



SUPDET®

**SEPTEMBER 13–16, 2022
ATLANTA, GA**

*Suppression, Detection and Signaling Research and Applications
Conference (SUPDET® 2022)*

**Hosted by the Fire Protection Research Foundation
Sheraton Atlanta Hotel**

Last Updated: 8 September 2022

SUPPRESSION PROGRAM

Tuesday, September 13, 2022

8:30 Welcome
2021 William M. Carey Award

Keynote

The Impact of Research on NFPA 13, Standard for the Installation of Sprinkler Systems
Garner Palenske, WJE

Session I: Energy Storage Systems

9:15	Effect of cathode material and state of charge on the emissions of several LIB Nour Elsagan, Fire Safety Unit, Construction Research Center Yoon Ko, National Research Council of Canada
9:45	From F-150's to Grid-Scale Storage: Challenges, Solutions, and Best Practices in Energy Storage Noah Ryder, Fire & Risk Alliance, LLC

10:15	Proactive ESS: a look at lessons learned and safety by design Christina Francis, Tesla
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10:45 Break sponsored by



Session II: Special Suppression Applications

11:15	Feasibility Analysis and FDS Modeling of Water Mist Fire Suppression Systems for Protection of Aircraft Hangars <u>K. Steranka</u> , Jensen Hughes J. Milke and A. Trouve, University of Maryland
11:45	Effect of Inert Gas Discharge Time on Class A Test Article Extinguishment <u>Zimak, J.</u> , Cuevas, J., Puchovsky, P., Simeoni, A., Worcester Polytechnic Institute

12:15 Lunch on own

Session III: Storage Applications

1:45	Managing Fire Hazards in Top-Load Automatic Storage and Retrieval Systems Benjamin Ditch, FM Global
2:15	Tactical Measures for Manual Firefighting for the AutoStore system Ingunn Haraldseid, AutoStore AS
2:45	Impact of Elevated Walkways in Storage on Sprinkler Protection Noah Ryder, Fire & Risk Alliance, LLC

3:15 Break

Session IV: Emerging Issues

3:45	Water Supply and Climate Change: The Impact of Water Stress on Fire Protection Systems <u>Virginia R. Charter, PhD, PE, Justin Fletcher, Oklahoma State University</u>
4:15	Addressing the Research Practice Gap in Pre-Incident Planning through Simulation-Based Case Studies <u>Katelynn A. Kapalo, Ph.D., Joseph A. Bonnell</u> University of Nebraska at Omaha

5:00 – 6:30 Reception

Wednesday, September 14, 2022

Session V: Foam

9:00	Assessment of Commercial Fluorine-Free Firefighting Foams and Impacts for Updated Military Qualification <u>Katherine Hinnant</u> , S. Karwoski, J. Farley, U.S. Naval Research Laboratory
9:30	Evaluation of PFAS-Free Fire-Fighting Foams With Conventional And Compressed-Air Foam Equipment For Military Applications <u>Jason Huczek</u> , Southwest Research Institute <u>David Munroe</u> , ACAF Systems, Inc. Niall Ramsden, ENRG Consultant Co.
10:00	AFFF Decontamination of Firefighting Vehicles Yoon Ko, <u>Nour Elsagan</u> , Rokib Hassan, National Research Council of Canada Jamie McAllister, FireTox LLC

10:30 Break

11:00	Going Fluorine Free - Converting a Legacy AFFF System to Fluorine-Free Foam Jeremy Souza, P.E., Code Red Consultants
11:30	FAA Fluorine-free foam research Keith Bagot, FAA

12:00 Closing Comments, Feedback

**1:00 – 2:00 pm – Guided tour of Truist Park, home of the Atlanta Braves,
by the local Cobb County Fire Marshal’s office**

DETECTION PROGRAM

Thursday, September 15, 2022

8:30 Welcome
2021 Ronald K. Mengel Award

Keynote

Impact of Research on NFPA 72, National Fire Alarm and Signaling Code
Rodger Reiswig, JCI

Session I: First Responders

9:15	A binary Logistic Regression Model to Evaluate Backdraft Phenomenon <u>Ryan Falkenstein-Smith</u> and Thomas Cleary, National Institute of Standards and Technology
9:45	Data Informed Fire-Ground Operations <u>Nicholas Petrakis, P.E.</u> , Michael Bowes, Energy Safety Response Group (ESRG) Casey Grant, P.E., DSRAE, LLC

10:15 Break sponsored by

The logo for Siemens, consisting of the word "SIEMENS" in a bold, teal, sans-serif font.

Session I: First Responders (continued)

10:45	Machine Learning Based Heart Abnormality Detection System for Safe Firefighting <u>Jiajia Li</u> , Christopher U. Brown, Wai Cheong Tam, National Institute of Standards and Technology Michael Xuelin Huang, Google Inc.
11:15	The Use of Distributed Sensors and Machine Learning for Situational Awareness A. Davis, <u>J. Milke</u> and A. Trouve, University of Maryland

11:45 Lunch on own

Session II: Residential

1:15	National Smoke and CO Alarm Survey Challenges and Update Arthur Lee, US Consumer Product Safety Commission
1:45	Carbon Monoxide Incidents: A Review of the Data Landscape <u>Jim Milke</u> , University of Maryland Jamie McCallister, FireTox LLC
2:15	Review of Alarm Technologies for Deaf and Hard of Hearing Populations Amanda Kimball, Fire Protection Research Foundation

2:45 Break

Session III: Special Applications and Case Studies

3:15	Smart fire protection systems improve overall reliability and decision making Travis Montembeault, Peerless Pump
3:45	The Evolution of Telecommunications Equipment Environments and Detection Challenges <u>Richard Kluge</u> , Ericsson Inc. <u>Jeffrey Betz</u> , AT&T Services, Inc.
4:15	Reliable fire detection systems for residents with drug and psychiatric disorders Jishan Mahmud Rumi, Western Norway University <u>Arjen Kraaijeveld</u> , Western Norway University Cristina Sanfeliu Meliá, RISE Fire Research

5:00 – 6:30 Reception

Friday, September 16, 2022

Session IV: Modeling

9:00	Measurements and Predictions of the Aerosol Dynamics of Soot <u>Amy Mensch</u> , Thomas Cleary, National Institute of Standards and Technology
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Session V: Wildfire

9:30	Research and Applications on Wildfire Fire Alarm System based on Video Monitoring Technology <u>Fang Li</u> , Worcester Polytechnic Institute USA <u>Hongyun Guan</u> , College of Information Science and Technology Donghua University China Qing Zhang, Shanghai Telling Safety Technology Co., Ltd. China
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Session VI: Smart Technology and Systems

10:00	Smart Detection of Building Fires and Hazards Using Fire Protection Devices Wai Cheong Tam, Paul Reneke, Jiajia Li, Richard Peacock, <u>Thomas Cleary</u> , National Institute of Standards and Technology
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10:30 Break

Session VI: Smart Technology and Systems (continued)

11:00	CareDEX: Disaster Resilience in Aging Communities via a Secure Data Exchange Nalini Venkatasubramanian, University of California Irvine
11:30	Fire Prevention and Code Compliance in the Age of Information and Automation <u>Maria Marks</u> , Siemens <u>Jason Webb</u> , Potter Electric Signals

12:00 Closing Comments, Feedback