

HOTZONE 2024

Pre-Conference Workshops **Thursday, October 17th**

A1: “Flawed Situational Awareness: A Detrimental Mistake” (8 Hours)

On Site

Most emergency service providers or general industry workers who work around hazardous materials may know intuitively, that strong situational awareness is an important aspect of safety. However, many do not understand how detrimental it can become when your situational awareness erodes or becomes flawed. This program focuses on some of the most pervasive and detrimental situational awareness barriers first responders and hazmat team members will face while operating in stress-filled, dynamically changing hazardous environments. Attendees of this program will learn what the SA development process is, specific examples of detrimental barriers that can erode situational awareness and the best practices to overcome these detrimental barriers.

Jeremy Saul

Open Seating – Lunch on Your Own

A2: “CAMEO for Tier 2 Reporting, Data, Management, and a Planning/Response Tool” (8 hours) On Site

There have been some changes to the CAMEO programs and we can show the latest. This session will provide participants – planners, or responders - with a review of the latest CAMEO Suite software through a series of scenarios. **Up to 20 computers will be available to work 'hands-on' with the programs. Students may also run the Suite from provided flash drives on their own computer.** Participants will use CAMEO Data Manager, Cameo Chemicals, MARPLOT, and ALOHA in Planning and Response Scenarios. An update on the latest changes, and future changes will be provided and participants' questions regarding the software will be addressed. Students are encouraged to bring their questions, problems, files or any other issues they are having with their programs. Presenters will provide group/individual help trying to solve these issues.

Tom Bergman, Bob Bradley **Limited to 25 – Lunch on Your Own**

A3: “Industrial HazMat: Unstable Materials, Monomers, & Organic Peroxides” (Morning) On Site

Energy is always dangerous at a hazardous materials emergency. After explosives, unstable materials are some of the most reactive and unpredictable situations responders can face. Unstable materials may decompose, condense, polymerize or self-react. Temperature, shock, light, contaminants, incompatibles, or the loss of inhibitor may trigger an uncontrolled exothermic reaction. Monomers, when uncontrolled, may undergo runaway polymerization reactions. Organic peroxides inherently possess two or even three sides of the fire triangle and as a result may rapidly, exothermically, and sometimes explosively, disintegrate. Peroxidizable chemicals are capable of reacting with oxygen in the air to form potentially explosive peroxides. There is no single hazard class for unstable materials because they often present multiple hazards.

A3: “Industrial HazMat: First Due at the Chemical Plant” (Afternoon) (8 Hours) On Site

Emergency responses to incidents in the laboratory can be extremely challenging. The thought of wild-haired scientists in white lab coats holding colorful, bubbling beakers of chemicals only adds to the mystery and creates responder anxiety. Inexact science, hazardous chemicals, biologicals, radioactive materials, specialty gases, and complicated laboratory apparatus and instrumentation all pose special challenges. Additionally, the physical layout of laboratory facilities further complicates the response. This workshop helps take the mystery out of laboratory emergency response by enhancing situational assessment, risk-based decision-making, and responder safety.

Keith Silverman, Mike Callan, Bill Cullen

Open Seating – Lunch on Your Own

A4: “When Meters Matter- Air Monitoring for First Responders” (8 Hours) On Site

The Meter Guys is an innovative simultaneous hands-on lecture meter training program focused on Emergency Responders, Hazmat Personnel, and Industrial workers. This class provides students with the skills and competencies on how to properly use a Multi-Gas Meter, understand the readings, and interpret the implications of such during an emergency response. The Meter Guys program is tailored to our audience, making the information easy to grasp and comprehend, thereby meeting your training needs. There is no other hands-on meter class of this caliber. Our students will tell you so!

Scott Russell, Dan Warchol - The Meter Guys Limited to 45 Students – Lunch on Your Own

A5: “Field ID Laboratory – Heinz 5-Step Method” (8 hours) On Site

This 8-hour “wet chemistry” course will consist primarily of hands-on lab work with liquid and solid unknown chemicals. The properties of various substances and chemical families will be discussed as each sample is analyzed and tested. Safety, personal protection, and proper technique when working with chemicals will be emphasized and stressed. Participants will work in small groups and test approximately 12 samples throughout the day. Samples will consist of corrosives, oxidizers, flammable and combustible liquids, water reactive materials, and others. Physical properties such as appearance, thermal stability, vapor pressure and water behavior will be analyzed and discussed as it relates to hazard determination and response tactics for hazardous materials team members.

Brian Heinz, Joshua Matlock Limited to 30 Students – Lunch on Your Own

A6: “So You Want to Be a HazMat Medic” (8 Hours) On Site

This interactive 8-hour presentation takes the audience through the important steps of identifying the need for a HM Medical program, how to define the capabilities of the program, equipment, drug needs, protocols and identifying the training and retraining program. To demonstrate the need, a number of case studies will be reviewed and how trained medical personnel can respond and manage patients generated from both large and small hazmat incidents. Combined, the instructors have over 50-years of hazardous materials medical response experience and have shared their knowledge and experience through numerous publications and course development. This presentation will provide critical information to those medical responders who want to develop a program and the State HM Medical Protocols will be reviewed and evaluated for use agencies wishing to take on this responsibility. Also, the discussion on obtaining buy in from the medical director and from the receiving facilities. Important lessons learned (what worked and what doesn't) will be reviewed and evaluated. Real case studies will be used to identify how usable the program and protocols are.

Toby Bevelacqua, Michelle Murphy Open Seating – Lunch on Your Own

A7: “Tactical Chemistry” (8 hours) On Site

Tactical decisions at hazardous materials emergencies are heavily influenced by the released chemicals and their properties. Using NFPA 470 (2022) Chapters 34 and 38 as the framework, we will make tactical decisions at hazardous materials incidents fall into place using chemical demonstrations, scenario-based exercises, and hands-on chemical identification exercises using a variety of air-monitoring and sample identification equipment. We will examine the effect of chemical class, concentration, and complexity of mixtures on detection, identification, and product control. The class is highly interactive with students leading the direction of the class as we discuss multiple scenarios culled from the news and experience to illustrate the chemistry of hazardous materials.

Rick Dufek, Chris Weber Open Seating – Lunch on Your Own

A8: “Houston Ship Channel Industrial Tour” (8 Hours)**Off Site**

This workshop will start with a classroom session at the hotel on Thursday morning. Then the students will travel to the Houston Ship Channel where they will board one of the Houston Fireboats for an up-close waterside tour of the Houston Ship Channel

Bill Hand & Richard Lawhorn**Limited to 25 Students – Lunch Provided****A9: “Hands On HazMat” (8 hours) HFD Jahnke Fire Training Facility****Off Site**

In this 8 hour training session, we will have meter and monitor training, learning when and how to use meters/monitors, how they work and what the best options are for force protection. Also, we will have hands on training with cold tapping a MC-306/DOT-406, learning the parts of a hydrolet valve and how to repair it, learning the parts of a Betts valve and the proper location and application/install of it on an MC-307/DOT-407 and flaring operations. **Students should bring work gloves and safety glasses.**

Tony Janke, Trey Bourgeois, and Houston HazMat**Limited to 25 Students - Lunch will be provided by FarrWest****A10: “Physical and Chemical Properties for Risk Based Response – Interactive Experience” (8 hours)****Off Site - The Woodlands Emergency Services Training Center**

Hazards, Risks, and Consequences during this 8 hour highly interactive class, participants will understand the significance in using physical and chemical properties to assess hazards encountered at hazardous materials incidents, apply physical and chemical properties to manage risk during hazardous materials incidents, and understand consequences of how things can go wrong on hazardous materials incidents. During this lecture flash point, flammable range, boiling point, vapor pressure, auto ignition temperature, molecular weight, vapor density, and solubility will be demonstrated. This lecture will also demonstrate the properties of liquefied compressed gases as well as cryogenics. These high energy fast paced demonstrations will leave the audience / students with a keen awareness of street smart chemistry of hazardous materials and how to apply physical and chemical properties to Risk Based Emergency Response!

Brian Ramsey Limited to 25 Students – Lunch Provided**A11: “Surviving the Hot Zone” (8 Hours) Harris County Fire Training Field Off Site**

Emerging threats, suit selection, and decontamination methods are impacting our operations in the hot zone. There is more to it than Level A or Level B. In this 8 hour class we begin with a classroom presentation covering all of these and then move into hands on exercises that will prepare you to survive hot zone operation. Use different levels of PPE in challenging situations, using a risk based decision process identify the hazards, the PPE and the decon methods you will use. Learn tricks of the trade to overcoming in suit emergencies, low air, and other emergencies. We must be prepared when things do not go “right”.

Dr. Christina Baxter, Gary Sharp, Toby Frost, Rick Meehan, The Harris County HazMat Team**Limited to 40 Students – Lunch Provided****A12: “The EOC’s Role in Major HazMat Incidents” (8 Hours)****Off Site - Harris County Office of Homeland Security & Emergency Management EOC.**

This off site tour will take you to the Harris County Emergency Operations Center where you will receive a capabilities brief, review of the San Jacinto River Fire case study, and EOC simulations.

Joe Leonard, Misty Gunn**Limited to 40 Students – Lunch Provided**

Opening Session
Friday, October 18, 2024

KEYNOTE:

HazMat Trends to Watch in 2024/2025

Recent changes in World dynamics have resulted in a heightened threat posture for the offensive use of CBRNE materials. This increased threat from both State actors and terrorists coincides with a time where technological hazards, such as alternative fuels and power sources, are also broadening. By understanding the status of the military, terrorism, and technological threats, we can address potential mitigation solutions.

Solutions must cover the realm of operational response from pre-planning through detection, protection, decontamination, and destruction. Through a deep understanding of the available solutions, both old and new, we can apply the appropriate solution sets to minimize the overarching risk.

This workshop will focus on recognizing the threats and applying the appropriate solutions in an operationally relevant timeline. With the broadening of the evolving threat, it is critical that interagency components build partnerships early as these threats will address all sectors (defense, fire, law enforcement, customs, environment, etc.). Understanding the capabilities of each sector is critical to a timely and successful operational response.

Dr. Christina Baxter

GENERAL SESSION:

Kindergarten Taught Me All I Needed to Know About HazMat!

This presentation provides a retrospective of a HazMat responder's journey and focuses on the basic kindergarten lessons that apply to HazMat response. Think of it as – had I known this when I started, responses would have been much easier. Lessons learned, case studies and some of the fun aspects of being involved in HazMat response.

Chris Hawley

Conference Workshops
Friday, October 21st
1:00 PM

D1: “Hydrogen Fuel Cells in Transportation”

90 Minutes

This interactive workshop will be presented by a panel of subject matter experts from HazMat Response, Transportation Research, and Training Institutions.

Dr. David Bierling

D2: “Aloha; The Models are Accurate but Need to be Interpreted”

Part 1 of 2

ALOHA , the responders air model, has been tested and validated to actual release experiments and the model predictions have proven to be accurate... provided you are in a desert with perfectly flat and impermeable ground and no obstructions. Unless you live there, YOU (as the modeler) need to interpret what the prediction says and what you really think happen. This hands-on session will explore if, when and how air models can help you in planning and emergency response threat zone and chemical behavior predictions. The Jack Rabbit experiments at Dugway will be explored and related to air model results in ALOHA and the ERG. Case studies from actual releases (experimental and accidental) will be discussed and the reality of the release and model results will be compared and explained. Other modeling products - and their pros and cons will also be discussed as will the basics of air dispersion. A limited number of computers for student use will be available and students are welcome to bring their own computers. The program will be available for installation.

Tom Bergman, Bob Bradley

D3: “Accidents IMPACTS More Than You; Randy’s Story”

90 Minutes

When somebody suffers a debilitating accident and is injured, the impact extends well beyond that person. Your family, extended family, and close friends are often mentally affected by the person’s struggles, long rehab, and in some cases the life-changing permanent impacts in yours and their lives as they support you. Come hear “Randy’s Story”. It will touch you in many ways.

Randy Royall

D4: “Railroading 101”

90 Minutes

This workshop is an introduction to the railroad industry, BNSF specific, but the concepts can be utilized for other railroads as well. This is an interactive presentation and open to questions, comments, and feedback from all attendees. A classroom syllabus will be given to each student to keep and use for future reference.

Clay Reid

D5: “Electroplating Emergencies”

90 Minutes

Electroplating and electroless plating operations use a variety of chemicals, including oxidizers, toxic metal solutions, flammable solvents for degreasing, strong bases, and strong acids. Particularly hazardous chemicals include cyanide baths for electroplating gold and nitric acid/ammonium bifluoride solutions for cleaning aluminum and other metal surfaces. A comprehensive review of the equilibrium between ammonium bifluoride and hydrofluoric acid will be presented in conjunction with the unique hazards of HF and the unique medical treatment required for exposure to HF. This course will review the chemicals involved in industrial accidents at plating companies and the various chemical processes that use corrosive and toxic chemicals for plating operations. The difference between electroplating and electroless will be explained and will be reinforced with classroom demonstrations. A risk-based response using the APIE model will be discussed to

analyze the chemical hazards and develop a plan to respond to chemical spills and potential exposures at plating companies. Monitoring capabilities will be discussed for each category of chemical hazards.

Tom Murdock

D6: “Hydrofluoric Acid”

Part 1 of 2

This very informative workshop will cover the chemical and physical properties of one of the most aggressive industrial acid and live demonstrations of medical counters needed for dermal exposures.

Evelyn Jackson, Bubba Cooper

D7: “Propane Response 101 to Advanced Tactics”

90 Minutes

The workshop is designed to provide the student with general information needed to respond to a propane leak involving a bulk transportation vehicle (rail, MC331 tanker or bobtail), bulk storage (250 gallon and larger), common residential and portable tanks. We'll discuss tried and true response practices and emerging technologies and tactics. The course title, "Propane Response, 101 - to Advanced Tactics" describes the path we will follow from beginning to end. What is propane, what are the hazards, preplanning, response, and mitigation tactics that include: doing nothing, vapor dispersion, product control, product transfer, flaring and water injection.

Ron Huffman

D8: “Air Monitoring Considerations for Initial Arriving HazMat Response”

Part 1 of 2

This course examines the strengths and weaknesses of standard 4 gas instruments that are carried by many hazmat teams and first arriving fire apparatus. In today's world critical decision making is predicated on not only using instrumentation but using it correctly. This class goes into essential decision making when using a 4-gas instrument for qualitative and quantitative monitoring at hazardous materials incidents. Participants will understand the following concepts, T-90 time and its relevance to accuracy, correction factors and when to apply, and common mistakes while using air monitoring equipment.

Brian Ramsey

D9: “Hands-On Hybrid Decon”

Part 1 of 2

You need hands-on when doing Hybrid Decon. Busting open kits, using real-world equipment, and testing methods, procedures, and technologies is the best way to understand how decon can suck a little less. This session is designed to hit a few main points and immerse attendees into decon operations and the implementation of various kits and technologies to drive decision-making capabilities during our worst days of responding. Having an all-hazards and cost-effective approach to decontamination of HazMat and CBRNe missions reduces time in the suit, minimizing training needs and keeps money in the bank for the wish lists. Hands-on with Hybrid Decon is ready to burn the bridge with pain points and frustrations with antiquated techniques and labor-intensive processes. Decon doesn't have to suck!

Frank Roberts

D10: “The Challenging Foursome”

Part 1 of 2

This presentation will address similarities and differences, physical and chemical properties, transportation, storage, use and general actions and precautions to take when responding to a release involving Liquefied Petroleum Gas, Chlorine, Anhydrous Ammonia, and Liquefied Natural Gas. Several case studies involving each gas will be presented.

Greg Socks, Bill Hand, Jason Waterfield, Bob Bradley

D11: “Situational Awareness for Hazardous Materials”**Part 1 of 2**

Most emergency service providers or general industry workers who work around hazardous materials may know intuitively that strong situational awareness is an important aspect of safety. However, many do not understand how detrimental it can become when your situational awareness erodes or becomes flawed. This program focuses on some of the most pervasive and detrimental situational awareness barriers first responders and hazmat team members will face while operating in stress-filled, dynamically changing hazardous environments. Attendees of this program will learn what the SA development process is, specific examples of detrimental barriers that can erode situational awareness and the best practices to overcome these detrimental barriers.

Jeremy Saul**Conference Workshops
Friday, October 18th
3:00 PM****E1: “HazMat Pre-Entry Briefing”****90 Minutes**

The pre-entry briefing is the most important safety component of the mitigation process and will make (or break) an incident. Unfortunately, most pre-entry briefings are incomplete and do not provide all the information required to mitigate an incident safely and effectively. This requires communicating a lot of critical information to entry team members and the backup team in a concise format. The list is robust, but an effective pre-entry briefing should not require more than a few minutes to relay all this information. The Incident Commander ensures a pre-entry briefing is presented prior to allowing personnel in the Hot Zone; the Haz Mat Officer identifies the procedures and the Safety Officer conducts the safety briefing for personnel performing the tactical operations. Each participating Technician must know how to identify the components of a pre-entry briefing because every one of these components is essential for a successful outcome. Bring your team’s pre-entry briefing checklist to this workshop to compare. We will conduct simulated safety briefings based on scenarios and share what must be provided to the entry team members.

Rick Emery, Darrell Wiseman**E2: “Aloha; The Models are Accurate but Need to be Interpreted”****Part 2 of 2**

ALOHA , the responders air model, has been tested and validated to actual release experiments and the model predictions have proven to be accurate... provided you are in a desert with perfectly flat and impermeable ground and no obstructions. Unless you live there, YOU (as the modeler) need to interpret what the prediction says and what you really think happen. This hands-on session will explore if, when and how air models can help you in planning and emergency response threat zone and chemical behavior predictions. The Jack Rabbit experiments at Dugway will be explored and related to air model results in ALOHA and the ERG. Case studies from actual releases (experimental and accidental) will be discussed and the reality of the release and model results will be compared and explained. Other modeling products - and their pros and cons will also be discussed as will the basics of air dispersion. A limited number of computers for student use will be available and students are welcome to bring their own computers. The program will be available for installation.

Tom Bergman, Bob Bradley

E3: “Heat: The Silent Killer”**90 Minutes**

I have taken thirty years of Emergency medical experience, coupled with industrial knowledge and Fire service to develop a training which relates to a silent but dangerous plague. This training will discuss a topic that is rarely talked about and/or taken seriously. Across the United States, temperatures can cause life-altering situations within the workforce. Heat-related emergencies can present as simple as a cramp but can quickly progress into a stroke complex or cardiac illness. A simple question of body mechanics and physiological functions of the human body could save a life. Why are we putting our firefighters and first responders at risk for devastating consequences? Heat, The Silent Killer was developed to bring awareness to a simple process that rarely is discussed. Stages of this emergency and safety cultures will be combined with the understanding of how PPE helps when used properly; but, can also be dangerous if full safety considerations are not understood. The training is broken down into different stages of knowledge including: understanding the human body and its processes, rehabilitation (the how and why), solutions (stopping and reversing the heat stressors), engineering controls and safety concerns. This year, we have tailored this training to meet the needs of Fire Departments who are active in suppression and hazardous materials incidents with justification and explanation of NFPA 1584 (Rehabilitation process Standards).

Tim Crockett**E4: “Gallup, NM. Railroad Case Study”****90 Minutes**

This workshop is a case study involving our derailment in Gallup, NM involving one of our busiest tracks. This derailment contained 35 cars with most catching on fire, 6 of the cars were loaded propane cars. Multiple agencies were involved: (local/state/federal/tribal), shut down I-40 for 30 hours and required the evacuation of 52 people. This presentation will talk about the importance of a Unified Command and the intricacies and response considerations of dealing with the potential of 6 propane cars that could have a BLEVE. The derailment took place on April 26, 2024.

Clay Reid**E5: “Hydration: Hero or Pain in the Rear”****90 Minutes**

With so much attention on firefighter health & wellbeing, there has been a lot of effort on reducing the exposure to toxic materials of emergency incidents. Whether the scene is a hazardous materials event or a residential fire, repeated exposure to toxins can cause long term diseases such as cancer. This presentation will focus on the need to prevent after-incident heart attacks and strokes. We will explore why the sauna is NOT an option for sweating it out. We will also investigate hydration drinks and powders, talk about the sweating process, and how these issues influence the health and wellbeing of the first responder.

Michelle Murphy, Toby Bevelacqua**E6: “Hydrofluoric Acid”****Part 2 of 2**

This very informative workshop will cover the chemical and physical properties of one of the most aggressive industrial acid and live demonstrations of medical counters needed for dermal exposures.

Evelyn Jackson, Bubba Cooper**E7: “Put Them Out or Let Them Burn”****90 Minutes**

Gasoline tanker truck fires can be quite impressive and challenging. Let’s talk about how these tanks work, what happens when they are on fire, and the factors that drive tactics.

Rick Meehan

E8: “Air Monitoring Considerations for Initial Arriving HazMat Response” [Part 2 of 2](#)

This course examines the strengths and weaknesses of standard 4 gas instruments that are carried by many hazmat teams and first arriving fire apparatus. In today’s world critical decision making is predicated on not only using instrumentation but using it correctly. This class goes into essential decision making when using a 4-gas instrument for qualitative and quantitative monitoring at hazardous materials incidents. Participants will understand the following concepts, T-90 time and its relevance to accuracy, correction factors and when to apply, and common mistakes while using air monitoring equipment.

Brian Ramsey

E9: “Hands-On Hybrid Decon” [Part 2 of 2](#)

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Greg Socks, Bill Hand, Jason Waterfield, Bob Bradley

E11: “Situational Awareness for Hazardous Materials” [Part 2 of 2](#)

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Jeremy Saul

Conference Workshops
Saturday, October 19th
8:00 AM

F1: “Street Smart HazMat; Safe, Unsafe, Dangerous”

Part 1 of 2

Street Smart Haz Mat is a practical tool for making sense of any Haz Mat incident. Determining if it is Safe? Unsafe? or Dangerous (SUD) Safe, unsafe, or dangerous is one of the most important functional tools for making decisions in the world risk-based response. In Hazmat or fire response, the safety of response personnel is crucial. Sadly, Hazmat responders still have problems with hazard assessment and risk evaluation. They cannot even answer the simplest questions is it Safe? Unsafe? Or Dangerous? Based on the principles of Safe, Unsafe, or Dangerous Practical discussions, case histories, and mini-scenario exercises will reinforce using safe unsafe, and dangerous with tactical use of meters, PPE, Respiratory protection, and CPC. It even assists strategies such as defensive, offensive, or nonintervention are discussed!

Mike Callan

F2: “Low Search Score, Now What?”

90 Minutes

Many teams have been utilizing FTIR and Raman Spectrometers for years. How do we confirm the results? We are taught that a high search score and a good overlay of the spectrum is a good start, but what if we do not obtain those results? This session will look a little more in depth at confirming the results of FTIR and Raman. Since we should confirm the chemical physical properties of materials using three sources, should we not confirm our results with three or more technologies? Always striving for three “proofs” for confirmation is best practice with any sample, but this will also help when there is an unclear result. We will discuss chemical families that FTIR and or Raman cannot identify and how using the rule of three proofs will assist in properly classifying them and their hazards.

Rick Dufek, Brandon Gayle

F3: “Radiation is Every Where”

Part 1 of 2

Radiation is always present in our daily lives through both natural and artificial sources. The purpose of this course is to provide a basic understanding of radiation for the first responders serving our community each day. Having this knowledge can promote safe practices when the call comes in. We will discuss basic skills surrounding ALARA, detection, and response considerations when dealing with some of our known radioisotopes. In close, we will discuss the accident at Chernobyl. Chernobyl remains one of the most infamous incidents in history, vividly illustrating devastating consequences of mishandling radioactive materials. I will give updated information on life in “the zone” and show some of the changes that occurred after the 1986 incident involving Reactor 4.

Paul Christensen

F4: “Traditional Air Monitoring for Modern Air Borne Threats”

90 Minutes

Traditional area monitors, while effective for VOCs, TICs, and gamma radiation, struggle to name more dangerous threats like CWAs and PBAs. Remote monitoring for CWA detectors is scarce, and aerosolized threats pose identification challenges. New technologies like the MX908 Beacon offer a leap forward, enabling remote operation and prolonged data viewing. This advancement enhances area monitoring, specifically for detecting and identifying vapor and aerosol CWAs and PBAs, addressing the limitations of traditional monitors.

Jeremy Van Auken

F5: "MAYDAY: Rescue or Recovery, Emergency or Planned"**Part 1 of 2**

This course is designed to challenge the Hazardous Materials Technician both mentally & physically when it comes to planning for a MAYDAY during a hazardous materials incident. Students will have a 360-degree view of the challenges associated with a hazmat MAYDAY event. These skills have been practiced and proven to decrease evacuation time and get your fellow Hazmat Tech to safety. You will understand MAYDAY challenges while performing MAYDAY evacuations and break down the tasks required while executing a MAYDAY rescue. Time management utilizing the 25/75 model is critical when it comes to personnel, work cycles, air consumption and assignments. NFPA 470 covers equipment needed to remove a stricken member from the Hot Zone quickly, emergency decontamination and rescue from the CPC before handing off to EMS. This workshop is divided into a short didactic portion with the remainder being a practical understanding of equipment in preparing for various scenarios utilizing the students newly acquired skills and understanding while operating on a hazardous materials incident that may or may not present a MAYDAY threat.

Rick Emery, Darrell Wiseman**F6: "How Not to Suck When Instructing HazMat"****90 Minutes**

We've all been in a class where the teacher was more toxic than the chemicals being discussed. We like to call this "Acute Toxic Instructor Syndrome." In this course, we discuss different methods of instruction that will help keep students more engaged. We outline various methods to help attendees remember key points and maintain attention throughout any lecture. This class will transform how you instruct, change how your students learn, and raise the hazmat training of our department.

Bob Salvesen, (The HazMat Guys)**F7: "COMPASS": A Guide to Hazard Assessment"****90 Minutes**

For some, COMPASS is an age-old acronym. Some have never heard the letters put together in this particular order but have seen some variation of the concept in most HazMat response textbooks. This is a powerful assessment tool that can ground responders to a very simple 60 second assessment of what the primary hazards are and how to protect themselves and others while additional information is gathered. This is a "back to the basics" look at the assessment process. This simple tool can add value to the most seasoned responder as well as the brand-new technician.

Monica Lewis**F8: "Hold My Matches and Watch This"****Part 1 of 2**

Hold my matches and watch this! A highly interactive demonstration of the physical and chemical properties of flammable liquids and flammable gases! During these sessions, participants will witness flash point, flammable range, vapor pressure, boiling point, and vapor density. Additionally, we will be demonstrating the dynamic tendencies of flammable vapors when they encounter oxygen and ignition sources to create the "Boom" that tends to surprise us if we don't fully understand the hazards of our response situation!

Brian Ramsey**F9: "FTIR Gas Analyzers" - Bringing safety to First Responder at EV incident sites & Identifying Unknown Toxic Gases****90 Minutes**

In a world increasingly powered by lithium-ion batteries (LIBs), an electrified future is undeniable in the form of electric vehicles (EVs) and energy storage systems. This surge in battery usage has introduced new risks for first responders and the community. A Lithium-ion battery thermal runaway events release significant heat, fire, potential explosion and toxic gases. Toxic gases emitted include hydrogen fluoride, carbon monoxide, carbonates and various VOCs are toxic to humans. FTIR technology provides direct and immediate measurement all gases of interest simultaneously, which provides protection to first responders and providing a full account of hazardous at the incident site. This workshop will include discussions on measurement data

recorded at the County of San Diego's LIB study which included monitoring the thermal runaway in 13 staged LIB fire events as performed over 3 days in February 2024.

Jim Cornish

F10: "Connected Safety for Fire, HazMat, & Emergency Response"

90 Minutes

This presentation will provide attendees with an understanding of the benefits of connected safety technology and the steps fire departments and hazmat teams can take to manage risks and keep first responders and communities safe. During the session we will discuss the latest trends in portable and area-monitoring gas and detection technologies and how new technology can make your responses faster, simpler, more flexible, and more accurate – from the moment you start loading the response vehicle to the post-incident hotwash.

Doug Mayer, Cristian Stochina Streinescu

F11: "A New Era of Thermal Imaging"

90 Minutes

This presentation will introduce the uses of infrared technology for fire grounds, hazmat incidents and beyond. In the detection, the demonstrations and research material will be presented using: Bullard, MSI, FLIR and a Scott series TIC camera. I will take a simple approach using my field experience. This, coupled with proven technology, will give insight to how the fire industry can utilize the infrared camera to detect hot spots, seat of fire, as well as search and rescue- assisting in the enhancement of fire programs. During the presentation, we will examine mock and actual photographs and videos from various locations and scenarios. This presentation is intended to give the audience an idea of how IR technology can be beneficial for "infield" uses. Additionally, it will motivate individuals with gaining support through first-hand, in-field experiences. Within the presentation, initial set-up and camera operations will be discussed and conclude with the delivery of high-quality video and still shots which can be used for reports. In addition, I will be discussing the abilities to utilize the camera in monitoring and maintaining safety on fire grounds and Hazardous Materials Incidents. This class will utilize the NFPA 1408: Standard for Training Fire Service Personnel In the Operations, Care, Use and Maintenance of Thermal Imagers. Presentation will be coupled with a hands-on lab.

Tim Crockett

Conference Workshops
Saturday, October 19th
10:00 AM

G1: “Street Smart HazMat; Safe, Unsafe, Dangerous”

Part 2 of 2

Street Smart Haz Mat is a practical tool for making sense of any Haz Mat incident. Determining if it is Safe? Unsafe? or Dangerous (SUD) Safe, unsafe, or dangerous is one of the most important functional tools for making decisions in the world risk-based response. In Hazmat or fire response, the safety of response personnel is crucial. Sadly, Hazmat responders still have problems with hazard assessment and risk evaluation. They cannot even answer the simplest questions is it Safe? Unsafe? Or Dangerous? Based on the principles of Safe, Unsafe, or Dangerous Practical discussions, case histories, and mini-scenario exercises will reinforce using safe unsafe, and dangerous with tactical use of meters, PPE, Respiratory protection, and CPC. It even assists strategies such as defensive, offensive, or nonintervention are discussed!

Mike Callan

G2: “Liquid Oxygen: Impact Sensitivity and Reactivity”

90 Minutes

Utah Valley University studied the impact sensitivity and reactivity of liquid oxygen and asphalt to satisfy the mythology and procedures surrounding releases of liquid oxygen and the potential impact on the emergency response. This presentation begins with a historical perspective on LOx response and includes the data, photos, IR and ultra-high-speed video of the impact and reactivity experiments. The session concludes with an open discussion regarding the way forward in LOx response procedures and the impact this new information may have. Participants will be encouraged to conduct their own research that may be impactful for emergency responders.

Andy Byrnes

G3: “Radiation is Every Where”

Part 2 of 2

Radiation is always present in our daily lives through both natural and artificial sources. The purpose of this course is to provide a basic understanding of radiation for the first responders serving our community each day. Having this knowledge can promote safe practices when the call comes in. We will discuss basic skills surrounding ALARA, detection, and response considerations when dealing with some of our known radioisotopes. In close, we will discuss the accident at Chernobyl. Chernobyl remains one of the most infamous incidents in history, vividly illustrating devastating consequences of mishandling radioactive materials. I will give updated information on life in “the zone” and show some of the changes that occurred after the 1986 incident involving Reactor 4.

Paul Christensen

G4: “Shoot, Move, Communicate, Survive: HazMat Leadership, Strategy and Tactics” 90 Minutes

Although the background of Shoot, Move, Communicate, Survive comes from a military perspective, the lessons learned from these principles can span all organizations (HazMat included). These lessons are not limited to combat, however. Rather they are practiced in one form or another every day.

Joshua Fowler

G5: “MAYDAY: Rescue or Recovery, Emergency or Planned”

Part 2 of 2

This course is designed to challenge the Hazardous Materials Technician both mentally & physically when it comes to planning for a MAYDAY during a hazardous materials incident. Students will have a 360-degree view of the challenges associated with a hazmat MAYDAY event. These skills have been practiced and proven to decrease evacuation time and get your fellow Hazmat Tech to safety. You will understand MAYDAY challenges

while performing MAYDAY evacuations and break down the tasks required while executing a MAYDAY rescue. Time management utilizing the 25/75 model is critical when it comes to personnel, work cycles, air consumption and assignments. NFPA 470 covers equipment needed to remove a stricken member from the Hot Zone quickly, emergency decontamination and rescue from the CPC before handing off to EMS. This workshop is divided into a short didactic portion with the remainder being a practical understanding of equipment in preparing for various scenarios utilizing the students newly acquired skills and understanding while operating on a hazardous materials incident that may or may not present a MAYDAY threat.

Rick Emery, Darrell Wiseman

G6: “Matrix of Detection; Putting it All Together”

90 Minutes

Technology! Today we have an entire suite of detection and identification tools from papers to gc/ms, and everything in between. But, how do we put them all together in the field to get our answers? In this presentation we will work our way through the matrix of tools available, leveraging their strengths and weaknesses to come to a solution. There is no perfect tool with all of the answers, but using what we have we can get there.

Toby Frost

G7: “HazMat Program Financial Management”

90 Minutes

This session will focus on the financial related components of managing a program. We will discuss what goes into creating a budget, the budget cycle, funding streams, the selection process, and purchasing. If you are new to or expect to be soon running a program, then this session is for you. Don't walk into a failure is not an option program without understanding the basic rules of the game to make things happen. Those who have been doing it for a while, bring your experiences and share with others, so the wheel doesn't get reinvented again.

Peter Jensen

G8: “Hold My Matches and Watch This”

Part 2 of 2

Hold my matches and watch this! A highly interactive demonstration of the physical and chemical properties of flammable liquids and flammable gases! During these sessions, participants will witness flash point, flammable range, vapor pressure, boiling point, and vapor density. Additionally, we will be demonstrating the dynamic tendencies of flammable vapors when they encounter oxygen and ignition sources to create the "Boom" that tends to surprise us if we don't fully understand the hazards of our response situation!

Brian Ramsey

G9: “What IS Risk Based Response?”

90 Minutes

Confronted by a HazMat response and you want to make quick response decisions – how do you determine your actions? How do you determine PPE? Isolation distances? How bad is the situation? Using basic devices and a basic risk assessment process responders can make safe, but quick decisions. The process focuses on fire, corrosive, toxic, and radioactive hazards. If you were provided the on-scene detection readings how quickly could you make a response decision? After a short review of the process, scenarios will be discussed to apply the lessons learned.

Chris Hawley

G10: “Building the Plane While We Are Flying It; Lithium Ion Batteries”**90 Minutes**

The news has exploded with news of battery incidents lately. No place on Earth has been experiencing more than New York City. Take a journey with the guys who are on the ground handling the incidents, how the process has evolved, what we are currently doing, and where this is going. Plenty of time will be allowed for discussion.

Bob Salvesen, (The HazMat Guys)**G11: “Crazy Concoctions, Odors, Colored Smoke; Lab Emergencies”****90 Minutes**

Emergency responses to incidents in the laboratory can be extremely challenging. The thought of wild-haired scientists in white lab coats holding colorful, bubbling beakers of chemicals only adds to the mystery and creates responder anxiety. Inexact science, hazardous chemicals, biologicals, radioactive materials, specialty gases, and complicated laboratory apparatus and instrumentation all pose special challenges. Additionally, the physical layout of laboratory facilities further complicates the response. This workshop helps take the mystery out of laboratory emergency response by enhancing situational assessment, risk-based decision-making, and responder safety.

Keith Silverman, Bill Cullen

Conference Workshops
Saturday, October 19th
1:00 PM

H1: “Emergency Response to Illicit Labs”**90 Minutes**

The threat is ever changing, the challenges evolving, are you ready? Fentanyl, spice, bath salts and even marijuana grows and BHO labs, what are we getting into now? What old is new again as bath salts and club drugs are on the rise, and it can be seen coming across the borders. Meth labs, extractions, and conversion labs are popping up. Going beyond the hysteria, what are the real hazards of these mixtures? In this presentation we will look at the history, components and chemistry, as well as current trends in these operations. We will examine the alphabet soup of chemicals and explain what they are. How can we identify these chemicals? Today we have an entire suite of detection and identification tools from papers to gc/ms, and everything in between. But, how do we put them all together in the field to get our answers? Why are these operations so hard to stop? What are our operational, PPE and decontamination consideration? And what is next? The world of synthetic is here to stay, are you prepared? Knowing your equipment and the hazards present becomes critical in managing both illicit and legal operations. It is coming to a neighborhood near you, are you ready?

Toby Frost**H2: “Hazardous Materials & the Wildland Interface”****90 Minutes**

This session will explore situations where a wildland fire could involve hazardous materials. Examples of how some incidents within the incident were handled. What are some of the concerns? Emergency management planning potentials. The concept of adding a hazmat component to an IMT.

Peter Jensen

H3: “HazMat in Fire & Arson Investigations”

90 Minutes

This workshop offers findings from an extensive study where data from classification and identification technologies were compared to actual fire debris laboratory results. The published study was led by Dr. John DeHaan and offers his perspective as well as fire investigators who participated in gathering live fire scene data. The participants will be provided evidence for an expanded role of technologies in fire investigations which includes a current effort to evaluate vapor phase FTIR to Fire/Arson investigations.

<https://forensiccoe.org/video-series-field-application-gcms-fire-arson/>

Dave Matthew

H4: “Community Risks: Do You Have the Tools to Respond?”

90 Minutes

“Hazmat team responses can go bad quickly; when they do, it will affect the surrounding community. Recent history has shown this to be true. What plans does your LEPC have in place to limit the risk and control the liability of the general public when these catastrophic gas/vapor events occur? We know the hazmat team is well-trained and has the protective equipment, but what about the community? Small hazmat events can be handled without issue, however, a hazmat event, big or small always encompasses the environment and community. What plans do you have to monitor the air in the surrounding community? The P in LEPC should stand for Pre-Planning. Do you know what chemical hazards lurk or travel through our community? Do you have a way of monitoring these specific hazards to help make quick decisions about whether to evacuate or shelter in place? Most level two and three hazmat teams lack devices to identify and quantify airborne concentrations of harmful gases and vapors. What can be done to be better prepared and limit the liability of such an event?”

Jim Seneczko

H5: “Water Injection to Stop Vapor Production & Increase Responder Safety”

90 Minutes

This conference presentation is designed to provide the student with general information regarding the use of WATER to manage a liquid propane leak. What is it, how and why does it work, when can it be used and when it’s not the right tool for the job. What if you could use Water to stop vapor production, empty an auto-refrigerated tank, use it to lift liquid propane up to the piping inside an MC-331 that’s on its side to empty it faster. Instead of having a flaring truck incident that lasts days, we can use Water Injection to reduce the impact on the community and your department. Let’s discuss some options.

Ron Huffman

H6: “What’s That Smell?”

90 Minutes

HazMat teams respond to reports of odors all the time, and many of these calls can be challenging. This session focuses on how to determine the cause of the common odors, the unusual odors and the weird odors. There are true sick buildings and there are buildings with a chemical problem, one can be easily solved by a response team, the other requires more substantial work. This session will cover examples of both and provide strategies and case studies to handle these types of situations.

Chris Hawley

H7: “Tank Truck Emergencies”

Part 1 of 2

Let’s review the common cargo tanks that haul chemicals around the country and ponder some incidents when the road puts a whoopin’ on ‘em.

Richard Meehan, Chris McCain

H8: “Scenario-Based Training: Running Out of Ideas”**90 Minutes**

Scenario based training has become the most common way of training response teams to work together. However, the challenges that are always present include: the same ideas, little variation, lack of realism, and not setting attainable goals. Through a series of questions and discussions the presenters will guide you through the obstacles described and help you to develop more effective whole skill exercises and drills to improve your team and the others that respond with you.

Glen Rudner**H9: “The History of Hazardous Materials Emergencies – Lessons of the Past, Prepare You For Future Response”****90 Minutes**

Every emergency that teaches future responders must learn and understand. This program will look at the most important things responders must know to be successful. From the days before placards existed right up to the demands of Energy emergencies today. Responders must competently solve the problems, not just meet the standards of the curriculum. Mike Callan will examine several past hazmat incidents or events that have shaped the world of hazmat response forever, from BLEVE to CWA. He will also highlight lessons we have forgotten or sadly have yet to learn. *Disregard this class at your own risk!*

Mike Callan**H10: “Inside the Pressure Cooker; The Value of Tactical Worksheets”****90 Minutes**

Tactical Worksheets provide a forced focus that keeps all of us looking calm inside the chaos of incident decision making when we don't have the benefit of time or information. This session provides the framework for developing an initial IAP using Tactical Worksheets. Risk-based hazard analysis, developing the initial plan, and the human physiological responses that we all suffer from under pressure are discussed and tools and tactics are given to lessen the fear response.

Andy Byrnes**H11: “First-In HazMat Size-up”****90 Minutes**

When it comes to scene size-up on the fireground, strategies, tactics, and acronyms are abundant. In HazMat, Ludwig Benner's DECIDE acronym is a great start but what about the average engine company? How are we training our operations level personnel for HazMat? Because, let's face it, they'll be the first ones on scene.

Joshua Fowler

Conference Workshops
Saturday, October 19th
3:00 PM

J1: “Confined Space: A HazMat or Tech Rescue Response?”

90 Minutes

Confined spaces offer unique challenges to rescue units because all too often the process for preparing for a confined space entry is simply an exercise in checking regulatory boxes. Workers are trained in the basic “rules” they must follow, but rarely have an in-depth understanding of the true nature of the hazards they face. When working in a permit required confined Space, OSHA allows a local fire department to be listed as the standby rescue only under very specific conditions. How many times do you think your department has been listed on an entry permit without you being notified? If your department is notified, is it the rescue squad, the HazMat team, or both that are put on standby and what information do you obtain from the entry supervisor? In case studies where rescuers are injured during confined space rescues, almost without exception the root cause is a lack of knowledge that a hazardous material is present or lack of understanding of the behavior of hazardous materials in the space. Certified Safety Professional (CSP) Monique Lewis will discuss some such case studies and scenarios encountered as a safety consultant in various industries. You’ll receive information beyond general confined space awareness regarding common hazards and tactics for identifying when hazards exist or have the potential to exist. You’ll gain insight into the general level of knowledge and training received by the average worker which will help you develop outreach strategies and operational policies and procedures geared toward safe and effective customer service for members of your community who work in and around confined spaces. You’ll also gain an understanding of the overlaps and gaps between the OSHA 1910.146 standard and the NFPA 2500 and 350 standards.

Monique Lewis

J2: “PEAC”

90 Minutes

Join us for an overview of the PEAC software and latest updates. PEAC is used by most teams in Texas.

Scott Bunning

J3: “Controlled Substance Field ID”

90 Minutes

A trend towards increasing potent synthetic and designer opioids, cathinones, cannabinoids, and other substances has affected the ability to detect and identify controlled substances in the field. Synthetic drugs tend towards higher potency, and therefore lower concentration in mixtures. This dangerous combination has fueled a significant rise in overdose deaths, highlighted in the DEA’s “One Pill Can Kill” campaign. Learn how synthetic and designer drugs have fueled a trend towards counterfeit pills, a rise in lethal overdoses, and how field detection technology has evolved to keep pace with these trends.

Jeremy Van Auker

J4: “What Do You Know About Mercury?”

90 Minutes

This presentation will address emergency response and handling of mercury releases to include, incident management and control, exposure and health concerns, PPE, mitigation and removal recommendations, air monitoring and decontamination.

Greg Socks, Jason Waterfield

J5: “HazMat/WMD Incident Commander”

90 Minutes

This course covers the requirements for Incident Commander at a HazMat/WMD incident in alignment with NFPA 470 (Chapter 12 &13) utilizing newly designed infographics to enforce key concepts. The participants will demonstrate competency in managing a HazMat/WMD incidents through scenario-based exercises and group activities. The scope of the course will include:

- Focus on transportation and fixed facility incidents.
- Embracing of ICS principals and Hazardous Materials fundamentals
- Adopting a Risk Based Response process to include chemical analysis and risk assessment
- Offer smart practices in briefing decision makers at HazMat/WMD events.

Dave Matthew

J6: “Radiation Safety Monitoring”

90 Minutes

This training session will review the types of radiation and the potential harm associated with each type of radiation. The common recommendation of Time, Distance, and Shielding will be discussed in terms of calculating Stay Time, the Inverse Square Law and demonstrating the efficacy of various shielding materials, respectively. The occurrence of radionuclides used in medical and industrial applications will be presented and radionuclides that have a higher probability for use in a Radiological Dispersal Device (RDD) or a Radiological Exposure Device (RED) will be identified. In preparation for the hands-on radiation monitoring portion of the class, emergency responders should focus their effort on answering the following three questions:

- (1) How much radioactivity is being emitted by the source?
- (2) How much radioactivity is at the point where you are standing?
- (3) How much radiation is being absorbed by your body? Articles written by Harper et al, and Canadian researchers that conducted experiments with RDDs to determine zone and perimeter recommendations will be reviewed. Several radioactive minerals such as carnotite, betafite, pitchblend and thorite will be used to provide radiation meter readings well above background radiation levels, therefore, you are encouraged to bring a radiation meter to class. ThermoFisher has agreed to provide radiation meters to the class and explain their use and interpretation of readings (NOTE: This is not a sales presentation by ThermoFisher.

Tom Murdock

J7: “Tank Truck Emergencies”

Part 2 of 2

Let’s review the common cargo tanks that haul chemicals around the country and ponder some incidents when the road puts a whoopin’ on ‘em.

Richard Meehan, Chris McCain

J8: “Grounding & Bonding”

90 Minutes

The program will follow the recommendations as set by the NFPA 470 standard and discuss the misunderstanding of what ground resistance is and why we do it first. Then, by demonstration, the instructor will show how we set up a grounding field for the damaged container, grounding field for the recovery container and appliances, and how to bond them together. This is an interactive program that will ask the student to discuss the subject. You can bring your ground density meter with you and make sure you know how it works

Glen Rudner

J9: “Utilities Are an IDLH (Immediately Dangerous to Life & Health)”**90 Minutes**

Energy Emergencies are becoming the “new” hazard. But responding to utilities is as old as energy has been present in most responders size up. Utilities – Natural Gas, Propane, Pipelines, and Electrical Emergencies will be a major problem in the 21st century more than it was in the 20th. What makes ESS explosions any more lethal than a BLEVE or BackDraft? What do you need to know to succeed in this world today of batteries, storage facilities, and new ways to generate and use electricity? Mike Callan has been training firefighters and responders on the hazards and risks of energy events. There will always be Natural Gas, Propane, Pipeline, and Electrical emergencies. Don’t chase the next problem without a strong foundation for response to these hazards and risks. Mike Callan has trained responders for many years and one of his most powerful lessons is “Energy Is Always Dangerous”... Energy is IDLH!

Mike Callan**J10: The Jack Rabbit Project – Past, Present, and Future – An Update****90 Minutes**

In 2015 & 2016, large scale releases of Chlorine were conducted to determine the atmospheric implications of catastrophic releases of compressed liquefied gasses. Now, in 2024 thru 2026, SMEs are once again involved in the Jack Rabbit project using Ammonia where new objectives and mitigation measures will be discovered. This is a historical look back and lessons learned about Chlorine, and a look ahead to Ammonia releases that will affect all hazmat responders in some way.

Andy Byrnes**J11: “Expanding Your Gas Tool Box; FTIR, HPMS”****90 Minutes**

In this session, we will discuss our existing gas toolbox filled with Electrochemical Sensors, CGIs, PIDs, Metal Oxide sensors, and indicating papers and all the strengths and limitations of our current technologies. But through this discussion, we will see that there are very large gaps in gas detection technology that could potentially pose a safety risk. We will discuss the addition of newly developed technologies in our industry that effectively fill those gaps using Fourier Transform Infrared and High-Pressure Mass Spec. With the introduction of the XplorIR and the MX908 Aero, we now have tools at our disposal to better identify our atmosphere and the hazards contained within. With the addition of these tools to our gas toolbox, we can identify gases, vapors, and aerosols in real-time in a downrange posture...something we have never had the ability to do before.

Brandon Gayle**Closing Session****Sunday, October 20, 2024****9:00 AM****KEYNOTE:****Looking to the Future, But Not Forgetting the Past**

We have new and ever-expanding missions in the world of hazmat. Batteries, stored energy, electric mobility, autonomous vehicles, compressed and liquified natural gas, hydrogen, increasing terrorism, clandestine labs, HMEs and more are being handled by hazmat teams across the country every day. We have new software, tools, technologies, PPE, and evolving decon methods at our disposal. As we face these new challenges and changes, it's important to remember those lessons from the past. What can we take forward to address these new and evolving missions? By drawing up on our foundation from the past, we will examine some of these new and evolving threats to better prepare for the future.

Toby Frost, Bob Royall