputy Shift Commander -- 2006 - 2007*

- City wide responsibility for Fire, EMS, and emergency response for a 24 hour shift.
- Senior Advisor for Incident Command Team on greater alarm incidents.
- Primary responsibility for personnel management for the shift.
- Managed city wide shift staffing of all companies and the co-management of the constant staffing budget.
- Provided critiques of incident scenes and recommendations for improvement.
- Responded and provided strategic level direction for greater alarms incidents for 28 valley fire departments.

*North Deputy Shift Commander -- 2005 - 2006*

- City wide responsibility for Fire, EMS, and emergency response for a 24 hour shift.
- Senior Advisor for Incident Command Team on greater alarm incidents.
- Primary responsibility for personnel management for the shift.
- Responsible for planning and budgeting for department wide training.
- Provided critiques of incident scenes and recommendations for improvement.
- Co-management of the departments Command Training Center.
- Responded and provided strategic level direction for greater alarms incidents for 28 valley fire departments.

*Deputy Chief of Special Operations -- 2005*

- Hazardous Materials and Technical Rescue program management for the department and surrounding fire departments.
- Managed initial and ongoing continuing education.
- Overall responsibility for FEMA Urban Search and Rescue program management.
- FEMA USAR deployment to Hurricane Rita.
- FEMA USAR deployment to Hurricane Katrina.

- Management of the Rapid Response Team and the deployment of three new cross trained Heavy Rescues / Squads.

*Battalion Chief -- 2002 - 2005*

- Managed multiple engines, ladders, ambulances, and specialty units.
- Provided leadership for personnel assigned to fire companies.
- Command of incident scene operations.
- Department wide training development of task and tactical skills. Ten sessions per year. Including curriculum development and train the trainer responsibilities.
- Responsibility for the training budget.

*Recovery Officer for a Firefighter Fatality -- 2001 - 2002*

- Managed the investigations completed by NIOSH, Arizona OSHA, NFPA, and the department's internal investigation into the line of duty death of Firefighter Paramedic Bret Tarver on March 14, 2001.
- Developed recommendations for improved fireground operations and firefighter safety.
- Developed and implemented training for all levels of the organization.
- Authored 100 page final report detailing findings and recommendations.
- Presented recommendations, training, and operational improvements locally and nationally.

*Captain Paramedic -- 1995 - 2002*

- Company Officer / Paramedic first level supervisor.
- Emergency response service delivery for fire, EMS, and all hazards incidents.
- Management of a fire station and companies.
- Coordinated and managed six academy classes as a Recruit Training Officer.

*Phoenix Firefighter -- 1987 - 2016*

**EDUCATION, PROFESSIONAL DEVELOPMENT and ADDITIONAL CREDENTIALS**

Naval Postgraduate Center for Homeland Defense and Security

Executive Leadership Program 2019 graduate

Arizona State University -- Executive Education Program

Certified Public Manager (CPM) June 2016 graduation

Ottawa University, Ottawa Kansas

Bachelor degree in Fire Service Management

Valley Leadership

Graduate Class 27

FEMA Urban Search and Rescue

Task Force Leader and Safety Officer Certifications

National Fire Academy, Emmitsburg Maryland,

Command and Control of Fire Department Operations at Multi-Alarm Incidents

Phoenix Fire Department seminars

Incident Command, Health and Safety, and Change in the Fire Service

Phoenix Fire Department / St. Lukes Hospital

Paramedic Certification

State Fire Certifications

## Firefighter III, Instructor I and NFPA 1041

### **PRESENTATIONS, PANELS and TEACHING EXPERIENCE**

- Metropolitan Fire Chiefs and NFPA Urban Fire Forum
- Nationwide instruction for leadership and firefighter safety and survival while operating on the fireground.
- Phoenix Fire Department Training Programs instructor
- Phoenix Fire Department Command Training Center instructor
- Presenter, Firehouse World Exposition instructor and panels 2006 - present
- Presenter, Fire Department Instructors Conference (FDIC) 2002 – present
- Adjunct Instructor Phoenix College Fire Science program 2001- 2015
- Incident Command instructor for Texas A & M 2002 - 2004
- Instructor for Command School, Inc. 2002 – 2003
- Recovery Training instructor for The Phoenix Fire Department 2001-2003.
- Phoenix Fire Department IMS and Health & Safety Symposiums 1997 - 2008
- Recruit Training Officer, Phoenix Regional Training Academy 1996 – 1997
- Department wide training, Phoenix Fire Department 1990 – 1994
- District Training, Phoenix Fire Department 1994 – 2002
- Arizona State Fire School 1995 – 2000
- Various community and media interactions – Television, Radio, Newspaper, Public school etc.

### **BOARDS and COMMITTEES**

Board Member, Underwriters Laboratories Firefighter Safety Research Institute  
Technical panel member, Underwriters Laboratories for various grant projects  
Chair of the Central Arizona Life Safety System Response Council (CALSSRC)  
NFPA 1710 Past Committee Member  
NFPA 1500 Past Committee Member  
Fire Rescue Magazine editorial board  
Firehouse Magazine editorial board  
Board Member, Arizona Burn Foundation, committee chair  
Phoenix College Fire Science advisory board  
Valley Hispanic Bomero's Scholarship Committee

### **AWARDS**

Phoenix Fire Department Lifetime Achievement Award	2017
Alan V. Brunacini Service Excellence Award	2006
Phoenix Fire Department Instructor of the year	2003
City of Phoenix Excellence Award	2001
Phoenix Fire Department Official Commendation	1994
Phoenix Fire Department Individual Citation	1 1991

### **AFFILIATIONS and MEMBERSHIPS**

National Fire Protection Association  
Metropolitan Fire Chiefs Association  
National Fallen Firefighters Foundation  
Arizona Fire Chiefs Association  
International Association of Fire Chiefs

International Association of Firefighters  
Arizona Burn Foundation  
Valley Leadership  
100 Club of Phoenix

# GAVIN P. HORN

## PROFESSIONAL WORK EXPERIENCE

***UL Research Institutes***, Columbia, Maryland

Fire Safety Research Institute (FSRI)

Research Director (2023-present)

Research Engineer (2019-2023)

***University of Illinois***, Urbana-Champaign, Illinois

Illinois Fire Service Institute (IFSI), Champaign, Illinois

Adjunct Senior Research Scientist (2019-2023)

Director of Research (2008 –2019; Senior Research Scientist)

Research Program Manager (2006 –2008; Research Scientist)

Research Program Coordinator (2004 –2006; Visiting Research Scientist)

Advanced Materials Testing & Evaluation Laboratory (AMTEL), Urbana, Illinois

Senior Research Scientist (2008 –2016)

Research Scientist (2006 –2008)

Mechanical Science & Engineering, Urbana, Illinois

Visiting Lecturer (*Spring 2014, Spring 2012, Fall 2009*)

Graduate Research & Teaching Assistant (1998-2004)

***Village of Savoy Fire Department***, Savoy, Illinois

Firefighter (2005 –2019)

Engineer (2009 –2019)

Investigator (2010 –2019)

MABAS 28 Fire Investigation Team (2011 –2019)

***Ingersoll Milling Machine Company***, Rockford, Illinois

Quality Assurance Engineer (May - August 1997, January 1998)

Parts Design Engineer (May - August 1995 & 1996, January 1996 & 1997)

## EDUCATION

***University of Maryland***, College Park, Maryland

M.E., Fire Protection Engineering, May 2009

***University of Illinois at Urbana-Champaign***, Urbana, Illinois

Ph.D., Mechanical Engineering, July 2004

Dissertation title: *On Infrared Grey-Field Photoelasticity and Applications for Defect Detection in Bonded Semiconductor Devices*

Dissertation advisor: *Dr. Thomas Mackin*

M.S., Mechanical Engineering, January 2000

Thesis title: *Quantifying Damage in Polymer Matrix Composites using Thermoelastic Stress Analysis*

Thesis advisors: *Dr. Thomas Mackin and Dr. Peter Kurath*

B.S., Mechanical Engineering, January 1998

Graduated with Highest Honors, Computer Science Minor



### **FIRE SERVICE CERTIFICATIONS**

(OFFICE OF THE ILLINOIS STATE FIRE MARSHALL)

Fire Apparatus Engineer (11/10/2014)  
Firefighter III (07/22/2012)  
Hazardous Materials First Responder – Operations (07/22/2012)  
Fire Investigator (12/20/2010)  
Fire Service Vehicle Operator (11/10/2010)  
Firefighter II (06/02/07)  
Hazardous Materials Awareness (06/02/07)  
Technical Rescue Awareness (06/02/07)

### **HONORS**

International Association of Fire Chiefs, President's Award, 2023  
Alice Hamilton Award for Excellence in Occupational Safety and Health, Exposure and Risk Assessment  
Category for "Firefighters' urinary concentrations of VOC metabolites after controlled-residential and  
training fire responses", 2023  
UL Research Institutes' Innovation & Impact Award – "NFPA 1700" project, 2023  
Elected as Fellow of the Society of Fire Protection Engineers (SFPE), 2022  
William Henry Merrill Society – Distinguished Member of the Technical Staff, 2022  
Best Paper Award in *Fire Technology* for "Impact of Repeated Exposure and Cleaning on Protective Properties of  
Structural Firefighting Turnout Gear", 2021  
ISES Award for Best *Journal of Exposure Science and Environmental Epidemiology* Paper "Firefighters'  
absorption of PAHs and VOCs during controlled residential fires by job assignment and fire attack tactic",  
2021  
Bullard-Sherwood Research to Practice (r2p) Award, Knowledge category, 2020  
Dr. John Granito Award for Excellence in Fire Service Leadership and Management Research, 2019  
Alice Hamilton Award for Excellence in Occupational Safety and Health, Exposure and Risk Assessment  
Category for "Contamination of firefighter personal protective equipment and skin and the effectiveness of  
decontamination procedures", 2018  
FDIC Keynote, "Wilb's Fix-It Shop", 2018  
Chancellor's Academic Professional Excellence (CAPE) Award, 2017  
International Association of Fire Chiefs Safety, Health and Survival Section Research Award, 2016  
List of Teachers Ranked as Excellent by Their Students; *Spring 2014, Spring 2012, Fall 2009, Spring 2002, Fall  
2002, Spring 2001(Outstanding)*  
Outstanding Service Award, Savoy Fire Department, 2011  
40 Under 40, Central Illinois Business Magazine, 2011  
1<sup>st</sup> Place, 2003 SEM International Student Paper Presentation Competition, 2003  
Graduate Teaching Certificate, *Spring 2003*  
Habitat for Humanity (U of I Chapter) Golden Hammer Award, *Spring 2002*  
M&IE Alumni Board Teaching Fellow, 2002  
Mavis Memorial Scholar, 2000-2001  
SAE-FD&E Henry O. Fuchs Award Winner, 2000  
Finalist in the 1997 ASME Student Manufacturing Design Contest  
Motorola Foundation Scholarship Recipient, 1997  
Franklin Pilchard Foundation Scholarship Recipient, 1993-1997

### **PEER-REVIEWED PUBLICATIONS**

1. Horn, G.P., Dow, N.W., Newman, D.L. (2023) "Pilot Study on Fire Effluent Condensate from Full Scale Residential Fires". *Fire Technology*. DOI: 10.1007/s10694-023-01487-4
2. Mayer, A.C., Fent, K.W., Wilkinson, A.F., Chen, I-C., Siegel, M.R., Toennis, C., Sammons, D., Meadows, J., Kesler, R.M., Kerber, S., Smith, D., Masoud, F., Bhandari, D., Blount, B.C., Calafat, A.M., Wang, Y., Horn,

- G.P. (2023) "Evaluating exposure to VOCs and naphthalene for firefighters wearing different PPE configurations through measures in air, exhaled breath, and urine", *International Journal of Hygiene and Environmental Health*, 20(12), 6057. DOI:10.3390/ijerph20126057
3. Horn, G.P., Stakes K., Newman, D.L., Madrzykowski, D., Fent, K.W. (2023) "Exposure Risks and Potential Control Measures During Fire Behavior Training in a Single Compartment Structure: Part B. Chemical Gas Concentrations". *Fire Technology*, DOI: 10.1007/s10694-023-01447-y.
  4. Stakes, K., Willi, J.W., Chaffer, R., Madrzykowski, D., Horn, G.P. (2023) "Exposure Risks and Potential Control Measures During Fire Behavior Training in a Single Compartment Structure: Part A. Training Fire Thermal Risks for Instructors and Students". *Fire Technology*, DOI: 10.1007/s10694-023-01414-7.
  5. Ghanekar, S., Horn, G.P., Kesler, R.M., Rajasegar, R., Yoo, J., Lee, T. (2023) "Quantification of elevated HCN concentration typical in a residential fire environment using mid-IR tunable diode laser" *Applied Spectroscopy*, 77(4):382-392. DOI: <https://doi.org/10.1177/00037028231152498>.
  6. Wilkinson, A.F., Fent, K.W., Mayer, A.C., Chen, I-C., Kesler, R.M., Kerber, S., Smith, D.L., Horn, G.P. (2023) "Use of Preliminary Exposure Reduction Practices or Laundering to Mitigate Polycyclic Aromatic Hydrocarbon Contamination on Firefighter Personal Protective Equipment Ensembles", *International Journal of Environmental Research and Public Health*, 20(3):2108. DOI: <https://doi.org/10.3390/ijerph20032108>.
  7. Bonner, E.M., Horn, G.P., Smith, D.L., Kerber, S., Fent, K.W., Tidwell, L.G., Scott, R.P., Adams, K.T., Anderson, K.A. (2023) "Silicone passive sampling used to identify novel dermal chemical exposures of firefighters and assess PPE innovations" *International Journal of Hygiene and Environmental Health*, 248:114095. DOI: <https://doi.org/10.1016/j.ijheh.2022.114095>.
  8. Horn, G.P., Fent, K.W., Kerber, S., Smith, D.L. (2022) "Hierarchy of Contamination Control in the Fire Service: An approach to lessen exposure and mitigate cancer risk", *Journal of Occupational and Environmental Hygiene*, 19(9):538-557. DOI: 10.1080/15459624.2022.2100406.
  9. Black, T.M., Brown, L., Fent, K.W., Siegle, M.R., Horn, G.P., Jahnke, S.A., Kubiel, B.S., Graber, J.M. (2022) "Exploring Variation in Knowledge and Practice of Post-Fire Suppression Contamination Control Procedures Among New Jersey Volunteer Fire Departments: A Qualitative Study", *International Fire Service Journal of Leadership and Management*, 16:27-38.
  10. Fent, K.W., Mayer, A.C., Toennis, C., Sammons, D., Robertson, S., Chen, I-C., Bhandari, D., Blount, B.J., Kerber, S., Smith, D., Horn, G. (2022) "Firefighters' urinary concentrations of VOC metabolites after controlled-residential and training fire responses", *International Journal of Hygiene and Environmental Health*, 242:113969. DOI: 10.1016/j.ijheh.2022.113969.
  11. Ghanekar, S., Weinschenk, C., Horn, G.P., Stakes, K., Kesler, R.M., Lee, T. (2022) "Effects of HVAC on combustion-gas transport in residential structures" *Fire Safety Journal*, 128:103534. DOI: <https://doi.org/10.1016/j.firesaf.2022.103534>.
  12. Gray, S.M., Gutierrez-Nibeyro, S.D., Horn, G.P., Stewart, M., McCoy, A.M., Schaeffer, D.J. (2022) "The effect of repeated freezing and thawing on the suture pull-out strength in equine arytenoid and cricoid cartilages". *Veterinary Surgery*, 51(7):1106-1110. DOI: 10.1111/vsu.13855.
  13. Smith, D.L., Horn, G.P., Petruzzello, S.J., Freund, G.G., Bloom, S.I., Fernhall, B. (2022), "Hemostatic Responses to Multiple Bouts of Firefighting Activity: Female vs Male Differences in a High Demand, High performance Occupation", *International Journal of Environmental Research and Public Health*, 19(4):2124. DOI: 10.3390/ijerph19042124.
  14. Rowe, L.P., Kaczowski, A.J., Lin, T.-W., Horn, G.P., Johnson, H.T. (2022) "Nondestructive Photoelastic and Machine Learning Characterization of Surface Cracks and Prediction of Weibull Parameters for Photovoltaic Silicon Wafers", *Journal of Engineering Materials and Technology, Transactions of the ASME*, 144(3):031001. DOI: 10.1115/1.4052673
  15. Mayer, A., Fent, K.W., Wilkinson, A., Chen, I-C., Kerber, S., Smith, D.L., Kesler, R.M., Horn, G.P., (2022) "Characterizing exposure to benzene, toluene, and naphthalene in firefighters wearing different types of new or laundered PPE", *International Journal of Hygiene and Environmental Health*, 240:113900. DOI: 10.1016/j.ijheh.2021.11900.

16. Horn, G.P., Madrzykowski, D., Neumann, D.L., Mayer, A.C., Fent, K.W. (2022) **"Airborne Contamination during Post-Fire Investigations: Hot, Warm & Cold Scenes"**, *Journal of Occupational and Environmental Hygiene*, **19**(1):35-49. DOI: 10.1080/15459624.2021.2002343
17. Hibner, B.A., Lefferts E.C., Yan, H., Horn, G.P., Smith, D.L., Rowland, T., and Fernhall, B. (2022) **"Effect of live-fire training on ventricular-vascular coupling."** *European Journal of Applied Physiology*, **122**:591-597. DOI: 10.1007/s00421-021-04859-2.
18. Moore-Merrell, L., Kerber, S., Horn, G.P., Smith, D.L. (2021) **"Effects of Crew Size on Firefighter Health and Safety"**, *International Fire Service Journal of Leadership and Management*, **15**:7-25.
19. Gray, S. Gutierrez-Nibeyro, S., Couetil, L., Horn, G., Kesler, R., McCoy, A., Stewart, M., Schaeffer, D. (2021) **"Evaluation of the airway mechanics of modified toggle laryngoplasty constructs using a vacuum chamber airflow model"**, *Veterinary Surgery*, **50**(7):1409-1417. DOI: 10.1111/vsu.13690.
20. Mayer, A.C., Fent, K.W., Chen, I-C., Sammons, D., Toennis, C., Robertson, S., Kerber, S., Horn, G.P., Smith, D.L., Calafat, A.M., Ospina, M., Sjodin, A. (2021) **"Characterizing exposures to flame retardants, dioxins, and furans among firefighters responding to controlled residential fires"**, *International Journal of Hygiene and Environmental Health*, **236**:113782. DOI: 10.1016/j.ijheh.2021.113782.
21. Lefferts, E.C., Rosenberg, A.J., Grigoriadis, G., Wee, S.O., Kerber, S., Fent, K.W., Horn, G.P., Smith, D.L., Fernhall, B. (2021) **"Firefighter hemodynamic responses to different fire training environments"**, *Vascular Medicine*, **26**(3):240-246. DOI: 10.1177/1358863X20987608.
22. Caban-Martinez, A., Silvera, C.A., Santiago, K.M., Louzado-Feliciano, P., Burgess, J.L., Smith, D.S., Jahnke, S., Horn, G.P., Graber, J.M. (2021) **"COVID-19 Vaccine Acceptability among U.S. Firefighters and Emergency Medical Services Workers: A Cross-Sectional Study"**, *Journal of Occupational and Environmental Medicine*, **63**(5):369-373. DOI: 10.1097/JOM.0000000000002152
23. Horn, G.P., Kerber, S., Andrews, J., Kesler, R.M., Newman, H., Stewart, J.W., Fent, K.W., Smith, D.L. (2021) **"Impact of Repeated Exposure and Cleaning on Protective Properties of Structural Firefighting Turnout Gear"**, *Fire Technology*, **57**(2):791-813. DOI: 10.1007/s10694-020-01021-w.
24. Ghanekar, S., Rajasegar, R., Traina, N., Mitsingas, C., Kesler, R.M., Horn, G.P., Zevotek, R., Kerber, S., Lee, T. (2021) **"In-situ measurement of water-vapor in fire environments using a real-time tunable diode laser based system"** *Fire Safety Journal*, **120**:103114. DOI: 10.1016/j.firesaf.2020.103114.
25. Kesler, R.M., Mayer, A., Fent, K.W., Chen, I-C., Deaton, A.S., Ormond, R.B., Smith, D.L., Wilkinson, A., Kerber, S., Horn, G.P. (2021) **"Effects of firefighting hood design, laundering and doffing on smoke protection, heat stress and wearability"**, *Ergonomics*, **64**(6):755-767. DOI: 10.1080/00140139.2020.1867241
26. Mayer, A., Horn, G.P., Fent, K.W. Bertke, S., Kerber, S., Kesler, R.M., Newman, H., Smith, D.L. (2020) **"Impact of Select PPE Design Elements and Repeated Laundering in Firefighter Protection from Smoke Exposure"**, *Journal of Occupational and Environmental Hygiene*, **17**(11-12):505-514. DOI: 10.1080/15459624.2020.1811869
27. Horn, G.P., Kerber, S., Fent, K.W., Smith, D.L. (2020) **"Management of Firefighters' Chemical & Cardiovascular Exposure Risks on the Fireground"**, *International Fire Service Journal of Leadership and Management*, **14**:7-16.
28. Horn, G.P., Kerber, S., Lattz, J., Kesler, R.M., Smith, D.L., Mayer, A., Fent, K.W. (2020) **"Development of Fireground Exposure Simulator (FES) Prop for PPE Testing and Evaluation"**, *Fire Technology*, **56**(5):2331-2344. DOI: 10.1007/s10694-020-00981-3
29. Fent, K.W., LaGuardia, M., McCormick, S., Mayer, A., Chen, I-C., Kerber, S., Smith, D., Horn, G.P. (2020) **"Flame retardants, dioxins, and furans in air and on firefighters' protective ensembles during controlled residential firefighting"**, *Environment International*, **140**: 105756. DOI: 10.1016/j.envint.2020.105756.
30. Fent, K.W., Toennis, C., Sammons, D., Robertson, S., Bertke, S., Calafat, A.M., Pleil, J.D., Geer Wallace, M.A., Kerber, S., Smith, D., Horn, G. (2020) **"Firefighters' absorption of PAHs and VOCs during controlled residential fires by job assignment and fire attack tactic"**, *Journal of Exposure Science and Environmental Epidemiology*, **30**(2):338-349. DOI:10.1038/s41370-019-0145-2.

31. Smith, D.L., Horn, G.P., Fernhall, B., Kesler, R.M., Fent, K.W., Kerber, S., Rowland, T.W. (2019) **"Electrocardiographic Responses Following Live-Fire Firefighting Drills"**, *Journal of Occupational and Environmental Medicine*, **61**(12):1030-1035. doi: 10.1097/JOM.0000000000001730.
32. Traina, N., Kesler, R.M., Kerber, S., Zevotek, R., Lee, T., Horn, G.P. (2019) **"Ex-vivo porcine skin model for estimation of trapped occupant burn risk in pre- and post-suppression fire environments"**. *Fire Technology*, **55**(6):2465-2489. DOI: 10.1007/s10694-019-00876-y.
33. Kerber, S., Regan, J.W., Horn, G.P., Fent, K.W., Smith, D.L. (2019) **"Effect of Firefighting Intervention on Occupant Tenability during a Residential Fire"**, *Fire Technology*, **55**(6):2289-2316. DOI: 10.1007/s10694-019-00864-2.
34. Fent, K.W., Toennis, C., Sammons, D., Robertson, S., Bertke, S., Calafat, A.M., Pleil, J.D., Geer Wallace, M.A., Kerber, S., Smith, D.L., Horn, G.P. (2019) **"Firefighters' and instructors' absorption of PAHs and benzene during training exercises"**, *International Journal of Hygiene and Environmental Health*, **222**(7):991-1000. DOI: 10.1016/j.ijheh.2019.06.006.
35. Smith, D.L., Friedman, N.M.G., Bloom, S.I., Armero, W.L., Pence, B.D., Cook, M.D., Fernhall, B., Horn G.P., Woods, J. (2019) **"Firefighting induces acute inflammatory responses that are not relieved by aspirin in older firefighters"**, *Journal of Occupational and Environmental Medicine*, **61**(7):617-622. DOI: 10.1016/j.ijheh.2019.06.006.
36. Fent, K.W., Meyer, A., Bertke, S., Kerber, S., Smith, D., Horn, G.P. (2019) **"Understanding airborne contaminants produced by different fuel packages during training fires"**, *Journal of Occupational and Environmental Hygiene*, **16**(8):532-543. DOI 10.1080/15459624.2019.1617870.
37. Geer Wallace, M.A., Pleil, J.D., Oliver, K.D., Whitaker, D.A., Mentese, S., Fent, K.W., Horn G.P. (2019) **"Targeted GC-MS analysis of firefighters' exhaled breath: Exploring biomarker response at the individual level"**, *Journal of Occupational and Environmental Hygiene*, **16**(5):355-366. DOI:10.1080/15459624.2019.1588973
38. Horn, G.P., Stewart, J.W., Kesler, R.M., DeBlois, J.P., Kerber, S., Fent, K.W., Scott, W.S., Fernhall, B., Smith, D.L. (2019) **"Firefighter and fire instructor's physiological responses and safety in various training fire environments"**, *Safety Science*, **116**:287-294. DOI: 10.1016/j.ssci.2019.03.017
39. Geer Wallace, M.A., Pleil, J.D., Oliver, K.D., Whitaker, D.A., Mentese, S., Fent, K.W., Horn G.P. (2019) **"Non-targeted GC/MS analysis of exhaled breath samples: Exploring human biomarkers of exogenous exposure and endogenous response from professional firefighting activity"**, *Journal of Toxicology and Environmental Health, Part A*, **82**(4):244-260. DOI: 10.1080/15287394.2019.1587901
40. Mayer, A.C., Fent, K.W., Bertke, S., Horn, G.P., Smith, D.L., Kerber, S., La Guardia, M.J. (2019) **"Firefighter hood contamination: Efficiency of laundering to remove PAHs and FRs"**, *Journal of Occupational and Environmental Hygiene*, **16**(2):129-140. DOI: 10.1080/15459624.2018.1540877
41. Banerjee, R.K., Kalathil, R.T., Zachariah, S.A., Bhattacharya, A., Horn, G.P., Smith, D.L. (2019) **"Comparison between experimental and heart rate-derived core body temperatures using a three-dimensional whole body model"**, *Journal of Thermal Science and Engineering Applications*, **11**(2):024502. DOI: 10.1115/1.4041594.
42. Kesler, R.M., Bradley, F.F., Deetjen, G.S., Angelini, M.J., Petrucci, M.N., Rosengren, K.S., Horn, G.P., Hsiao-Wecksler, E.T. (2018) **"Impact of SCBA size and fatigue from different firefighting work cycles on firefighter gait"**, *Ergonomics*, **61**(9):1208-1215. DOI: 10.1080/00140139.2018.1450999.
43. Gainey, S.J., Horn, G.P., Towers, A.E., Oelschlager, M.L., Tir, V.L., Drnevich, J., Fent, K.W., Kerber, S., Smith, D., Freund, G.G. (2018) **"Exposure to a firefighting overhaul environment without respiratory protection increases immune dysregulation and lung disease risk"**, *PLoS One*, **13**(8): e0201830. DOI: 10.1371/journal.pone.0201830.
44. Angelini, M.J., Kesler, R.M., Petrucci, M.N., Rosengren, K.S., Horn, G.P., Hsiao-Wecksler, E.T. (2018) **"Effects of simulated firefighting and asymmetric load carriage on firefighter obstacle crossing performance"**, *Applied Ergonomics*, **70**:59-67. DOI: 10.1016/j.apergo.2018.02.006.
45. Park, K., Sy, J.F., Horn, G.P., Kesler, R.M., Petrucci, M.N., Rosengren, K.S., Horn, G.P., Hsiao-Wecksler, E.T. (2018) **"Assessing gait changes in firefighters after firefighting activities and while carrying asymmetric loads"**, *Applied Ergonomics*, **70**:44-50. DOI: 10.1016/j.apergo.2018.01.016.

46. Fent, K.W., Evans, D.E., Babik, K., Striley, C., Bertke, S., Kerber, S., Smith, D., Horn, G.P. (2018) **"Airborne contaminants during controlled residential fires"**, *Journal of Occupational and Environmental Hygiene*, **15**(5):399-412 DOI: 10.1080/15459624.2018.1445260.
47. Kesler, R.M., Deetjen, G.S., Bradley, F.F., Angelini, M.J., Petrucci, M.N., Rosengren, K.S., Horn, G.P., Hsiao-Weckler, E.T. (2018) **"Impact of SCBA size and firefighting work cycle on firefighter functional balance"**, *Applied Ergonomics*, **69**:112-119. DOI: 10.1016/j.apergo.2018.01.006.
48. Horn, G.P., Kesler, R.M., Kerber, S., Fent, K.W., Schroeder, T.J., Scott, W.S., Fehling, P.C., Fernhall, B., Smith, D.L. (2018) **"Thermal response to firefighting activities in residential structure fires: Impact of job assignment and suppression tactic"**, *Ergonomics*, **61**(3):404-419. DOI: 10.1080/00140139.2017.1355072
49. Kesler, R.M., Ensari, I., Klaren, R.E., Motl, R.W., Hsiao-Weckler, E.T., Rosengren, K.S., Fernhall, B., Smith, D.L., Horn, G.P. (2018) **"Physiological response to firefighting activities of various work cycles using extended duration and prototype SCBA"**, *Ergonomics*, **61**(3):390-403. DOI: 10.1080/00140139.2017.1360519
50. Secor, E.J., Gutierrez-Nibeyro, S.D., Horn, G.P. (2018) **"Biomechanical evaluation of modified laryngoplasty by use of a toggle technique for stabilization of arytenoid cartilage in specimens obtained from equine cadavers"**, *American Journal of Veterinary Research*, **79**(2):226-232. DOI: 10.2460/ajvr.79.2.226.
51. Kesler, R. M., Klieger, A. E. , Boes, M. K., Hsiao-Weckler, E. T., Klaren, R. E., Learmonth, Y., Motl, R. W. and Horn, G. P. (2017) **"Egress Efficacy of Persons with Multiple Sclerosis during Simulated Evacuations."** *Fire Technology*, **53**(6):2007-20021. doi:10.1007/s10694-017-0668-9.
52. Fent, K.W., Alexander, B., Roberts, J., S. Robertson, Toennis, C., Sammons, D., Bertke, S., Kerber, S., Smith, D., Horn, G. (2017) **"Contamination of firefighter personal protective equipment and skin and the effectiveness of decontamination procedures"**, *Journal of Occupational and Environmental Hygiene*, **14**(10):801-814 DOI:10.1080/15459624.2017.1334904
53. Traina, N., Kerber, S., Kyritsis, D.C., Horn, G.P. (2017) **"Occupant Tenability in Single Family Homes: Part II - Impact of Door Control, Vertical Ventilation and Water Application"**. *Fire Technology*, **53**(4):1611-1640. DOI: 10.1007/s10694-017-0652-4.
54. Traina, N., Kerber, S., Kyritsis, D.C., Horn, G.P. (2017) **"Occupant Tenability in Single Family Homes: Part I - Impact of Structure Type, Fire Location and Interior Doors Prior to Fire Department Arrival"**. *Fire Technology*, **53**(4):1589-1610. DOI: 10.1007/s10694-017-0651-5.
55. Ensari I., Motl R.W., Klaren R.E., Fernhall B., Smith D.L., Horn G.P. (2017) **"Firefighter exercise protocols conducted in an environmental chamber: Developing a laboratory based simulated firefighting protocol"**. *Ergonomics*, **60**(5):657-668. DOI: 10.1080/00140139.2016.1198496.
56. Kay, A.T., Durgam, S., Stewart, M., Joslyn, S., Schaeffer, D.J., Horn, G., Kesler, R. and Chew, P. (2016), **"Effect of Cortical Screw Diameter on Reduction and Stabilization of Type III Distal Phalanx Fractures: An Equine Cadaveric Study"**. *Veterinary Surgery*, **45**(8):1025-1033. DOI: 10.1111/vsu.12555.
57. Lin, T-W., Rowe, L.P., Kaczkowski, A.J., Horn, G.P., Johnson, H.T. (2016) **"Polarized light emission from grain boundaries in photovoltaic silicon."** *Extreme Mechanics Letters*, **9**P3: 397-404. doi:10.1016/j.eml.2016.04.008.
58. Willi, J.M., Horn, G.P., Madrzykowski, D. (2016) **"Characterizing a Firefighter's Immediate Thermal Environment in Live-Fire Training Scenarios"**, *Fire Technology*, **52**(6):1339-1350. DOI: 10.1007/s10694-015-0555-1.
59. Lin, T-W., Rowe, L.P., Kaczkowski, A.J., Horn, G.P., Johnson, H.T. (2016) **"Polarization-resolved imaging for both photoelastic and photoluminescence characterization of photovoltaic silicon wafers."** *Experimental Mechanics*, **56**(8):1339-1350. doi:10.1007/s11340-016-0177-7.
60. Petruzzello, S.J., Poh, P.Y.S., Greenlee, T.A., Goldstein, E., Horn, G., Smith, D.L. (2016), **"Physiological, Perceptual and Psychological Responses of Career vs. Volunteer Firefighters to Live-Fire Training Drills"** *Stress and Health*, **32**(4):328-336. DOI: 10.1002/smi.2620.
61. Smith, D.L., Horn, G.P., Woods, J.A., Ploutz-Snyder, R., Fernhall, B. (2016), **"Effect of Aspirin Supplementation on Hemostatic Responses in Firefighters Aged 40-60 Years"**, *American Journal of Cardiology*, **118**(2):275-280. doi: 10.1016/j.amjcard.2016.04.032.

62. Smith, D.L., DeBlois, J.P., Kales, S.N., Horn, G.P. (2016), "**Cardiovascular Strain of Firefighting and the Risk for Sudden Cardiac Events**", *Exercise and Sport Sciences Reviews*, **44**(3):90-97. doi:10.1249/JES.0000000000000081.
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  28. Hur, P.\*, Rosengren, K.S., Horn, G.P., Smith, D., and Hsiao-Wecksler, E.T. **"Effect of fatigue and protective clothing on functional balance of firefighters."** *17th Congress of the International Society of Electromyography and Kinesiology*, Niagara Falls, Ontario, Canada, June 18-21, 2008.
  29. Park, K.\*, Rosengren, K.S., Horn, G.P., Smith, D., and Hsiao-Wecksler, E.T. **"Assessing gait changes due to fatigue and protective clothing."** *17th Congress of the International Society of Electromyography and Kinesiology*, Niagara Falls, Ontario, Canada, June 18-21, 2008.
  30. Hur, P.\*, Rosengren, K.S., Horn, G.P., Schroeder, T., Ashton-Szabo, S.E., and Hsiao-Wecksler, E.T. **"Assessment of postural sway during multiple load and visual conditions."** *17th Congress of the International Society of Electromyography and Kinesiology*, Niagara Falls, Ontario, Canada, June 18- 21, 2008.
  31. Park, K.\*, Rosengren, K.S., Horn, G.P., Schroeder, T., Ashton-Szabo, S.E., and Hsiao-Wecksler, E.T. **"Effect of load carriage on ground reaction forces during obstacle crossing: an investigation of firefighter bottles."** *17th Congress of the International Society of Electromyography and Kinesiology*, Niagara Falls, Ontario, Canada, June 18-21, 2008.
  32. Horn, G. **"Residual Stresses and Reliability in Bonded Semiconductor Materials"**, *2008 SEM International Congress and Exposition*, Orlando, FL. (presentation only), June 2-5, 2008
  33. Smith, D.L.\*, Gutzmer, S., and Horn, G., **"Effect of On-scene Rehabilitation in Recovery from Firefighting Activity"**, Presented at the *American College of Sports Medicine's 55<sup>th</sup> Annual Meeting*, Indianapolis, Indiana, May 28-31, 2008. (D.L. Smith, S. Gutzmer, G. Horn. (2008). Effect of On-scene Rehabilitation in Recovery from Firefighting Activity. *Medicine and Science in Sports and Exercise*, **40**(5);S160.)
  34. Horn, G.\*, Ahmad, U., Assian, S., Freund, G. and Smith, D.L., **"Acute Effect of Firefighting Activity on Platelets"**, Presented at the *American College of Sports Medicine's 55<sup>th</sup> Annual Meeting*, Indianapolis, Indiana, May 28-31, 2008. G. Horn, U. Ahmad, S. Assian, G. Freund, D.L. Smith. (2008). Acute Effect of Firefighting Activity on Platelets. *Medicine and Science in Sports and Exercise*, **40**(5);S352.
  35. Goldstein, E.\*, Horn, G., Petruzzello, S., and Smith, D.L., **"Effect of Firefighting Gear on Physiological and Perceptual Responses to Short-term Fire Fighting Activity"**, Presented at the *American College of Sports Medicine's 55<sup>th</sup> Annual Meeting*, Indianapolis, Indiana, May 28-31, 2008. (E. Goldstein, G. Horn, S.

- Petruzzello, and D.L. Smith. (2008). Effect of Firefighting Gear on Physiological and Perceptual Responses to Short-term Fire Fighting Activity. *Medicine and Science in Sports and Exercise*, 40(5);S352.)
36. Horn, G.,\* Lesniak, J., and Mackin, T.J. ,**“Rapid Detection of Residual Stresses Due to Bonding Wafers with Patterned Interfacial Geometry and Random Surface Nanotopography”**, *Conference on Wafer Bonding for MEMS and Wafer Level Integration*, December 2007, Halle, Germany (keynote presentation).
  37. Johnson, D.R., Horn, G.P., Smith, D.L., and Freund, G.G.\*, **“Acute Exposure to Radiant Heat Activates Neuroimmunity”**, *Psychoneuroimmunology Research Society Meeting*, June 2007, Arcachon, France.
  38. Reiniger, D.\*, Horn, G., Mackin, T.J., Lesniak, J.R., Zhong, Y., Chu, Y.S., and Leseman, Z.C., **“Experimental Residual Stress Mapping in Bonded Semiconductor Devices”**, *2007 SEM Annual Conference and Exposition*, Springfield, MA, June 4-6, 2007.
  39. Horn, G.\*, Johnson, H., Lesniak, J., and Mackin, T., **“Quantitative Model-Based Interpretation of Experimentally Measured Nanoscale Stress Sources at Wafer Bonded Interfaces”**, *9<sup>th</sup> International Symposium on Semiconductor Wafer Bonding*, 2006, Cancun, MX (full paper published in *Electrochemical Society Transactions*, 3 (6), pp.227-238).
  40. Gilbert, J.A.\*, Petruzzello, S., Horn, G., Smith, D.L., Bell, S., Brauer, B., Glosser, K., and Schroeder, T., **“Perceptions of Fitness in Career and Volunteer Firefighters”**, *Annual Conference of the American College of Sports Medicine*, 2006, Denver, CO (abstract published in *Medicine & Science in Sports & Exercise*, 38(5), S456.).
  41. Horn, G.\*, Lesniak, J., and Mackin, T., **“Residual Stresses from Interface Defects in Wafer Bonded Silicon”**, *2006 SEM Annual Conference and Exposition*, St Louis, MO.
  42. Horn, G. \*, and Mackin, T., **“Improved Defect Detection for Adhesively Bonded Silicon Devices”**, *2004 SEM International Conference and Exposition*, Mesa, CA.
  43. Horn, G. \*, and Mackin, T., **“Nondestructive Inspection of Bonded Semiconductor Structures and Devices”**, *2003 SEM Annual Conference and Exposition*, Charlotte, NC – (1<sup>st</sup> Place, SEM International Student Paper Presentation Competition).
  44. Horn, G. \*, Mackin, T., Lesniak, J., and Boyce, B., **“A Method for Rapid, Automated, Full-field Infrared Photoelastic Stress Analysis”**, *2003 SEM Annual Conference and Exposition*, Charlotte, NC.
  45. Horn, G. \*, Mackin, T., Lesniak, J., and Boyce, B., **“IR-Photoelasticity: A New Tool for On-Line NDE in Microelectronic Materials”**, *2002 ASME International Mechanical Engineering Congress and R&D Expo*, New Orleans, LA.
  46. Horn, G. \*, Rugg, K., Berbon, M., Mackin, T., and Marshall, D., **“Damage Evolution Testing using Simultaneous Thermoelastic Stress Analysis and Speckle Interferometry”**, *2001 SEM Annual Conference*, Portland, OR.
  47. Rugg, K. \*, Berbon, M., Marshall, D., Horn, G., and Mackin, T., **“Stress and Strain Distributions in Thin C-SiC Composites”**, *2001 Meeting of the American Ceramic Society*, Cocoa Beach, FL.
  48. Horn, G. \*, and Mackin, T., **“Defining the Quality of Machined Holes”**, *2000 SEM Annual Conference*, Orlando, FL.
  49. Horn, G. \*, and Mackin, T., **“Applying Thermoelasticity to Impact-Damaged Structural Components”**, *SPIE's 5th Annual Symposium on Nondestructive Evaluation and Health Monitoring of Aging Infrastructure*, Newport Beach, CA, 2000.
  50. Horn, G. \*, Kurath, P., and Mackin, T., **“Estimating Fatigue Lifetimes of Damaged Composites Using Thermoelasticity”**, *1999 TMS Annual Conference*, San Diego, CA (Invited Paper).
  51. Horn, G. \* and Mackin, T., **“Using Thermoelasticity to Determine Machining Damage in Polymer Matrix Composites”**, *1999 SEM Annual Conference*, Cincinnati, OH.
  52. Horn, G. \*, Mackin, T., and Kurath, P., **“A New Method for Estimating Residual Fatigue Life of Impact-Damaged Polymer Matrix Composites”**, *1999 SEM Annual Conference*, Cincinnati, OH.
  53. Horn, G. \*, Roberts, M., Kurath, P., and Mackin, T., **“Quantifying Impact Damage in Polymer Composites Using TSA”**, *1998 SEM Annual Conference*, Houston, TX.

#### INVITED KEYNOTES, LECTURES AND PRESENTATIONS

1. **"Supporting Management & Leadership to Reduce Fireground Exposure Risks: A Research & Evidence-based Toolkit"**. *International Fire Service Journal of Leadership and Management - Research Symposium 19* keynote (Dr. John Granito Award for Excellence in Fire Service Leadership and Management Research). Tulsa, OK, July 13, 2019.
2. **"Wilb's Fix It"**. *Fire Department Instructors Conference (FDIC)* keynote. Indianapolis, IN, April 26, 2018.
3. **"Fireground Chemical Exposure and Protection"**. UL Furniture Flammability and Human Health Summit. Atlanta, GA; December 14, 2017
4. Sioux Falls (SD) Academy Graduation. Sioux Falls, SD; November 9, 2017
5. **"Firefighter Injury & Fatality Research at the University of Illinois Fire Service Institute"**, *International Conference on Fire Science and Technology 2016*. Chinese People's Armed Police Forces Academy. September 24, 2016.
6. **"From a Researchers Point of View – Why the Agenda Remains Vital"**, *National Fallen Firefighter Research Agenda Symposium*, Arlington, VA, November 15, 2015.
7. **"SCBA Exposure & Reliability Research at the University of Illinois Fire Service Institute"**, *NIST Fire Fighting Technology Research Seminar*, Gaithersburg, MD January 16, 2015.
8. **"Emerging Responses: Positioning First & Second Responders for Success"** *UL Lithium Ion Battery Safety Summit*, Washington, DC, December 2-3, 2014.
9. **"Overview of IFSI Physiological Firefighter Research"**, Moscow State University of Civil Engineering's International Scientific Conference on "Integration, Partnership and Innovations in Construction Sciences and Education", October 2013.
10. **"Impact on Fire Fighter PPE, Physiology and Training"** *USFA Changing Severity of Home Fires Workshop* December 2012.
11. **"Human Factors Engineering to Improve Firefighting Tools and Equipment for the Next Decade"**, *HKIE Fire Division 4<sup>th</sup> Annual Symposium 2012*. The Hong Kong Institution of Engineers. May 2012.
12. **"Engineering a Safer Fire Service at the Illinois Fire Service Institute"**, *Department of Civil and Architectural Engineering*. City University of Hong Kong. May 2012.
13. **"Firefighter Life Safety Research Studies"**, *inFIRE Conference 2011*, Champaign, IL. May 2011.
14. **"Engineering Solutions to Reduce Firefighter Injuries & Fatalities"**, *5<sup>th</sup> Conference on Fire and Fire Protection Engineering*, Guangzhou, China (keynote) December 2010.
15. **"Firefighter Health Response in Extreme Events"**, *International Conference on Disaster Mitigation through Fire Safety and Earthquake Engineering*, Gujarat, India (invited). March 2010.
16. **"Heat stress during live fire training"**, *NIOSH Fire Fighter Exposure Workshop*, Cincinnati, OH. October 28, 2009.
17. **"Rapid Detection of Residual Stresses Due to Bonding Wafers with Patterned Interfacial Geometry and Random Surface Nanotopography"**, *Conference on Wafer Bonding for MEMS and Wafer Level Integration*, Halle, Germany (keynote) December 2007.
18. **"Residual Stresses in Bonded Semiconductor Substrates: Experiments & Theory"**. *Department of Mechanical Engineering, California Polytechnic University, San Luis Obispo, CA*. March 2007.
19. **"Nondestructive Residual Life Estimation for Damaged Fiber Reinforced Polyurethane and SRIM Epoxy"**, *Spring 2000 SAE FD&E Committee Meeting*, Urbana, IL (Henry O. Fuchs Memorial Presentation).
20. **"Quantifying Impact Damage in Polymer Composites Using TSA"**, *Spring 1998 SAE FD&E Committee Meeting*, Minneapolis, MN.
21. **"A Material Handling System for Sheared Metal Blanks"**, *1997 ASME Fall Conference*, Dallas, TX (Senior Design Project - National Finalist in ASME Student Manufacturing Design Contest).

#### FIRE SERVICE LECTURES AND CLASSES

1. Firenerd Talks podcast with Lars Axelsson – Episode 21, August 10, 2020
2. 25 Live with Jim Burneka - Episode 47 July 11, 2020
3. **"Exposure Control in Fire Training"**. *Florida Fire Chiefs Association Health & Safety Conference*. Orlando, FL, December 3, 2019.

4. **"Chemical Exposures and Cardiovascular Risk in Today's Fire Service"**. *Surviving the Fire Service Symposium*. Salem, OR (May 13, 2019); Kansas City, KS (Sept 13, 2019 [+View from the Top]).
5. **"Exposure Control on the Fireground?"** *State of the Science National Firefighter Cancer Symposium 2019*. Miami, FL, June 10, 2019 with Jeff Stull and Jeramy Baum.
6. **"Fireground Exposure Risks ... What Steps Can We Take?"** *A. Michael Mullane Health and Safety Symposium*. Boston, MA, May 8, 2019.
7. **"Tactics, Practices and Policies that Can Impact your Fireground Exposure Risks"**. *Fire Department Instructors Conference*. Indianapolis, IN, April 11, 2019.
8. **"Fireground PPE Exposure and How to Mitigate Them: Update on Contamination Control"**. *FIERO PPE Symposium*. Raleigh, NC, March 13, 2019.
9. **"Current Research on Firefighter Exposures Related to Occupational Cancer"**. *Florida Fire Chiefs Association Health & Safety Conference*. Orlando, FL, December 10, 2018 with Jeff Burgess and Kenny Fent.
10. **"Cardiac and Cancer Risk in the Fire Service"**. *IAFC VCOS Symposium in the Sun 2018*. Clearwater Beach, FL, November 9, 2018.
11. **"10 Considerations related to Cardiovascular and Chemical Exposure Risk"**. *Firefighter Cancer Prevention & Mental Health Symposium 2018*. Middletown, OH, October 19, 2018.
12. **"Health and Wellness in the Fire Service - What Matters Most?"** *Firehouse Expo*. Panel discussion with Ryan Pennington, Rick Mason, Aaron Zamzow. Nashville, TN, October 18, 2018.
13. **"10 Considerations related to Cardiovascular and Chemical Exposure Risk"**. *Firehouse Expo*. Nashville, TN, October 18, 2018.
14. **"Chemical Exposures and Cancer in Today's Fire Service: Research and Lessons Related to PPE"**. Firefighter Cancer Support Network Health and Wellness Symposium. New Orleans, LA; October 4, 2018.
15. **"Contamination Control in Today's Fire Service"**. LION Personal Protective Consortium (PPC). Salt Lake City, UT; August 16, 2018.
16. **"Cancer in the Fire Service and Other Medical Issues"**. Illinois Association of Fire Protection Districts (IAFPD) Annual Conference. Peoria, IL; June 21, 2018.
17. **"Firefighter Injury & Fatality Research at the University of Illinois Fire Service Institute"**. Illinois Fire Chiefs Association (IAFC) Spring Symposium. Peoria, IL; May 17, 2018.
18. **"Science in the Big Room"**. *Fire Department Instructors Conference*. Indianapolis, IN, April 26, 2018 with Denise Smith, Steve Kerber, Kenny Fent, Robin Zevotek, and Dan Madrzykowski.
19. **"Occupational Health & Safety Research: Where are We Now and Where are We Going?"** Congressional Fire Services Institute (CFSI) Symposium. Washington, DC, April 18, 2018 with Denise Smith and Sara Jahnke
20. **"10 Considerations related to Cardiovascular and Chemical Exposure Risk"**. *Firehouse World*. San Diego, CA, March 8, 2018.
21. **"Control Interventions, Tactical Considerations"**. Ohio Fire Code Expo. Columbus, OH; February 27, 2018.
22. **"Cardiovascular and Chemical Exposure Risks in Today's Fire Service: FPE's Perspective"**. Chicago SFPE Joint Fire Service Meeting. Countryside, IL; February 5, 2018.
23. **"Contamination Control in the Fire Service"**. IAFF Cancer Summit. Lake Buena Vista, FL; February 2, 2018.
24. **"Initial Findings from the 2016 Cardiovascular and Chemical Exposure Project at the Illinois Fire Service Institute"**. British Columbia Professional Fire Fighters Association Health & Safety conference. Victoria, BC; January 9, 2018.
25. **"Cancer Research and It's Future Impacts on the Fire Service"**. Springfield Professional Fire Fighters Educational Conference. Springfield, OH, December 7, 2017 with Sean Gray and Sean DeCrane
26. **"The Latest Research in PPE"**. Firefighter Cancer Support Network Inaugural Health and Wellness Symposium. Pasadena, CA; November 30, 2017.
27. **"Implementing Tactics and Policies to Reduce Your Fireground Exposure Risks"**. Canadian Burn Symposium 2017. Winnipeg, Manitoba; September 25, 2017.
28. **"Exposures and cancer risks: What can we do NOW?"** 2017 Fire Service Occupational Cancer Symposium (NFFF). Phoenix, AZ; September 7, 2017.

29. **"Critical Lessons from the IFSI Cardiovascular & Chemical Exposure Risk Studies"** FSTAR Townhall on Fire Dynamics. Charlotte, NC; July 25, 2017 with Denise Smith.
30. **"Update from the IFSI-UL-NIOSH Study on Cardiovascular and Chemical Exposure Risks in Today's Fire Service"**. *IAFF/IAFC Wellness Fitness Initiative meeting*. Miami, FL, June 28, 2017 with Denise Smith.
31. **"Toxic Flame Retardants Discussion from IFSI-UL-NIOSH Study on Cardiovascular and Chemical Exposure Risks in Today's Fire Service"**. *NFPA Conference and Expo*. Boston, MA, June 6, 2017.
32. **"Science in the Big Room"**. *Fire Department Instructors Conference*. Indianapolis, IN, April 27, 2017 with Denise Smith, Steve Kerber, Kenny Fent, Derek Alkonis and Jerry Tracy.
33. **"Implementing Tactics and Policies to Reduce YOUR Fireground Exposure Risks"**. *Fire Department Instructors Conference*. Indianapolis, IN, April 26, 2017.
34. **"UL Fire Attack Study: Occupant Burn Risk"**. *America Burn Association*. Boston, MA, March 23, 2017.
35. **"Critical PPE Lessons from the IFSI Cardiovascular & Chemical Exposure Risks Studies"**. *FIERO PPE Symposium*. Raleigh, NC, March 20, 2017.
36. **"International Perspective on Managing Firefighter Toxic Exposures: Reducing Risk on the Fireground and in Live Fire Training"** (pre-conference workshop). *Firehouse World*. San Diego, CA, February 6, 2017 with Stefan Svensson.
37. **"Cardiovascular and Chemical Exposure Risks on Today's Fireground – Interim Report"**. *Ohio Fire Chiefs Association*. Columbus, OH, July 17-18, 2016 with BC Sean DeCrane.
38. **"Why Thinking About Fire Attack Tactics Matter"**. *IAFPD 73<sup>rd</sup> Annual Conference*, June 23-25, 2016.
39. **"Cardiovascular Disease in the Fire Service"**. *A. Michael Mullane Health and Safety Symposium*. Boston, MA, May 19-20, 2016 with Denise Smith and Stephanos Kales.
40. **"Cardiovascular and Chemical Exposure Risks on the Modern Fireground"**. *Fire Department Instructors Conference*. Indianapolis, IN, April 19, 2016 with Denise Smith, Steve Kerber, and Kenny Fent.
41. **"Cardiovascular and Chemical Exposure Risks on Today's Fireground – Interim Report"**. *Wisconsin Fire Chiefs Winter In-Service*. Columbus, OH, March 19, 2016 with BC Matt Haerter.
42. **"Firefighter's Leading Health Risks on the Modern Fireground"**. *FireHouse World*. San Diego, CA, February 2, 2016 with Denise Smith.
43. **"Firefighter Incident Rehabilitation: Reducing Risk and Increasing Performance"**. Redmond Symposium 2015 with Craig Haigh, Jennifer Groves.
44. **"Clearing the Air: What do you get for '30 Minute'?"** *Fire Department Instructors Conference*. Indianapolis, IN, April 24, 2015
45. **"Fighting Fires with More than 30 Minutes of Air"**. *FIERO PPE Symposium*. Raleigh, NC, March 2015.
46. **"Effect of Aspirin on Hemostatic and Vascular Function after Live Firefighting"**, *IAFC Webinar series "Saving Your Life Through Scientific Research"*, January 13, 2015.
47. **"Why Innovative Fire Attack Tactics Matter – A UL Study"**, *Illinois Fire Chiefs Association Volunteer Combination Officer Symposium*, October 25, 2014.
48. **"Use of Technology to Improve Firefighter Training"**, *Fire Department Instructors Conference (FDIC)*, with Dr. Denise Smith, Chief Craig Haigh, April 2013.
49. **"Escape Rope Performance in Fireground Applications"**, *University of Pittsburgh Firefighter Health & Safety Symposium*, February 2013.
50. **"Fire Service Escape Systems: Lessons learned from Development, Deployment & Research"** *Fire Rescue International (FRI)*, with George Grammas, August 2012.
51. **"Firefighter Health and Safety Research at IFSI"**, *Family Focus Day*, Chicago Fire Department and Chicago Fire Fighters' Union, Local 2 - May 2011.
52. **"Hydration & Rehab in the Fire Service"**, *41<sup>st</sup> Annual Illinois Fire Chiefs Association Symposium* –Peoria, IL May 2011.
53. **"Firefighter Health and Safety"**, *TRADE Conference*, National Fire Academy, Emmitsburg, MD - February 2011.
54. **"Effects of On-Scene Rehabilitation on Physiological Recovery from Firefighting Activities"**, *Fire Rescue International 2010*, Chicago, IL (co-taught with Denise Smith).
55. **"Reducing Line of Duty Deaths: Implementing Effective On-Scene Rehabilitation Programs"**, *IFSI Fire College 2010* – 12 hour lecture/hands-on course (co-taught with Sharon Dotson).



56. **"Heat and Heat Stress in the Fire Service"**, *IFSI Winter Fire School 2010* - 4 hour lecture course.
57. **"Firefighter Fatalities and Injuries: The Role of Heat Stress and PPE"** *NFPA Congress 2009* (co-taught with Denise Smith).
58. **"Heat Stress: The Triggering Component of Firefighter Heart Attacks and Injuries?"**, *Fire Rescue International 2008* (co-taught with Denise Smith).
59. Incorporated several modules in IFSI Firefighting and Rescue courses to include engineering concepts for the Fire Service.

#### GRADUATE STUDENT THESIS

1. Rebekah Schrader, **"Experimental Study of Heat Transfer Through Window Assemblies Under External Heat Flux"**, May 2023. University of Maryland at College Park. (Lead Advisor: Shuna Ni)
2. Tung-Wei Lin, PhD, **"Characterization of Silicon Photovoltaic Wafers Using Polarized Infrared Imaging"**, August 2015. University of Illinois at Urbana-Champaign. (Lead Advisor: Harley Johnson)
3. Robert A. Inzinga, M.S., **"On Experimental Stress Mapping and Manipulation of Etched Cavity Semiconductor Devices"**, May 2009. University of Illinois at Urbana-Champaign. (Lead Advisor: Harley Johnson)
4. Daniel Reiniger, M.S., **"On Defect Detection and Residual Stress Quantification in Bonded Semiconductor Devices"**, May 2007. University of Illinois at Urbana-Champaign. (Lead Advisor: Thomas Mackin)

#### PROFESSIONAL MEMBERSHIP

International Association of Arson Investigators  
 International Association of Wildland Fire  
 National Fire Protection Association  
 Society of Experimental Mechanics  
 Society of Fire Protection Engineers – *Fellow*

#### SERVICE

##### Professional

**National Institute for Occupational Safety & Health (NIOSH)** – Board of Scientific Counselors, 2023-present  
**Firefighter Cancer Support Network (FCSN)** - Health & Wellness Advisory Council, 2021-present  
**Fire Protection Research Foundation (FPRF)** – *Trustee*, 2015-2021  
**UL Firefighter Safety Research Institute**, *Advisory Board*, 2013-2019  
 National Fire Protection Association, *Technical Committee Member*  
     **Emergency Responder Occupational Health**, 2020-present  
     **Fundamentals of Fire Control within a Structure Utilizing Fire Dynamics**, 2015 – 2019  
     **Special Operations Protective Clothing & Equipment**, 2010 – 2019

National Fallen Firefighters Foundation (NFFF) **Technology Summit**– *Organizing Committee*, 2016  
 Firefighter Cancer Support Network (FCSN) **White Paper workshop**, 2016  
**3<sup>rd</sup> National Fire Service Research Agenda Symposium**, *Organizing Committee*, 2015  
 International Association of Fire Chiefs (IAFC) - **Researchers Creating Usable Emergency Solutions (RESCUES)** *stakeholder group*, 2014-2015  
 Fire Prevention Research Foundation (FPRF), **"Combustible Exterior Wall" project**, *Technical Panel*, 2013-2014  
 North Carolina State/Fire Prevention Research Foundation, **"Revolutionizing the Modern Turnout Suit" project**, *Technical Panel*, 2013-2017  
 NIST/Fire Prevention Research Foundation, **"Roadmap for Smart Firefighting" project**, *Technical Panel*, 2013-2014  
**2<sup>nd</sup> National Fire Service Research Agenda Symposium**, *Facilitator for Technology & Science Group*, 2011  
**Firefighter Cardiovascular Health & Safety Research Summit**, *Organizer*, 2010  
 Society of Fire Protection Engineers



**Higher Education Committee, 2009 – 2015**

Co-Chair, Masters Curriculum Task Group (2011-2013)

**Fire Service Committee, Chair 2011 – 2015, Member 2010-present**

Society of Experimental Mechanics,

**Residual Stress Technical Division**

*Vice Chair, 2009-2010*

*Secretary, 2007-2009*

*Organized Session “Residual Stress in MEMS & NEMS”, 2008, 2009*

*Session Chair (multiple sessions); 2006 - 2010*

**Editorial board service:**

- ☐ *International Fire Service Journal of Leadership and Management*, Editorial Board, 2018-present
- ☐ *Fire Protection Engineering* magazine, Editorial Advisory Board, 2013-present

Journal reviewer: *ACS Chemical Health & Safety; Analysis in Engineering Design; Applied Physics Letters; Aviation, Space, and Environmental Medicine; Engineering Structures; Environment International; Experimental Mechanics; Experimental Techniques; Fire and Materials; Fire Safety Journal; Fire Technology; International Journal of Occupational & Environmental Health; International Journal of Wildland Fire; Journal of Breath Research; Journal Of Exposure Science and Environmental Epidemiology; Journal of Occupational & Environmental Hygiene; Journal of Physics D: Applied Physics; Journal of Strain Analysis in Engineering Design; Journal of Thermal Biology; Medicine & Science in Sports & Exercise; Optics and Lasers in Engineering; Prehospital Emergency Care; Safety Science*

Proposal reviewer: *Department of Homeland Security Fire Prevention and Safety Grants* 2007-2014, 2017, 2019, 2023.

*NIOSH NORA* 2018, 2019, 2021, 2023

**Personal**

Habitat for Humanity, Volunteer Skilled Laborer, 2000-2004

Latin American Ministries, Volunteer Engineer and Mechanic, 1998-2004

# GARRETT K. KIM

## EDUCATION      **BACHELORS OF BUSINESS ADMINISTRATION**

University of Hawaii at Hilo

## **BACHELORS OF ARTS: BIOLOGY**

University of Hawaii at Hilo

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PROJECTS	<b>CoVID-19 Response Lead</b>	March – December 2020
	Led Training, Education and Testing efforts for Hawaii County's CoVID-19 response	
	<b>Fire Fighter Cancer Support Network</b>	2012 – Present
	Established Hawaii Region of the Firefighter Cancer Support Network. Recruited the largest Mentor support cadre in the United States.	
	<b>FireGround Survival Program Coordinator</b>	2013 – Present
	Wrote and awarded an AFG grant to fund training and equipment to create HFD's Fire Ground Survival program. Planned and delivered the largest Fire based training in the history of the department.	
	<b>Wellness Fitness Program Coordinator</b>	2008 – Present
	Wrote and awarded a half-million dollar grant to fund HFD's Wellness Fitness Program. Overseeing all aspects of the program.	

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TRAINING	<b>IAFF FIT2THRIVE Master Instructor</b>	2013 – Present
	One of 15 Master instructors in the United States and Canada.	
	Teach industry leading training program to Fire Departments in North America	
	<b>Coach</b>	1985 - Present
	35 years of coaching Youth and Adult sports.	
	<b>HFD Fire Behavior Lead Instructor</b>	2012 -Present
	Teach Science based fire dynamics, fire service strategies and tactics	
	<b>HFD Fire Ground Survival Lead Instructor</b>	2012 - Present
	Plan, Schedule and Deliver Fire Ground Survival Program	
	<b>HFD ACC Operations Instructor</b>	2010 - Present
	Deliver Aquatic Rescue and Response training	

**WORK HISTORY****SPECIAL OPERATIONS CHIEF**

Led HFD's Hazmat, Rescue and Ocean Safety Programs and Large scale incidents.

**FIRE CAPTAIN**

Company Officer at Waiakea Rescue Co. 2, Kaumana HazMat Co. 4

Specialty Stations and Honoka'a Fire Co. 8

**FIRE EQUIPMENT OPERATOR**

Fire Equipment Officer at Waiakea Rescue Co. 2, Kaumana HazMat Co. 4

and Honoka'a Fire Co. 8

**FIRE RESCUE SPECIALIST**

Fire Rescue Specialist at Waiakea Rescue Co. 2

**FIREFIGHTER/EMT**

Firefighter/EMT, worked in every Fire District on Hawaii island

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**HONORS****Firefighter of the Year**

2016 Aloha Exchange Club Firefighter of the Year Award

**3 Time Daniel R. Sayre Award Winner**

2004, 2006, 2007 Daniel R. Sayre Award

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**CERTIFICATIONS**

**AHIMT Planning Section Chief**

**AHIMT Safety Officer**

**Dive Rescue Specialist**

**Advanced Swiftwater Technician**

**Inland Search and Rescue Planning**

**Confined Space Rescue Technician**

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**REFERENCES****DEREK ALKONIS**

Fire Safety Research Institute

**PROGRAM MANAGER****DAVE FROST PHD**

University of Toronto

**PROFESSOR****RANDALL MEDEIROS**

Hawaii Police Department

**CAPTAIN (RET)****CHRIS STELFOX**

Hawaii Fire Department

**OCEAN SAFETY CAPTAIN (RET)****CURTIS MATSUI**

Hawaii Fire Department

**BATTALION CHIEF (RET)**

# JESSICA T. PICKETT

## **EDUCATION & HONORS**

### **Drexel University**

Master of Public Health (candidate)

### **The George Washington University**

B.A. Environmental Science / Biology

*Magna cum laude / Phi Beta Kappa*

Rhodes Scholarship Finalist

George C. Marshall Scholar

Morris K. Udall Environmental Science Scholar

Oak Ridge Institute for Science and

Engineering Federal Research Grantee

## **CERTIFICATIONS & AWARDS**

National Registry Paramedic

PALS, ACLS, PHTLS, CPR certified

NFPA Firefighter I & II Train the Trainer

NFPA Instructor I (Pro Board Certification)

NFPA Officer I (Pro Board Certification)

PEMA Basic Emergency Manager Certification

FEMA Professional Development Series Certification

CLEAR Investigator Certification

Chamber of Commerce Certificate of Valor

Firehouse Magazine Heroism Award

Fairfax County Team Performance Award

## **WORK EXPERIENCE**

### **RPM Solutions Group, Inc.**

*Founder and CEO*

**2017 – Present**

- Provides project management, design, strategy, training, and marketing services for clients including international organizations, federal/state/local government agencies, educational institutions, non-profit organizations, and private sector firms
- Performs in-depth research, training, and reporting on matters including, but not limited to: diversity, equity, inclusion and belonging training; organizational and team dynamics; management analysis; community risk reduction; emergency management plans and training; emergency medical services (EMS) and mobile integrated healthcare strategic planning; deployment analysis and standards of cover studies; and continuity of operations planning

### **Montgomery County Department of Public Safety (MCDPS)**

*Deputy Emergency Manager/Regional EMS Operations and Special Programs Manager*

**2016 – 2018**

- Regional Regulatory Officer responsible for oversight of 20 municipal ambulance agencies
- Program Manager of the First Responder Naloxone Program for 49 participating police agencies
- Regional Quality Assurance Officer for the MCDPS Regional EMS Council charged with conducting investigations pursuant to Title 28 of the Pennsylvania Code
- Oversaw Medical Command Facility accreditation and inspections for County hospitals and all associated Medical Command Physicians
- Assisted with exercise development, implementation, and evaluation utilizing the HSEEP model for regional first responder agencies, schools, hospitals and other community partners
- Managed all county level Strike Team and Mass Casualty Incident assets
- Responsible for program development, data collection, analysis, and reporting for multiple clinical pilot programs
- Served as board member and coordinator of the regional Medical Advisory Committee
- Assisted with policy development and implementation of the Strategic National Stockpile / Medical Counter Measures initiative
- Performed periodic review and revision of the APCO Emergency Medical Dispatch program
- Provided clinical training to 911 dispatchers, EMS providers, and law enforcement officers
- Served on the Community Paramedicine Steering Committee
- Participated as a board member of the Regional Child Death Review Team

**Fairfax County Fire & Rescue Department (FCFRD)****2006 – 2016***Fire Lieutenant/Paramedic***Administrative Duties:**

- Served as Gubernatorial Appointee to the Virginia State Child Fatality Review Team
- Served as Technical Information Specialist on the USAID/FEMA Urban Search & Rescue Team VATF1
- FCFRD representative to the Northern Virginia EMS Council's Community Paramedicine Workgroup
- Appointed to the EMS 2020 Committee for strategic planning regarding EMS system changes
- Coordinated large-scale conference planning for the annual EMS Symposiums and Retirement Conferences
- Served as editor of the 2012 Fairfax County EMS Manual and Protocols

**Operational Duties:**

- Served as front line supervisor for fire apparatus and EMS transport units
- Administered Advanced Life Support (ALS) and Basic Life Support (BLS) patient care
- Developed and delivered curricula for ALS and BLS continuing education programs
- Completed documentation including Significant Incident Reports and Exposure Reports
- Performed suppression related duties including fire extinguishment, search, rescue, and overhaul

**Local 2068 Fairfax County Professional Fire Fighters & Paramedics****2012 – 2015***EMS Chairperson / Executive Board Member*

- Authored a proposal for the restructure of compensation for ALS personnel
- Assisted in actuarial studies examining the impact of proposed salary changes on the pension fund
- Selected as the International Association of Fire Fighters representative to attend the President's address to Congress and White House Reception
- Lobbied at the local, state, and federal level on matters pertaining to public safety

**Microbiotest Laboratories****2002 – 2003***Laboratory Technician / Research Specialist*

- Responsible for independent testing of clients' products in accordance with EPA and FDA guidelines
- Performed viricidal efficacy testing in Bio Safety Level 2 and 3 laboratory facilities
- Maintained highly technical records and classified data documentation
- Propagated viral stocks including HIV, rabies, and hanta viruses according to GLP standards
- Prepared, maintained, and catalogued cell lines and viral stocks for liquid nitrogen preservation
- Cared for live animal specimens and harvested cells for research experiments

**The White House, Office of the Federal Environmental Executive****1998 – 1999***Federal Research Grantee*

- Assisted with large-scale event planning
- Collected and processed RCRA compliance data from the Department of Defense, Department of Energy, Department of Health and Human Services, and the Environmental Protection Agency
- Researched and wrote a Report to Congress on the compliance of federal agencies with RCRA
- Conducted research on environmentally preferable products, such as environmentally-friendly coatings for industrial uses

**COMPUTER SKILLS**

Microsoft Word

Adobe Acrobat Suite

Visio

Telestaff

Microsoft Excel

SharePoint

ArcGIS

Everbridge

Microsoft PowerPoint

Google Docs

Epi Info

Pictometry

# **Kevin M. Roche**

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## **SUMMARY OF QUALIFICATIONS**

Broad project management, training, and market research experience with a broad number of technical issues related to the fire service and other governmental services including management, technical analysis, occupational safety, fire prevention, recruitment and employment, emergency communications, messaging strategy and understanding, budgeting, code development and administration, and customer service. Over 30 years of experience as a firefighter, fire department administrator, and consultant to fire service organizations, fire departments, and industry.

## **Experience Includes**

- Planning and analysis of fire protection and emergency medical service provision
- Development of strategies to communicate with the fire service
- Specification and purchase of fire apparatus and major capital equipment
- Development of technical training materials including wireless communications, vehicle safety, and other topics
- Analysis and evaluation of programs
- Involvement in the NFPA standards process as a technical committee member and subject matter expert
- Evaluation of fire department emergency incident operations
- Specification and purchasing of fire department related apparatus, equipment, and materials
- Evaluation of firefighter recruitment, testing, and training processes
- Budget development and administration on division and department level
- Development and administration of firefighter safety programs

## **AWARDS AND RECOGNITION**

2015 Everett E. Hudiburg Memorial Award for Outstanding Achievements in Fire Service Training – International Fire Service Training Association

Lifetime Achievement Award – Phoenix Fire Department – 2015

Honorary Fire Fighter – United Phoenix Fire Fighters - 2014

## **FORMAL EDUCATION**

- Master of Arts Degree in Political Science with a certificate in Public Administration, University of Florida, December 1989.

Coursework in public policy evaluation, public budgeting and finance, community analysis, values and administration, statistics, survey research, urban and regional planning, computer applications in public administration.

- Bachelor of Science Degree in Fire Protection and Safety Engineering Technology, Oklahoma State University, December 1985.

## **EMPLOYMENT HISTORY**

### **FACETS Consulting LLP**

PO Box 26891, Phoenix, AZ 85068 – 602-421-7602

Partner -- February 2006 - Present

Lead consultant on management and operational reviews of fire departments, executive search and selection processes, Metropolitan Medical Response System plan revision, vehicle safety documents, fire service wireless communications guide, firefighter safety programs, counsel to private sector entities seeking to communicate with the fire service, and other management reviews.

### **Phoenix Fire Department**

150 South 12th Street, Phoenix, AZ, 85034 -- (602)-256-3175

Assistant to the Fire Chief (retired) -- February 2009 -- May 2014

Staff support for the Fire Chief and executive staff. Development of reports on current issues. Represent the fire department in contact with elected officials, staff from other organizations, and with customers. Member of the department's Urban Search and Rescue team with three deployments including Hurricane Katrina in New Orleans. Experience with seeking and applying successfully for grant funding including federal funding for fire department equipment, training, and firefighter staffing.

Assistant Fire Marshal -- November 2006 -- February 2009

Responsible for a staff of fifty engaged in new construction plans review and inspections, existing building inspections, fire protection engineering staff. Coordination of Fire Department work with the city's development efforts. Management of code adoption and appeals to the Fire Marshal. Under the direction of the Fire Marshal.

**Resource Management Administrator -- September 1996 -- November 2006**

Responsible for management of a staff of up to forty providing support services to the Phoenix Fire Department including apparatus purchase and maintenance, facility purchase and maintenance, equipment purchase and maintenance, protective clothing purchase and maintenance, general purchasing, warehousing, computer support, and other services under the direction of an Assistant Fire Chief. Also assist other fire department divisions with technical and management issues.

**Special Assistant to the Senior Staff -- March 2004 -- October 2004**

Responsible for project management for the senior staff of the fire department. Assist with the development of information for city management and for internal communications.

**Fire Protection Engineer -- February 1990 - September 1996**

Responsible for planning activities for the Fire Department, internal communications, resource allocation studies, and various projects under the direction of a Deputy Fire Chief. Participation in division and departmental budgeting, purchasing, and capital projects. Conduct research, development, and testing of fire equipment, fire apparatus, and protective clothing.

**Gainesville Fire-Rescue**

427 South Main Street, Gainesville, FL, 32602 -- (352)-334-2590

**Fire Protection Engineer for Planning, Research, and Development  
February 1986 - February 1990**

Plans for fire and emergency medical service provision in annexed areas, purchase and installation of a computer aided dispatch system, development of positive working relationships with governmental and citizen organizations, development of contracts for fire protection and emergency medical services with the surrounding county, response to emergency incidents, supervision of the department's occupational safety and supply programs, purchase of fire apparatus and capital equipment, completion of a variety of projects under the direction of the Fire Chief.



## **Independent Consulting – Illustrative Examples**

- Author "Capital Resource Management" chapter in the text Managing Fire and Emergency Services, published by the International City Management Association, 2011.
- Analysis of fire department fleet and facilities for sufficiency and operational readiness including an analysis of the compliance of the Boston Fire Department with NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
- Content and operational system development for the Vulnerability Assessment Program (VAP) for the National Fallen Firefighters Foundation. This program allows local fire officials to assess and address risks to the health and safety of firefighters.
- Principal member of the development and revision teams for the National Fire Academy (FEMA) field courses - Incident Safety Officer and Health and Safety Officer.
- Consultant to the Court Monitor on issues related to firefighter recruitment and testing, candidate vetting, recruit training, and Equal Employment Opportunity issues.
- Advisory and communications strategy services for entities with an interest in the fire and emergency services such as manufacturers, service companies, and others.
- Researched and developed "Firefighter Fatalities in the United States" reports for the United States Fire Administration (FEMA), 1997 through the present.
- Assistance to families and organizations that have suffered a line-of-duty death with the development of application materials for the Public Safety Officers Benefits (PSOB) program.
- Member of the Post Incident Assessment and Review Team for the City of Charleston, South Carolina. Report on the Sofa Super Store fire, June 18, 2007. This fire claimed the lives of nine firefighters.
- Editor and content developer for numerous fire service publications including the Voice Radio Communications Guide for the Fire Service (United States Fire Administration, 2008), Fire Fighter Line-of-Duty Death or Injury Investigation Manual (International Association of Fire Fighters/International Association of Fire Chiefs, 2010), and Funding Alternatives for Emergency Medical and Fire Services (United States Fire Administration, 2012).
- Executive selection processes including the interview process for Fire Chief in the City of Quincy, Massachusetts and the Fire Commissioner selection process for the City of Boston.
- Fire department operational and deployment studies including analysis of the emergency response systems for the Cleveland Fire Department and the Buffalo Fire Department.

- Speaker at national fire service conferences on firefighter safety and fire service issues such as apparatus safety, self-contained breathing apparatus, firefighter fatality statistics, safety in fire department facilities, and fire service deployment analysis.
- Various benchmarking, cost, and resource allocation studies.

Professional and personal references available on request.

Kraig Stevenson, EIT, CBO: Senior Regional Manager, ICC Government Relations, field manager for AK, HI, ID, MT, OR, and WA. Mr. Stevenson has worked for the International Code Council and its legacy model code group, the International Conference of Building Officials and for local jurisdictions in the building code administration, inspection, and adoption field for over 33 years. He is a Certified Building Official and multi-certified inspector and plans examiner having served in building department positions at local government jurisdictions. He has extensive knowledge of multiple states' legislative processes and state agencies' regulatory structures, statutes, and administrative laws.

He participates in policy development to help local governments, state agencies and other associations with their legislative initiatives. Mr. Stevenson teaches technical code seminars and legal aspects of code administration specific to address the regulatory environment of individual states. He received a Bachelor of Science Degree from Western Washington University, and is the recipient of the title "*Distinguished Community Leader*" from the Northwest Institute for Community Leadership.

#### **Senior Regional Manager, Government Relations, International Code Council, 1997 – Present**

Senior Regional Manager for a six-state region, managing governmental policy and technical code administration affairs in the northwest, arctic and pacific island states. Liaison to the ICC Chapters and members in the region to assist them to best participate in the association's programs and to receive ICC services and membership benefits. Directing, advising upon, and devising implementation plans for state code adoption and legislative strategies, and advising state and local elected officials and appointed state agency officials on public safety and public policy affairs and initiatives compliant with state statutes and administrative agency rules.

#### **Senior Regional Manager, International Conference of Building Officials, 1999 – 2003**

A leadership role with the organization, managing the regional office and its staff of engineers and providing the full range of membership services of technical, structural, code interpretation and implementation functions, plan review consultation services, training, and government affairs across a seven-state region. Advising on state and local code implementation policies, government relations activities, and technical code training activities.

#### **Staff Engineer, Plan Review, International Conference of Building Officials, 1997 – 1999**

Performed engineering and building code review and plan review consultation services for local and state governments. Developed and presented technical code seminars, technical training sessions and wrote technical code interpretations for jurisdictional authorities.

# Attachment 4

Maui

# State Investigation Into Maui Fires Has Been Quietly Moving Along. Now It's Going Public

The large number of deaths makes understanding what happened in Lahaina a national concern, investigators say.

 23

By Kirstin Downey  / October 6, 2023

 Reading time: 7 minutes.



Investigators studying the mystery of what caused the deadly fire in Lahaina are turning to the public for help getting the clues they need to uncover the truth.

They are asking fire survivors to share their photos, videos and personal stories about the day to help develop a chronology of events that could lead to a fuller determination of what happened.

Understanding the exact causes of the blaze could also give state officials the information they need to craft new rules and programs to reduce

ATTACHMENT 4

further risk on Maui and on the other islands as well, the investigators said.

The panel of fire experts, all associated with the Fire Safety Research Institute in Columbia, Maryland, have been quietly working on Maui since late August, talking to firefighters, police and officials about the underlying issues that led to the Aug. 8 conflagration.



The entrance to Front Street in Lahaina off of Honoapiilani Highway remains barricaded after the Aug. 8 fires. (Nathan Eagle/Civil Beat/2023)

Up to seven investigators at a time, including retired fire chiefs from California, the Big Island and Oregon and specialized fire scientists from around the country, have been there during the past seven weeks.

“We got there very early because we wanted to be able to document all the structures that were lost and all the structures that survived before other people got in there and started altering things,” said Steve Kerber, FSRI’s vice president and executive director, who holds a doctorate in fire protection engineering.

Until now, the investigation has been developing under the radar, with few people on Maui aware that it was underway.

“I think we haven’t intentionally been quiet, but we’ve been trying to go about our work and gather information the best we can while trying to be respectful as possible to the loss that has been suffered and the trauma that people have been put through,” Kerber said. “We’re trying to create the least amount of friction as possible as we gather the information we need to put all the facts together.”

In the weeks and months following the fire, Lahaina residents and the general public have clamored for information about how and why the fires broke out, how they resulted in such carnage and what Maui officials had done during the critical hours that led to, and following, the disaster.

On Aug. 31, Hawaii Attorney General Anne Lopez announced she had selected the Fire Safety Research Institute to conduct a full investigation, saying she was committed to an “independent, unbiased and transparent investigation into government actions during the fires.”

In a statement today, Lopez said the investigation is proceeding as planned.

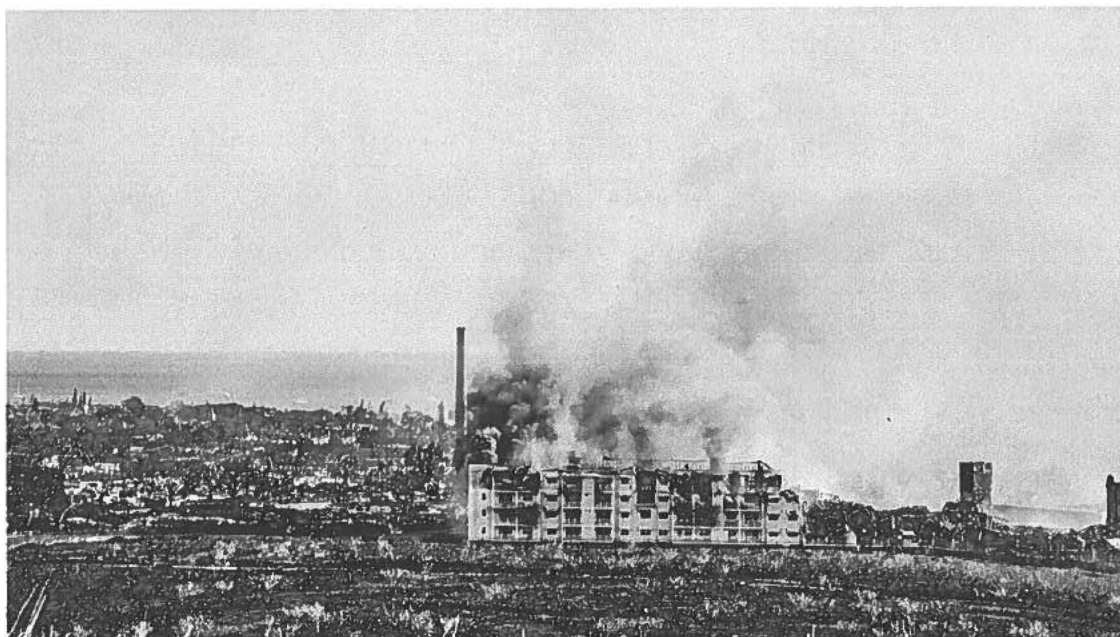
“The results of the investigation will be openly shared with the public and provide a picture of what happened and recommendations how to prevent a disaster like this from happening again,” Lopez said.

Lopez said that the investigators have been engaged in “tireless work,” and that their “expertise and reputation are unmatched in the field of fire investigations.”

The Fire Safety Research Institute is a nonprofit that studies fire dynamics.

It is associated with UL, also known as Underwriters Laboratories, which sets safety standards and was created in 1894.

“The Fire Safety Research Institute is reputable, it’s respected,” said Elizabeth Pickett, co-executive director of the Hawaii Wildlife Management Organization. “They are very familiar with doing investigations in disaster situations.”



Scenes show buildings still aflame a day after the fire swept through Lahaina. (Jack Truesdale/Civil Beat/2023)

She said the team has considerable expertise. Many of them regularly make presentations at fire chief conferences, she said.

“I think every one of those investigators has been in the fire service and investigation for more than 30 or 40 years,” she said. “These guys know what they are doing.”

The investigators are asking witnesses to send their images and videos to them, preferably including items with time stamps, so they can put the



information together to gather evidence on what happened when.

Hundreds of people fleeing the fire managed to take pictures on their cell phones, creating searing images that have saturated social media sites in the two months since the fire, but the material is at risk of disappearing if it is not gathered in a concerted way while memories of the event remain fresh.

This evidence from witnesses is particularly important, Kerber said, because Maui lacks the fire sensors and satellites that more systematically gather data elsewhere, including on the west coast of California.

“We’ve got to piece it together by people’s experiences,” Kerber said.

Derek Alkonis, the group’s research program manager and point man on Maui, has begun circulating a flier asking for assistance that he and the team hope will be disseminated as widely as possible.

“We want to connect with the community and let them know our process,” Alkonis said. “People had incredible experiences. It’s important we know about that.”

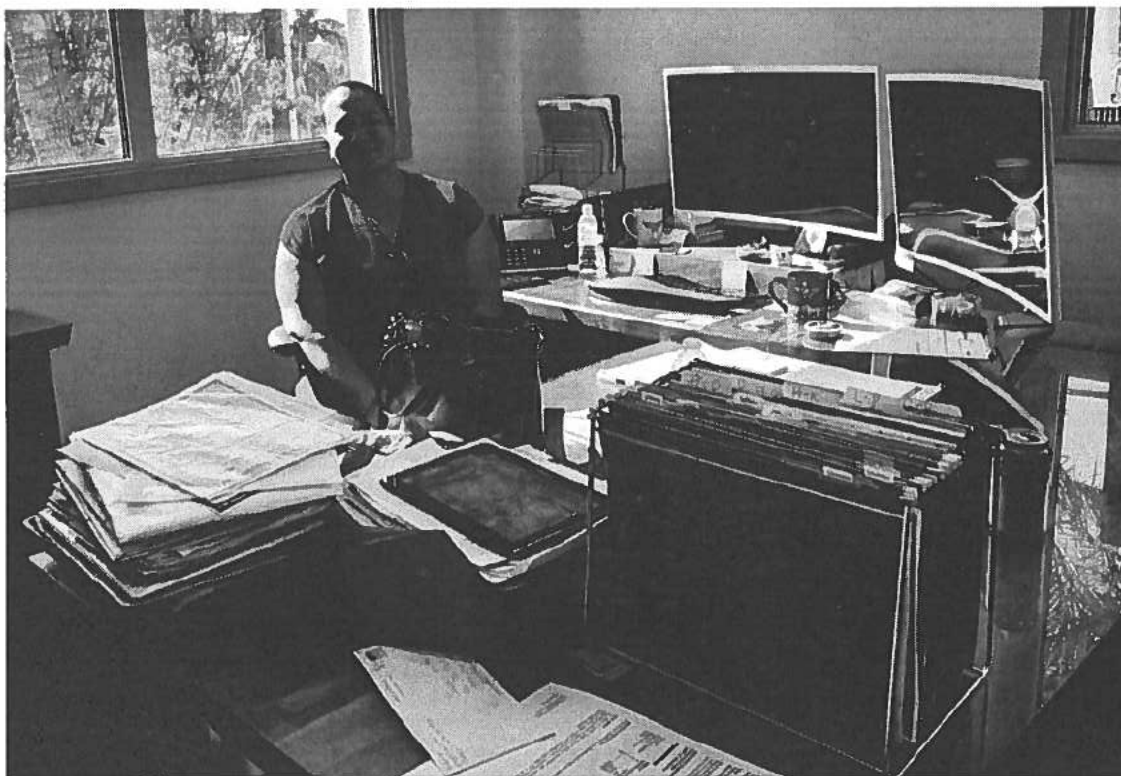
This visual testimony, as well as the recollections of the people who witnessed what happened “are all very valuable to the process,” he said.

Alkonis, a 30-year veteran of the Los Angeles County Fire Department, has deep ties to the Pacific Islands. His mother is from Samoa and lived in Hawaii in the past and his uncle lives on Oahu with his family.

Pickett, who has briefed the investigators, said Alkonis is particularly well-versed on conditions in Hawaii, and that she believes the panel has been making all the right contacts throughout the islands to understand events

thoroughly.

One person on Maui who is assisting the effort is Mahealani K.K. Strong, executive agent and owner of Insurance Associates in Lahaina. She is circulating fliers being distributed to the general population at disaster relief centers and is also helping to set a time and place for a public meeting that will bring community leaders together to boost outreach for the investigation.



Lahaina Insurance executive Mahealani K. K. Strong has been pushing hard for 1,000 clients whose homes and business were destroyed or damaged by the fire. Now she is helping fire investigators as well, as they explore the causes of the fire. (Kirstin Downey/Civil Beat/2023)

"The community needs to understand what happened, what went wrong and how we can trust that it will never happen again," she said. "Anything that leads us to an answer is a relief, even if it hurts."

The biggest challenge for the investigators, she said, is that public trust in government officials has been shattered. She said that renewed trust will only occur when people are allowed to openly share their thoughts and concerns without feeling that they are being shut down.

"Ask anyone, they will say, 'We don't trust you,'" she said.

She hopes that the meeting will be planned with enough time for many people to be able to participate.

Kerber said that one of the challenges of conducting the investigation and gathering the needed information is that Maui officials "work through their lawyers," he said, adding that Alkonis recently attended a meeting "with the police chief, the fire chief and their attorney."

The study is being conducted in three phases. The first, which is ongoing now, is fact-finding, Phase 2 will involve interpretation of the data and evidence, and Phase 3 will involve preparation of a report that will provide recommendations and strategies for county and state officials to reduce the risk of further tragedies.

Kerber said that what happened is important to Lahaina but also is a matter of nationwide concern because this wildfire had the largest number of deaths in a century.

"You don't have 100-year-loss fires very often, and if we don't learn from them we would absolutely be doing a disservice to the poor people that we lost," Kerber said.

*Civil Beat's coverage of Maui County is supported in part by grants from the Nuestro Futuro Foundation.*

## Help power our public service journalism

As a local newsroom, Civil Beat has a unique public service role in times of crisis.

That's why we're committed to a paywall-free website and subscription-free content, so we can get vital information out to everyone, from all communities.

We are deploying a significant amount of our resources to covering the Maui fires, and your support ensures that we can pivot when these types of emergencies arise.

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### About the Author



**Kirstin Downey** ↗

A Kailua girl, Kirstin Downey is a reporter for Civil Beat. A long-time reporter for The Washington Post, she is the author of "The Woman Behind the New Deal," "Isabella the Warrior Queen" and an upcoming biography of King Kaumualii of Kauai. You can reach her by email at [kdowney@civilbeat.org](mailto:kdowney@civilbeat.org).

Use the **RSS** feed to subscribe to Kirstin Downey's posts today

# Attachment 5

JOSH GREEN, M.D.  
GOVERNOR



ANNE E. LOPEZ  
ATTORNEY GENERAL

MATTHEW S. DVONCH  
FIRST DEPUTY ATTORNEY GENERAL

STATE OF HAWAII  
DEPARTMENT OF THE ATTORNEY GENERAL  
*Ka 'Oihana O Ka Lolo Kuhina*  
425 QUEEN STREET  
HONOLULU, HAWAII 96813  
(808) 586-1500

August 15, 2023

VIA EMAIL

The Honorable, Dawn N.S. Chang  
Chair, Board of Land and Natural Resources  
1151 Punchbowl Street, Room 131  
Honolulu, HI 96813

RE: Maui Wildfires

Dear Dawn:

Based on the email correspondence and the letters between you and Mr. Tremble of Maui Land Company, I write to request that you deploy Kaleo Manuel, Deputy Director, Commission on Water Resource Management, to a division or branch of the Department of Land and Natural Resources that is not involved in water resources. I request that this deployment last at least until I have completed the Comprehensive Review of the Critical Decision Making and Standing Policies related to the August Wildfires. At this time, I cannot say how long this process will take but I imagine no less than 3 months.

Please know and assure Mr. Manuel that I have no belief that his actions caused or worsened the wildfires. The purpose of this request is simply to reduce any distraction from the CWRM and my review of events.

If you have any questions, please feel free to call.

Sincerely,

Anne E. Lopez  
Attorney General

ATTACHMENT 5

JOSH GREEN, M.D.  
GOVERNOR



ANNE E. LOPEZ  
ATTORNEY GENERAL

MATTHEW S. DVONCH  
FIRST DEPUTY ATTORNEY GENERAL

STATE OF HAWAII  
DEPARTMENT OF THE ATTORNEY GENERAL  
*Ka 'Oihana O Ka Loio Kuhina*  
425 QUEEN STREET  
HONOLULU, HAWAII 96813  
(808) 586-1500

October 9, 2023

VIA EMAIL

The Honorable, Dawn N.S. Chang  
Chair, Board of Land and Natural Resources  
1151 Punchbowl Street, Room 131  
Honolulu, Hawaii 96813

Re: Maui Wildfires

Chair Chang,

On October 6, 2023, the Department of the Attorney General completed its review of the August 8, 2023 events involving diversion of water discussed in correspondence among Mr. Manuel, Mr. Tremble, and yourself. Due to the time it will take to complete the overall investigation into the Maui wildfires, I isolated this issue so that a timely investigation could be completed.

Now that the investigation is complete, it is no longer necessary for Mr. Manuel to be deployed in a different position. If you wish to return Mr. Manuel to his position, please feel free to do so.

Please do not hesitate to contact me if you have any questions.

Regards,

*Anne E. Lopez*

Anne E. Lopez  
Attorney General