

NIST WUI FIRE DAYS 2022

Enhancing Life Safety and Reducing WUI Fire Losses



Agenda

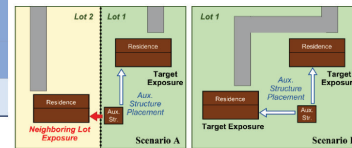
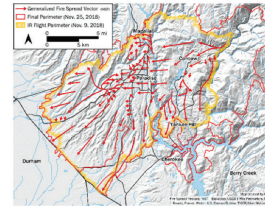
NIST WUI FIRE DAYS 2022 Research Presentations Agenda



Day 1 — July 6, Starting at 1:00 pm Eastern

Session	Time (ET)	Title
1.0	1:00 – 1:15 (15 min)	Opening Remarks – NIST Engineering Laboratory (EL) Director
1.1	1:15 – 1:45 (30 min)	Camp Fire Case Study Overview
1.2	1:45 – 2:30 (45 min)	Camp Fire – Fire Progression Timeline
	2:30 – 2:40 (10 min)	Q&A
	2:40 – 2:45 (5 min)	Break
1.3	2:45 – 2:55 (10 min)	Update on Camp Fire – NETTRA (Notification, Evacuation, Traffic, Temporary Refuge Areas) Report
1.4	2:55 – 4:10 (75 min)	WUI Structure/Parcel/Community Fire Hazard Mitigation Methodology (HMM)
	4:10 – 4:20 (10 min)	Q&A

Total Day 1: 3 h 20 min



Day 2 — July 13, Starting at 1:00 pm Eastern

Session	Time (ET)	Title
2.1	1:00 – 1:20 (20 min)	Structure Separation Experiments (SSE) Overview
2.2	1:20 – 2:05 (45 min)	SSE Phase 1 – NIST Indoor Experiments
2.3	2:05 – 2:15 (10 min)	Update on SSE Phase 1 – NIST Outdoor Experiments
	2:15 – 2:25 (10 min)	Q&A
	2:25 – 2:30 (5 min)	Break
2.4	2:30 – 2:50 (20 min)	SSE Phase 1 – IBHS Outdoor No Wind Experiments
2.5	2:50 – 3:00 (10 min)	Update on SSE Phase 1 – IBHS Cold-Flow Measurements
	3:00 – 3:10 (10 min)	Q&A
	3:10 – 3:15 (5 min)	Break
2.6	3:15 – 4:15 (60 min)	SSE Modeling
	4:15 – 4:25 (10 min)	Q&A
2.7	4:25 – 4:45 (20 min)	SSE Phase 1 – Summary

Total Day 2: 3 h 45 min



NIST WUI FIRE DAYS 2022 Research Presentations Agenda



Day 3 — July 20, Starting at 1:00 pm Eastern

Session	Time (ET)	Title
3.0	1:00 – 1:15 (15 min)	Parcel-level Hazard Mitigation Introduction
3.1	1:15 – 2:10 (55 min)	NIST Fences Research and Findings
	2:10 – 2:15 (5 min)	Break
3.2	2:15 – 2:50 (35 min)	NIST Emberometer Research
3.3	2:50 – 3:25 (35 min)	2012 Waldo Fire (CO) Case Study
	3:25 – 3:35 (10 min)	Q&A
	3:35 – 3:40 (5 min)	Break
3.4	3:40 – 4:00 (20 min)	HMM WUI Structure/Parcel/Community Design Considerations
3.5	4:00 – 4:10 (10 min)	Closing Remarks – NIST EL Director

Total Day 3: 3 h 10 min



Day 4 — July 27, Starting at 1:00 pm Eastern

NIST Grantees Presentations

Session	Time (ET)	Title
4.0	1:00 – 1:10 (10 min)	WUI Fire-related NIST Grants Introduction
4.1	1:10 – 1:55 (45 min)	WUI-NITY 3: Multi-method traffic movement data collection for WUI fire evacuation modeling – Prof. Steve Gwynne Ph.D., Lund University
	1:55 – 2:05 (10 min)	Q&A
	2:05 – 2:10 (5 min)	Break
4.2	2:10 – 2:55 (45 min)	Developing AI-Based Wildfire Evacuation Behavior (AI-WEB) model – Prof. Xilei Zhao Ph.D., University of Florida
	2:55 – 3:05 (10 min)	Q&A
	3:05 – 3:10 (5 min)	Break
4.3	3:10 – 3:55 (45 min)	Measuring source terms of firebrand generation numbers for physics-based models – Prof. David Blunck Ph.D., Oregon State University
	3:55 – 4:05 (10 min)	Q&A
	4:05 – 4:10 (5 min)	Break
4.4	4:10 – 4:55 (45 min)	Quantification of firebrand production from WUI fuels for model development – Prof. Michael Gollner Ph.D., the University of California, Berkeley
	4:55 – 5:05 (10 min)	Q&A
4.5	5:05 – 5:15 (10 min)	Closing Remarks

Total Day 4: 4 h 15 min



NIST Fire Research Grants Program

FY21 Fire Grants		
EFS	Survey on Usage and Functionality of Smoke Alarms and CO Alarms in Households - Ph. 2 (1 y)	FPRF
FFT		
FR	Assessing Percutaneous Absorption of PFAS Compounds from Firefighter Protective Clothing (2 y)	NC State U
WUI	WUI-NITY 3: Multi -method traffic movement data collection for WUI fire evacuation modeling (1 y)	FPRF
	Developing AI -Based Wildfire Evacuation Behavior (AI-WEB) Models (1 y)	U. Florida
	Quantification of Firebrand Production from WUI Fuels for Model Development (1 y)	UC Berkeley
NFRL		

- Engineered Fire Safety
- Firefighting Technology
- Flammability Reduction
- Wildland-Urban Interface
- National Fire Research Laboratory



Today's Topics

Evacuation

WUI-NITY 3: Multi-method traffic movement data collection for WUI fire evacuation modeling

Prof. Steve Gwynne, PhD. Lund University.

Developing AI-Based Wildfire Evacuation Behavior (AI-WEB) model

Prof. Xilei Zhao, PhD. University of Florida.

Firebrand / Ember Generation

Measuring source terms of firebrand generation numbers for physics-based models

Prof. David Blunck, PhD. Oregon State University.

Quantification of firebrand production from WUI fuels for model development

Prof. Michael Gollner, PhD and Hadi Hajilou, PhD. University of California, Berkeley.



NIST WUI Research Overview

July 2024

2022

NIST WUI DAYS 2022

2023

2024

NIST WUI DAYS 2024

Case Studies

FALL 2022

CAMP #4 NETTRA – Notification/ Evacuation/ Traffic and Temporary Refuge Areas

CAMP #5 Emergency Response/ Defensive Actions and Damaged Structures

Evacuation

Hazard Mitigation Methodology (HMM)

SPRING 2023

NIST TN 2205

Graphical User Tool

Fed: IW
St
Codes

Laboratory Research

SSE

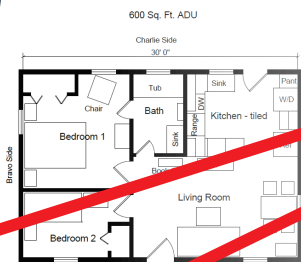
SPRING & FALL 2022



Sheds

RVs, ADUs and Single Family

Firebrands



Fences, Wood Piles

Emberometer

Sealants and Gaskets

RESEARCH



NIST WUI FIRE DAYS 2022

Enhancing Life Safety and Reducing WUI Fire Losses

THANK YOU

