contact@iafss2026.com

15th International Symposium on Fire Safety Science (IAFSS 2026)

Workshop Schedule

(1st Announcement, June 2025)

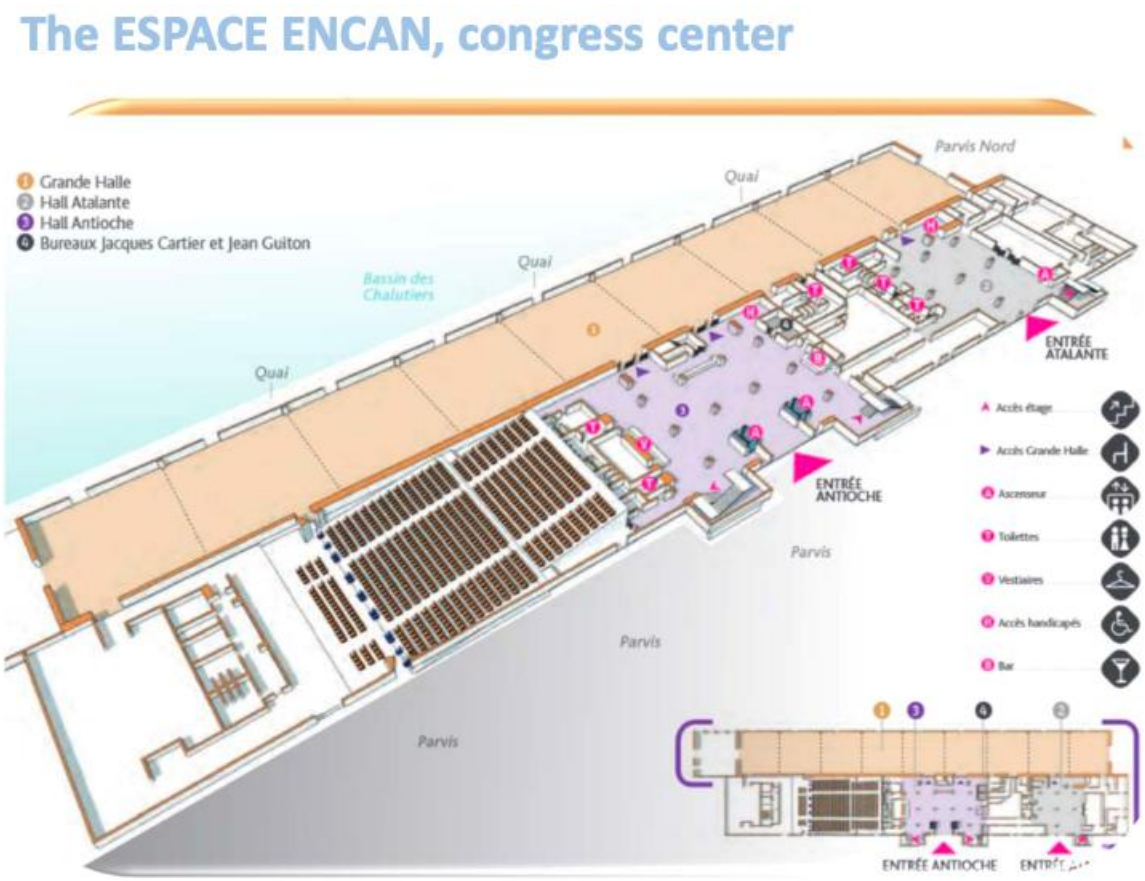
	Saturday June 6	Sunday June 7		
Session	1	1	2	3
Early Morning (8am-10am)	MaCFP Gas Phase	MaCFP Coupled	HBiF	LOF&BE
Mid Morning (10am-12pm)	MaCFP Radiation	MaCFP Discussion	HBiF	LOF&BE
Lunch (12pm-1pm)				
Afternoon (1pm-5pm)	MaCFP Condensed	AI/ML	Energy Systems	
Early Evening (5pm-7pm)	MaCFP Posters	Welcome Events		

Registration

Further information on registration will be forthcoming.

International Association for Fire Safety Science (IAFSS) is delighted to announce that the 15th International Symposium on Fire Safety Science will be held between June 8-12, 2026 in La Rochelle, France.

Location of the Workshops



- Ground floor:
  - *Grande Halle: workshops, coffee breaks, lunch, and posters*

Scope and Objectives of the Workshops

Standing Working Groups

MaCFP-4: *The fourth workshop organized by the IAFSS Working Group on Measurement and Computation of Fire Phenomena (the MaCFP Working Group)*

Co-Chairs:

Isaac Leventon, National Institute of Standards and Technology (USA)
Bart Merci, Ghent University (Belgium)
Arnaud Trouvé, University of Maryland (USA)

Objectives and General Workshop Overview:

The general objective of the IAFSS Working Group on Measurement and Computation of Fire Phenomena (MaCFP) is to establish a structured effort in the fire research community to make significant and systematic progress in fire modeling, based on a fundamental understanding of fire phenomena. This is to be achieved as a joint effort between experimentalists and modelers, identifying key research topics of interest as well as knowledge gaps, and thereby establishing a common framework for fire modeling research. The MaCFP Working Group is intended as an open, community-wide, international collaboration between fire scientists.

The fourth Measurement and Computation of Fire Phenomena Workshop (MaCFP-4) is scheduled to take place over one and a half days (full day Saturday plus Sunday morning), June 6-7, 2026, prior to the 15th IAFSS Symposium in La Rochelle, France. There will be a poster session early Saturday evening to enable further discussion of experimental and modeling results.

Guidelines for Participation:

Instructions for the pre-workshop pyrolysis and radiation heat transfer exercises, descriptions of target experiments, and general participation guidelines are spelled out and kept current at the MaCFP-4 GitHub site. The MaCFP subgroups will focus on the following target cases:

1. Condensed Phase Subgroup Target Case:
   - Pyrolysis modeling exercise, pine wood (charring)
     - *Experimentalists* - Perform tests and share data on the MaCFP GitHub Repository (2025)
     - *Modelers* - Calibrate material property sets using this data (2026); perform simulations of 0D thermal decomposition and 1D gasification
2. Radiation Heat Transfer Subgroup Target Cases:
   - Modeling exercise: predict the radiation fields of benchmark combustion systems
   - Characterization of absorption and emissivity (pyrolysis modeling exercise)

3. Gas Phase Subgroup Target Cases:
    - Soot formation/oxidation and thermal radiation transport (FM Burner)
    - Upward flame spread (constrained modeling exercise)
    - Compartment/façade fires (study of flame structure and heat transfer)

Poster submission:

Further information on MaCFP poster submission will be forthcoming.

Large Outdoor Fires and the Built Environment (LOF&BE)

LOF&BE Co-Leaders:

Samuel L. Manzello, Tohoku University, Japan and Reax Engineering, USA
Sara McAllister USDA Forest Service, USA
Sayaka Suzuki, Institute of Science Tokyo, Japan

Ignition Resistant Communities (IRC) Subgroup Leaders:

Alex Filkov, University of Melbourne, Australia
Nima Masoudvaziri, Berkshire Hathaway Specialty Insurance, USA
Rafal Porowski, Jan Kochanowski University, Poland

Emergency Management and Evacuation (EME) Subgroup Leaders:

Ankit Sharma, Jensen Hughes, USA
Yu Wang, USTC, P.R. China

Objectives and General Workshop Overview:

The International Association for Fire Safety Science (IAFSS) established the permanent working group known as LOF&BE (Large Outdoor Fires and the Built Environment), as an outgrowth of the 2017 Lund Workshops held in conjunction with the 12th IAFSS Symposium. LOF&BE aims to bring the community together to tackle large outdoor fire problems such as wildland fires, wildland-urban interface (WUI) fires, urban fires, and informal settlement fires. LOF&BE currently consists of two subgroups - Ignition Resistant Communities (IRC), and Emergency Management and Evacuation (EME) – and a fire service panel. The IRC subgroup is focused on developing the scientific understanding that will lead to new standards, testing methodologies, and mitigation strategies indicative of large outdoor fire exposures, including the ones from wildland to communities and within communities. The EME subgroup is focused on developing the scientific basis for effective emergency management strategies for communities exposed to large outdoor fires. LOF&BE working group will be holding two workshop sessions: the first one will focus on the work of the IRC and EME subgroups, while the second will focus on a new initiative "LOF&BE Cone Calorimeter Data Comparison."

Scope and Format of Workshop:

<u>First workshop session</u>

This workshop will highlight the progress to date of the IRC and EME subgroup, questions and discussion on progress, and finally an open discussion for LOF&BE future activities.

Second workshop session

A long used experimental tool in the fire research field for fires inside buildings has been the cone calorimeter. Yet, it is not apparent how useful the cone calorimeter is to study fuels found in large outdoor fires, such as WUI fires. What types of data have been collected using the cone calorimeter for large outdoor fire fuels? For what purposes? IAFSS LOF&BE desires to collect cone calorimeter data and compare them among various large outdoor fuel types. This workshop will highlight the progress of LOF&BE cone calorimeter data comparison, comparing the data of wildland fuels, WUI fuels, urban fuels or informal settlement fuels. A summary and comparison would be presented and participants in this activity will be invited to present their own data. We will discuss how to best compare the various large outdoor fuels.

Human Behaviour In Fires Permanent Group Workshop

In this workshop, the Human Behaviour in Fires group will provide updates on the ongoing activities within the group. The workshop will include presentations and discussions concerning the latest work performed in the development of a research roadmap in the field, namely: 1) identifying the areas needing research, 2) reviewing the existing research landscape in building/wildfire fields concerning human behaviour and 3) documenting the challenges of and obstacles to additional research. During the workshop, the group's ongoing webinar series will also be discussed, providing an opportunity for workshop participants to suggest ideas for future webinar topics and for the group to promote the participation of early career researchers in the activities of the group.

Workshops

AI/ML in Fire Safety Engineering

Co-Chairs:

Sarah Scott, Sandia National Laboratories

Objectives and General Workshop Overview:

In this workshop, we will delve into the role of Artificial Intelligence (AI) and Machine Learning (ML) within the fire science community. As AI/ML continues to evolve, it is imperative to understand the implications of these technologies and how best to use them.

Scope and Format of Workshop:

This structured session will feature three invited talks, each focusing on the strengths, limitations, and future opportunities of AI/ML applications in fire science. Topics will include successful case studies

where AI/ML has enhanced predictive modeling, examples of failures, and future opportunities. Participants will have the opportunity to engage in interactive breakout discussions led by our speakers, fostering a collaborative environment to brainstorm innovative ideas and strategies for integrating AI/ML into fire science practices.

We aim to explore topics such as how we can effectively integrate current AI tools, such as large language models, into our workflows while ensuring the integrity and accuracy of our work. Additionally, we will discuss the ethical considerations surrounding the training data used in these models. We will also tackle important questions about applying ML models, ensuring that these models remain physically relevant and grounded in scientific principles. Furthermore, as AI tools become increasingly capable of solving routine problems, such as creating simple Python scripts, we must consider how to ensure that engineers in training understand the fundamentals necessary to critically evaluate AI-generated results.

Key themes will include:

- **Successful Applications:** Highlighting real-world examples where AI/ML has been effectively utilized in fire science.
- **Potential Pitfalls:** Addressing the challenges and limitations associated with AI/ML, including data quality issues, algorithmic biases, and the need for interdisciplinary collaboration.
- **Avenues for Future Exploration:** Identifying emerging trends and technologies that could shape the future of fire science, including advancements in remote sensing, real-time data analytics, the integration of AI/ML with traditional fire science methodologies, and the use of large language models.

The goal of this workshop is not only to foster thoughtful discussions about the use of AI/ML but also to connect researchers and encourage collaboration in this important area.

Energy Systems Safety

Co-Chairs:

Francesco Restuccia, King's College London

Objectives and General Workshop Overview:

With lithium-ion batteries becoming more widespread in consumer electronics, transport, and grid-scale energy storage, the issue of battery failure has become prominent. Furthermore, as more energy systems are implemented in new areas, such as the uptake of photovoltaics (PV) in residential and commercial buildings, the integration of energy generation and storage becomes more important, and so does its safety. Some areas with ongoing research needs include ignition and propagation, suppression, and effect of coupling fire hazards especially in the built environment. Battery Energy Systems Safety (BESS) is currently a hot research topic within our community, with many research groups throughout the world focusing on some of these largely unexplored questions.

This workshop will discuss the current understanding of these problems followed by a discussion of the research needs. Come prepared to learn and discuss needed measurements, diagnostics and models

that can be contributed by the fire safety science community. Discussions will span the following four areas:

1. **Ignition and propagation of fire energy storage systems – BESS focus:** what are the conditions for ignition/thermal runaway in battery energy storage systems, and what are the conditions for which thermal runaway will propagate from cell to cell?
2. **Failure criteria, heat release rate and methods of calculation for BESS:** what can be done to determine criteria of failure and exposure of BESS systems, quantify effectively heat release rates and what methods are effective in calculating different BESS failure scenarios?
3. **Integration of Energy generation and storage:** what hazards are presented by integrating energy generation and storage (PV, BESS, etc.), and how does it compare to other fire problems?
4. **Scaling, scientific tools, and limitations:** what will be required to go from understanding laboratory-scale energy storage system fires to large scale and complex scenarios?

Scope and Format of Workshop:

The workshop will consist of short introductions on the topics listed above along with a short list of possible fire safety science research needs from our invited speakers. These will be followed by a guided Q&A general discussion of research progress and future research needs, with opening to audience questions. It is hoped that this discussion of progress and needs will lead to synergistic networking toward future interactions and potential collaborations.