



**ELIZABETH C. KELLER, P.E.**  
**SENIOR STAFF CONSULTANT**

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Ms. Elizabeth Keller is a Senior Staff Consultant for Engineering Systems Inc. (ESi). Her fire protection engineering expertise includes assessment of building life safety features, code compliance evaluations, fire suppression/extinguishing system failure analyses, and fire alarm system design and integration. Ms. Keller's training and practical experience includes: design and testing of automatic fire suppression systems and fire pumps; design and review of inert gas and clean agent fire suppression systems; national, state, and local fire and building code compliance; material fire performance; fire testing, and; fire origin and cause investigations. Her experience also includes the evaluation, inspection, and maintenance of buildings, facilities, and products for code compliance in accordance with National Fire Protection Association (NFPA) codes, International Code Council (ICC) codes, and state and local codes.

**Areas of Specialization**

Fire Suppression System Design, Testing, and Failure Analysis  
Sprinkler Systems – Dry and Wet Pipe, Pre-Action  
Fire Extinguishing Systems – High and Low Expansion Foam, Dry and Wet Chemical, Clean Agent  
Water Mist Systems  
Fire Pumps  
Inspection, Testing, and Maintenance of Fire Protection Systems  
Water Supply Testing and Analysis  
Hydrant Flow Testing  
Fire Alarm, Detection, and Communication Systems  
Mass Notification Systems  
Fire Protection and Life Safety Surveys  
Building, Life Safety, and Fire Code Analysis (NFPA, ICC, State and Local Codes)  
NFPA 101, Life Safety Code Assessments  
Plan Review of New Construction and Renovations  
Construction Administration  
Hazard Analysis  
Fire Origin and Cause Investigation  
Small- and Large-Scale Fire and Flammability Testing

**Education**

M.S., Fire Protection Engineering, University of Maryland, 2016  
B.S., Fire Protection Engineering, University of Maryland, 2014

**Licensed Professional Engineer (P.E.)**

State of North Carolina ..... License No. 047940

February 2019

## Professional Affiliations

National Fire Protection Association (NFPA)  
Society of Fire Protection Engineers (SFPE)  
Salamander National Fire Protection Engineering Honor Society

## Positions Held

### Engineering Systems Inc., Charlotte, North Carolina

Senior Staff Consultant, 2019 – Present

### Koffel Associates, Inc., Charlotte, North Carolina

Fire Protection Engineer, 2016 – 2019

### Exponent, Inc., Bowie, Maryland

Research Assistant, 2006-2016

## Specialized Training

Certification in Hazardous Waste Operation and Emergency Response through completion of OSHA 40-hour HAZWOPER course, in accordance with 29 CFR 1910.129(e)(3)

## Presentations

**Keller EC**, Gilyeat SG. The Impact the Reference Standards in the 2012 Edition of NFPA 101 have on the Operation of Healthcare Facilities: NFPA 13, 25, and 72. North Carolina Healthcare Engineers Association (NCHEA) Spring Seminar, Pinehurst, North Carolina, March 15, 2018.

White JP, Verma S, **Keller EC**, Hao A, Trouve A, Marshall AW. Water Mist **S**uppression of a Turbulent Line Fire. 12<sup>th</sup> International Symposium on Fire Safety Science (IAFSS), Lund University, Sweden, June 12-16, 2017.

Verma S, White JP, **Keller EC**, Marshall AW, Sunderland P, Trouve A. Measured and Simulated Temperature Statistics in a Buoyancy-driven Turbulent Line Fire. 10th U.S. National Combustion Meeting, College Park, Maryland, April 23, 2017.

Blum AF, **Keller EC**, Long RT. Large Loss Fires and their Connection with Fire Sprinkler Performance. National Fire Protection Association Conference and Exposition, Chicago, Illinois, June 10, 2013.

## Publications

White JP, Verma S, **Keller EC**, Hao A, Trouve A, Marshall AW. Water mist suppression of a turbulent line fire. Fire Safety Journal, Volume 91, July 2017, pp. 705-713.

Verma S, White JP, **Keller EC**, Marshall AW, Sunderland P, Trouve A. Measured and simulated temperature statistics in a buoyancy-driven turbulent line fire. Proceedings of the 10th U.S. National Combustion Meeting, April 23, 2017.

Utiskul YP, Wu NP, **Keller EC**. "Fire Department Connection (FDC) Inlet Flow Assessment, Final Report." National Fire Protection Association Fire Protection Research Foundation, January 2016.