

# LITHIUM ION BATTERY SYMPOSIUM



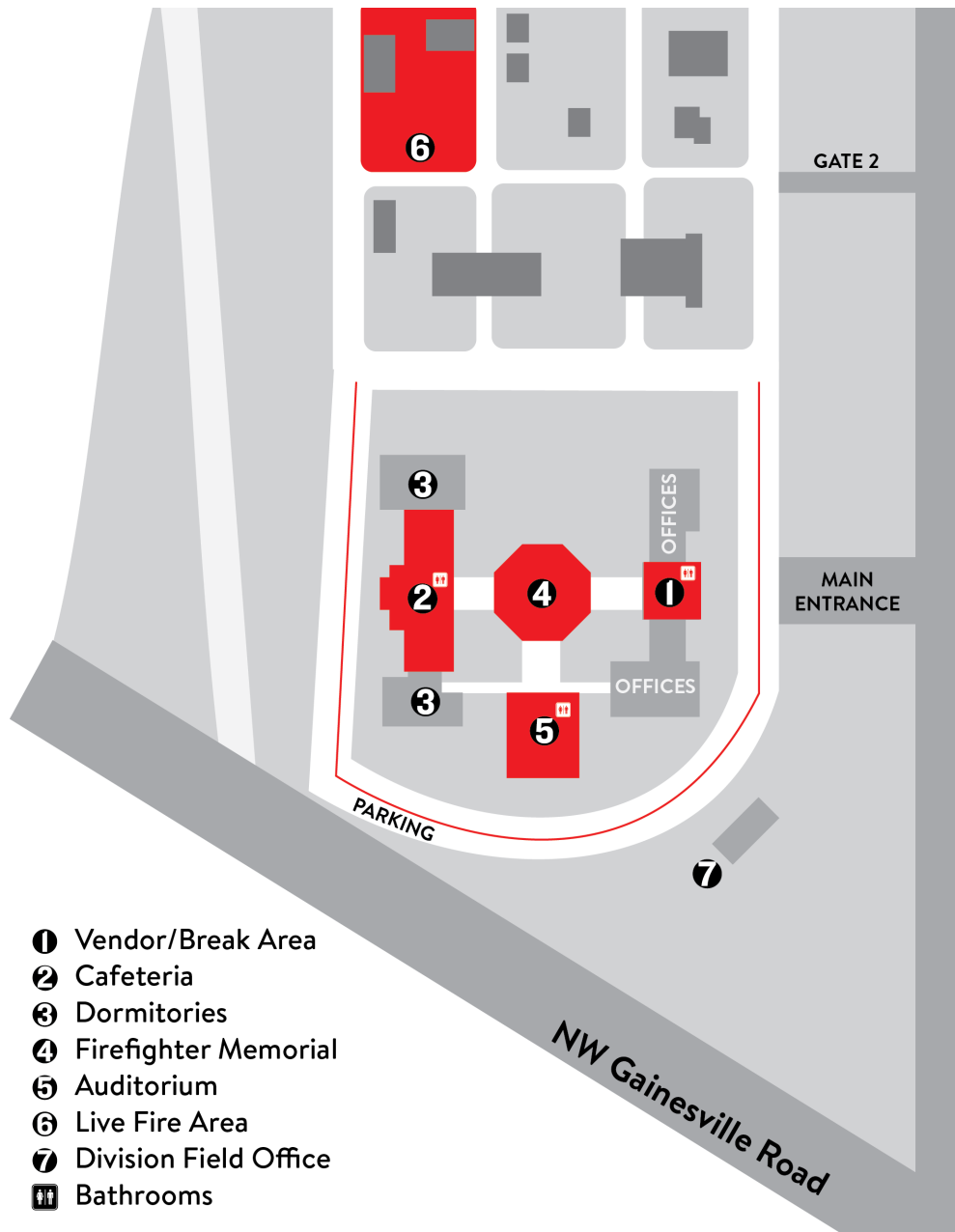
FLORIDA STATE FIRE COLLEGE  
SEPTEMBER 7-8, 2023

in collaboration with





# CAMPUS MAP



- ❶ Vendor/Break Area
- ❷ Cafeteria
- ❸ Dormitories
- ❹ Firefighter Memorial
- ❺ Auditorium
- ❻ Live Fire Area
- ❼ Division Field Office
- ♿ Bathrooms



# WELCOME

Welcome to the 2023 Lithium-Ion Battery Symposium!

The Division of State Fire Marshal and the Bureau of Fire Standards and Training are committed to being at the forefront of new and emerging technologies which impact the fire service and the safety of our communities. The management of Lithium-ion fires is one of the most critical issues currently facing the fire service. Over the past several years there has been an escalation in fires and fatalities due to Lithium-ion battery powered mobility devices, tools, equipment, and ESS in Florida and across the nation. During Hurricane Ian, CFO and State Fire Marshal Jimmy Patronis saw first-hand the difficulties of mitigating EV fires. This symposium provides insightful presentations, new information, and an opportunity to share strategies to keep our firefighters and communities safe.

I would like to thank our partners for their support: the Florida Fire Chiefs' Association, the Florida Fire Marshals and Inspectors Association, and International Association of Fire Chiefs; without them this symposium would not be possible. Additionally, I would like to thank our speakers for their willingness to share their insights, experiences, and expertise.

I urge you to take what you learn here, share it with your peers, and incorporate it into your procedures. I appreciate your participation and look forward to furthering our mission to safeguard the people of Florida!

JoAnne E. Rice

Director, Division of State Fire Marshal



# AGENDA - 9/7/23

## DAY ONE

0700–0800 Auditorium 5	Registration / Coffee Hour	
0800–0830 Auditorium 5	JoAnne Rice Michael O' Brian	Welcome
0830–0930 Auditorium 5	Brian Vasser	<i>EPA Li-ion Battery Recycling Incidents</i>
0930–0945 Vendor Area 1	Break	
0945–1100 Auditorium 5	Patrick Durham	<i>Electric Vehicle Incident Response</i>
1100-1215 Auditorium 5	Mitch Peterson Joe McClain	<i>GMC Battery Electric</i>
1215–1315 Cafeteria 2	Lunch Break	
1315–1415 Auditorium 5	JoAnne Rice James Hammond Larry Williams Matt Marshall	<i>Hurricane Ian Response to Li-ion Fires</i>
1415–1530 Auditorium 5	Dave Bryson Eddie Murphy Tony Thampen Brian Metzger	<i>Federal Update on Li-ion Battery Safety</i>
1530–1545 Vendor Area 1	Break	
1545–1615 Auditorium 5	Clay Hendon	<i>Birmingham, AL Interstate Motor Carrier Li-ion Incident</i>
1615–1700 Auditorium 5	Adam Barowy	<i>ESS and Current Testing by UL-FSRI on Garage Incidents</i>



# AGENDA - 9/8/23

## UPDATED DAY TWO

0700–0800 Vendor Area ①	Vendor Area Open/ Continental Breakfast	
0800–1000 Live Fire Area ⑥	Kenneth Yost Oscar Rodriguez James Russo Ryan Darley Doug LeValley	Field Demonstrations SERC BEST/Turtle Darley/Li Fire
1000–1030 Vendor Area ①	Break	
1030–11015 Auditorium ⑤	Gary Sharp	Common Li-ion Battery Emergencies
1115–1145	COURTYARD	EV Vehicle and Overpack Demos
1145–1245 Cafeteria ②	Lunch	
1245–1345 Auditorium ⑤	Elijah Flowers Corey Hannahs Tim Mossgrove Jeni Pierce	Panel Discussion ESS Fire Codes
1345–1500 Auditorium ⑤	Paul Hayes	Understanding UL 9540A and the role of the Fire Service in System Permitting
1500–1515 Vendor Area ①	Break	
1515–1545 Auditorium ⑤	Christina Francis	Tesla ESS and VR
1545–1645 Auditorium ⑤	Michael McConnell	Tesla's ERG's and EV Incident Responses
1645-1700	Rice, O'Brian	Closing Remarks



# NETWORKING EVENT

*Please Join Us*



**September 7, 2023**

**6:30pm—8:00pm**

Terrace on the Square  
Hilton Garden Inn, Downtown Ocala  
120 East Silver Springs Blvd

# SPEAKERS



## **Adam Barowy**

Adam Barowy is a Research Engineer at UL's Fire Safety Research Institute (FSRI), leading the research to better understand fire and explosion hazards created by Lithium-ion battery failures. Mr. Barowy has 20 years' experience within fire safety including developing UL Standards and Test Methods, running large scale fire testing programs, generating test data to improve firefighting tactics, LODD/near miss incident reconstruction, evaluation of firefighting equipment and volunteer fire service. Adam obtained his BS in Mechanical Engineering at UMass Amherst and MS in Fire Protection Engineering from Worcester Polytechnic Institute

## **Dave Bryson**

David Bryson currently leads the NHTSA's development and revision of formal EMS clinician education, including implementing the *EMS Education Agenda: A Systems Approach*. He has served as the Contracting Officer's Representative with the development and revisions of the *National EMS Core Content*, the *National EMS Scope of Practice Model*, and the *National EMS Education Standards*. David represents the NHSTA with numerous efforts to improve ground ambulance safety, providing subject matter expertise for electric vehicle crashes and fires, and serving as the office's liaison to EMS educators and the national fire service.

## **Ryan Darley**

Ryan has grown up around the fire service; not only is he a firefighter in Plymouth, MN, but he also serves as the VP of sales for Darley. In 2017, he began studies and ran focus groups to look for solutions for battery fires after observing issues coming from trends in electrification. In 2018, Darley introduced the car fire blanket to the USA and also took on the emergency plug and EV nozzle lines. With electrification/batteries being the "hottest" issue in fire he continues to look for solutions to mitigate these types of emergencies.

## **Sean DeCrane**

Sean DeCrane is the Director, Fire Fighter Health and Safety Operational Services for the International Association of Fire Fighters based in Washington, DC. Prior to this, Sean was a Research Engineer Associate for UL Solutions focused on developing strategic planning, project prioritization and implementation for the UL Fire Research and Development Team while assigned to the Principal Engineers Team for UL's Built Environment COU. where he was responsible for engaging with various industry organizations with a focus on the international fire service. Sean served as a 25+ year veteran of the Cleveland Division of Fire, retiring as a Battalion Chief.



# SPEAKERS

## **Patrick Durham**

Patrick Durham currently serves as the Captain and Training Officer at Station 4 in the Troy Fire Department, located in Michigan. Beyond his firefighting role, Durham is also a mechanical engineer who specializes in advanced development projects within the automotive industry. He has been involved in various projects, including his recent work on designing a multi-material battery enclosure specifically tailored for electric vehicles.

## **Elijah Flowers**

Elijah Flowers is the Senior Codes Analyst for the Division of State Fire Marshal. Previous to this, Elijah worked as an Engineering Specialist for the Plans Review section, and has an extensive background in the construction industry.

## **Christina Francis**

Ms. Francis currently serves as Senior Staff Fire & Regulatory Specialist for Tesla, Inc. With almost 30 years in the fire protection industry, her experience includes design, construction management, loss prevention, risk management, and code consulting on a variety of industrial projects throughout the world. Ms. Francis has a Bachelors Degree in Mechanical Engineering from Auburn University, is a registered professional engineer in Fire Protection and is a Certified Fire Protection Specialist.

## **James Hammond**

James Hammond has been with the North Collier Fire Control & Rescue District since 1997, currently serving as the Assistant Chief of Operations. He has been involved with the District's HazMat Special Team, the Marine Emergency Response Team, and the Honor Guard program. Chief Hammond has his Bachelor's degree in Fire Services Administration from Columbia Southern University.

## **Corey Hannahs**

Corey Hannahs is a Senior Electrical Content Specialist at the National Fire Protection Association (NFPA). In his current role, he serves as an electrical subject matter expert in the development of products and services that support NFPA documents and stakeholders. Corey is a third-generation electrician, holding licenses as a master electrician, contractor, inspector, and plan reviewer in the state of Michigan.





# SPEAKERS

## **Paul Hayes**

Hayes has over 30 years of principal engineer experience and managing special hazards asset protection fire companies for the industrial and power markets. Paul consults with Energy Storage Systems and utility companies with appropriate mitigation technologies, risk hazard evaluation and application, AHJ education, and design specifications to help define best practices for the industry.

## **Clay Hendon**

Hendon is the Special Operations Battalion Chief for Birmingham Fire and Rescue (A-Shift). In addition to the traditional fire and EMS response, the Battalion responds to Haz-Mat or Technical Rescue related calls.

## **Jim Lanier**

Jim Lanier, ENP, MPA has been involved in public safety for over 30 years with experience in firefighting, EMS Paramedic (including 18 years at Sunstar EMS in Pinellas County, FL), and 911 emergencies. Jim holds a Bachelor of Science degree in Emergency Management and has a Master's Degree in Public Administration. In addition to being a NENA Emergency Number Professional (ENP) Jim is a Fire, Medical, and Q Instructor with the IAED as well as an IAED Board of Accreditation Member. Jim is also a member of the OnStar Public Safety Council.

## **Doug LeValley**

Douglas LeValley is a 42-year veteran of the fire service. He serves as division chief of special projects for the Seminole Tribe Fire Rescue Department, which is headquartered in Hollywood, FL. Previously, he served with Fort Lauderdale, FL, Fire Rescue and as a team leader for FEMA South Florida Task Force II USAR. LeValley is the founder of Advanced HazMat Management, which offers the Street Smart Chemistry course for hazmat team members. He is the author of "HAZMAT911." LeValley has been a fire service educator for more than three decades. He has served as a consultant for the branches of the military in the discipline of downrange hazmat recon, identification and mitigation.

## **Matt Marshall**

Matt Marshall has currently serves as the Deputy Fire Chief of Marco Island Fire Rescue. His over 20 years of experience in the fire service has included work with the Southwest Florida US&R Task Force 6, Fire Battalion Chief of Logistics and Special Operations for Cape Coral Fire Department. In addition, Marshall serves on several HazMat related committees throughout the state of Florida.



# SPEAKERS

## **Mike McConnell**

Mike McConnell has been with Tesla for over 12 years, currently as the Technical Lead of Emergency Response. His background includes Operations Management and Automotive Technology. He has a Bachelor's Degree in Industrial Technology Education from Purdue University.

## **Brian Metzger**

Brian is responsible for ensuring that the U. S. Fire Administration remains engaged in the field of fire protection engineering, focusing on fire prevention, data-informed outreach, building codes and standards, application of fire science and dynamics and wildland-urban interface fire mitigation. Along with being the point of contact for upcoming research initiatives with various federal partners, Brian is an active member of the Society of Fire Protection Engineers.

## **Tim Mossgrove**

Chief Mossgrove has worked with three career departments over the last 40 years, and currently serves as the Interim Fire Chief for Plant City Fire Rescue. Chief Mossgrove holds a Master's Degree in Public Administration, and is a 2015 graduate of the National Fire Academy's Executive Fire Officer Program.

## **Eddie Murphy**

Eddie Murphy is the Emergency Response Liaison for Outreach, Engagement, and Grants for the Office of Hazardous Materials Safety in Washington, DC. Mr. Murphy has more than 30 years of experience in hazardous materials and oil spill preparedness, response, training, and emergency management. He has been a PHMSA employee since 2012, previously serving with Hillsborough County Fire Rescue Office of Emergency Management in Tampa, Florida, and is veteran of the United States Coast Guard.

## **Michael O'Brian**

Michael O'Brian is the Fire Chief for the Brighton Area Fire Authority (BAFA) in Brighton Michigan. Chief O'Brian is a 26 year veteran of the fire service, with a demonstrated history of leadership based on a passion for operations, firefighter fitness, and community risk reduction. Chief O'Brian has served locally, in the State of Michigan and is a member of the Board of Directors for the IAFC, a post he has occupied since 2017.



# SPEAKERS

## **Mitch Petterson**

Mitch Petterson is the Emergency Services Outreach Leader at General Motors. Previously, he progressively served for over 28 years at the Independence Township Fire Department as a firefighter, engineer/paramedic, Deputy Chief, and as the Fire Chief for six years.

## **Jeni Pierce**

Jeni Pierce is the Manager of Training & Education for the National Fire Sprinkler Association. While Jeni is new to the NFSA team, she has been active with the Florida Fire Sprinkler Association for over 15 years, conducting side-by-side demonstrations and actively advocating for legislation that impacts fire and life safety. Jeni has been with the fire service for the last 20 years, most recently serving as the Division Chief/Fire Marshal for the City of Marco Island (FL). She is currently finishing her term as the 1st Vice President of the Florida Fire Marshals and Inspectors Association, and serves as the Secretary of the Fire Defense Coalition.

## **JoAnne Rice**

JoAnne E. Rice is a 33-year veteran of the fire service and is currently serving as the Director of the Florida Division of State Fire Marshal. Director Rice began her fire and emergency service career as a firefighter/EMT with Gainesville Fire Rescue (GFR) in 1990. She completed her career at GFR as the Deputy Fire Chief, and served as the Interim Chief for a period of time. Director Rice is a designated Chief Fire Officer through the Center for Public Safety Excellence, holds a Master of Public Administration, a bachelor's degree in health science and two associate degrees in fire science and EMS.

## **Oscar Rodriguez**

Oscar Rodriguez has built his impressive career in fire service training for the last 18 years, currently as the Training Chief for the City of Margate. Serving also as the Captain of the City of Margate Fire Department, Rodriguez has increased their personnel readiness by empowering responders and warfighters with integrated training and guidance.

## **Gary Sharp**

Gary Sharp is a partner at Hazard3, a company that assists the fire service in building capability and increasing personnel readiness by empowering responders and warfighters with integrated training and guidance. He has over 22 years of fire service experience as a HazMat Team Leader/Program Manager, Deputy Fire Chief, and Instructor in the state of Michigan.



# SPEAKERS

## **Tony Thampen**

Dr. Tony Thampen is the Lead EV engineer in the Office of Crashworthiness Research / Vehicle Safety Research at the National Highway Traffic Safety Administration. He leads technical activities in support of NHTSA's EV Battery safety initiative. Prior to NHTSA, Tony was a research engineer in the U.S. Army's Ground Vehicle Systems Center Energy Storage team where he was the principal investigator on a DOD S&T multiyear effort developing specification & prototypes for the High Voltage batteries for US ARMY vehicle applications. Dr. Thampen has a Chemical Engineering PhD, and significant experience in the Oil / Chemical / Energy Storage commercial sector developing energy solutions.

## **Brian Vasser**

Bryan is an On-Scene Coordinator for the US Environmental Protection Agency in Region 4. Bryan has over 15 years of experience responding to releases of hazardous materials and oil throughout the US. Bryan has recently responded to several lithium ion battery fires at recycling facilities and is the lead of the EPA Lithium-Ion Battery Taskforce, attempting to share information with responders across the country and develop training and standard operating guidance to assist in future responses.

## **Larry Williams**

Division Chief of Fire Prevention Larry Williams is responsible for overseeing the Fire Prevention Bureau. In this role he takes the lead in all fire inspections of commercial buildings, fire investigations, permitting, and fire prevention for Sanibel Island. Division Chief Williams ensures that fire codes are followed and that all commercial buildings comply with these codes. Chief Williams holds Fire Safety Inspector certifications and many other fire safety code certifications.

## **Kenneth Yost**

Kenneth Yost has almost 30 years of fire service experience, starting his career as a Firefighter/Paramedic in 1995. He has been serving as the Division Chief of Training for the Broward Sheriff's Office Fire Rescue since 2019, concentrating on Public Safety, Emergency Management Services, and Incident Command.



# RESOURCES



NHTSA Interim Guidance for Electric and Hybrid-Electric Vehicles Equipped with High Voltage Batteries



NFPA Electric Vehicle Safety Training



NFPA Individual Vehicle Response Guides



NFPA Bulletin on Submerged Hybrid/Electric Vehicles



Tesla First Responder Information



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# RESOURCES

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