

HOTZONE 2019

Pre-Conference Workshops

8:00 AM - Thursday, October 17, 2019

On-Site

A1, B1 (LEPC) – Cameo Suite for HazMat Technicians 8 Hours (Classroom, Interactive) Participants will utilize the CAMEO Suite programs (CAMEO Chemicals, CAMEOfm, ALOHA, MARPLOT) to address issues presented by a number of HazMat scenarios taken from actual incidents. Training will include elements of all the CAMEO programs, such as, CAMEO Chemicals: Safety Datasheet Information, Absorbents Guide, Reactivity Worksheet; CAMEOfm: Effectively Interpreting and Utilizing Tier 2 Hazardous Chemical Inventory reports; ALOHA: Correctly Creating and Displaying Plumes Models for multiple chemicals, changing weather conditions, and future time changes; MARPLOT: displaying Control Zones taken from ERC, WISER, ALOHA, and real-time sampling/monitoring, creating and displaying evacuation and other related map zones, sharing and saving user-developed mapping information. **Lunch on Your Own Taught by Tom Bergman, Al Valerioti and Robert Bradley (Limited to 40 Students)**
Participants must provide their own laptop for this class.

A2, B2 – Developing and Implementing the Hazardous Materials Group Operational Plan 8 Hours (Classroom, Interactive)

Prior to the commencement of on-scene operations the Hazardous Materials Group Supervisor with the assistance of the Hazardous Materials Group Assistant Safety Officer has the responsibility for developing the Hazardous Materials Group operational plan for the Incident Action Plan. All appointed primary and secondary functions within the group are responsible for gathering and disseminating all chemical and operational information back to the Hazardous Materials Group Supervisor so it can be approved and included in Incident Action Plan. This program addresses the risk analysis process, group responsibilities and task, application of NIMS ICS forms and level of response overview of the ICS command structures. In addition, realistic scenarios will be presented using state-of-the-art simulation software and real-time atmospheric readings via wireless monitors. **Lunch on Your Own Taught by Greg Socks, Joe Leonard, Robert Bradley, Jason Waterfield and Hank Dupont**

A3, B3 – CBRN Sampling for Public Health 4 Hours (25% Classroom, 75% Hands-on)

This course will discuss sampling fundamentals and various sampling techniques within the FBI 12-step evidence collection framework to provide suitable samples for the Laboratory Response Network for Chemical Threats (LRN-C) and Laboratory Response Network for Biological Threats (LRN-B). Techniques to prevent cross-contamination, properly package samples and to establish chain of custody are discussed. Students will perform each of the discussed sampling techniques during a practical exercise. This course will provide first responders with the competencies to collect samples of possible CBRN contamination in order to allow laboratories to conduct highly reliable scientific analysis of samples. This course does not cover bio-medical sampling. **Lunch on Your Own Taught by Robert Neumann and Kristen Wend (Limited to 24 Students)**

A4, B4 – Field Identification Laboratory – Heinz 5-Step Method 8 Hours

This 8-hour "wet chemistry" course will consist primarily of hands-on lab work with liquid and solid unknown chemicals. The hazardous properties will be discussed as each sample is tested and analyzed. Participants will work in small groups and examine approximately 10-12 samples throughout the day. Samples will consist of common corrosives, oxidizers, flammable and combustible liquids and solids, and others. Physical properties such as appearance, vapor pressure and solubility will be considered as it relates to hazard determination and response tactics for hazardous materials team members. Safety, personal protection, and proper technique when working with chemicals will be emphasized and stressed during this qualitative analysis/bench chemistry workshop. **Lunch on your own. Taught by: Brian Heinz, Jeanette Heinz, and Susan Savino**

A5, B5 – Developing a HazMat Medical Program 8 Hours

Developing a HM Medical Program – 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.

Lunch on Your Own Taught by Toby Bevelacqua and Richard Stilp

A6, B6 – Risk Based Approach Escape-Room Sign up at Registration 4 Hours (Hands-on)

While every HazMat/WMD incident is unique, they all share certain common elements; such as product, container(s), and the environment. This workshop will have teams compete to be able to endure the Risk Based Approach Escape-Room. The activities will be scenario-based to engage participants to approach various challenges ***using on-scene indicators*** to determine the appropriate actions and collect points. The following is a description of the session:

TEAMS

- Four (4) teams with five (5) members per team.
- Teams would need to preregister to participate. Additional participants may attend the session and may be called upon to assist.
- Team names would need to be approved by the Hot Zone committee.

ACTIVITIES

- Each challenge will be scenario based that will require team members to use knowledge and skill to complete.
- Activities will incorporate rules from popular game shows and board games (I.e. Who wants to be a Millionaire, Jeopardy, Family Feud, Clue, Trivia Pursuit, etc.)
- Time:
 - 5 minutes prep ("HazMat Huddle")
 - 15 minutes per round
 - 10 minutes Debrief (At the end of each round, the teams will debrief on lessons learned)
- Teams will be awarded points based upon time to complete activity and accuracy.
- In addition, there will be learning activities to engage participants that have not pre-registered, designed to reinforce learning concepts, team-work, research, problem-solving, and decision-making.

Lunch on Your Own

Taught by Dave Donohue, Andy Byrnes and Tony Mussorfiti (Limited to 20 Participants, Additional Seating Will be Available)

A7, B7 - CTOS PER-355 Radiation Instruments Employment Course 6 Hours (No Lecture, All Hands-on)

This course uses a series of drills designed to reinforce the skills of emergency responders, who have received training in the use of radiation detection instruments. This course is applicable to both the prevent and response mission areas. CTOS provides instruments for training purposes; **attendees are encouraged to bring their own department's instruments if possible.** This course will have 4 stations set up that uses sealed radioactive sources to provide realism. The target audience at the state, local, territorial, and tribal (SLTT) levels includes personnel who would perform tasks in any of the five National Preparedness Goal mission areas: Prevention, Protection, Mitigation, Response, and Recovery, with the focus on those who would be in the Response mission area. Law Enforcement, Fire Service, Hazardous Materials, Search and Rescue, Emergency Management, Emergency Medical Services, Healthcare, Public Health,

Public Works, Transportation Security, Private Sector/Corporate Security and Safety Professionals, Public Safety Communications, Agricultural Safety, Other, Animal Services. **Lunch on Your Own Taught by Bobby Baker, Jr. (Limited to 40 Students)**

Off-Site

A8, B8 – Hands-on Technician Refresher Training (HFD Jahnke Training Facility) 8 Hours

In this full day pre-conference experience, the hazmat technician will have hands on capabilities in the following areas:

1. The technician will have the opportunity to cold tap (air drill) a DOT 406 laid over on its side and move actual liquid through a pneumatic transfer pump.
2. The technician will have the rare opportunity to apply a BETTS Emergency Offload valve to a DOT 407 laid over on its side and move actual product using a pneumatic pump.
3. The technician will have the opportunity to flair an MC 331 Tank Truck. He/she will physically attach a flair unit to the 331 and light and burn off gas vapor just as they would in the field.
4. Last but not least the technician will interact with HPD Bomb squad and learn about explosives and see hands on reactions of certain dangers they could encounter in the field.

Lunch Provided

Taught by the Members of the HFD HazMat Team (Limited to 24 Students)

A9, B9 – Introduction to Clandestine Lab Recognition (Harris County Fire & Sheriff's Training Academy) 8 Hours

As initial responders, HAZMAT techs are trained to recognize and categorize clandestine labs can better protect themselves and the public. Proper recognition also allows HAZMAT officers to coordinate additional resources at their disposal to aid in response and notify appropriate law enforcement agencies. This 8-hour block includes both classroom and hands-on demonstrations for drug, bio, chem, & HME labs and their key signatures. Discussion will also include threat prioritization, proper PPE, and agencies to call upon recognition.

Lunch Provided

Taught by 6th CST (Limited to 24 Students)

A10, B10 – Risk Based Decisions Through Physical & Chemical Properties (HFD Jahnke Training Facility) 8 Hours

Participants will witness the dynamic tendencies of hazardous materials brought to life through Physical and Chemical Properties demonstrations. 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 gasses as well as cryogenics. These high-energy fast paced demonstrations will leave the audience / students with a keen awareness of fire behavior and hazardous materials. Participants will have a better understanding of how to apply physical and chemical properties to fire behavior and hazard assessments.

Lunch Provided

Taught by Brian Ramsey (Limited to 24 Students)

A11, B11 – Back up Team Concepts & Best Practices (Harris County Fire & Sheriff's Training Academy) 8 Hours

A MAYDAY during a hazmat incident is a complex and dangerous problem. HAZWOPER and NFPA 472 require "backup teams", but do not provide many details or even a definition. Many programs use a 2-member entry team and a 2- member backup team to meet this requirement, but there are many differing opinions on configuration, equipment and where to stage the backup team. In addition, there is more to consider for an effective and safe rescue. Is your backup team within eyesight of the entry team, in CPC and on air? Or is your backup team waiting outside the Hot Zone 50% dressed? What about EMS? Current research is developing Best Practices during a hazmat MAYDAY. Key hands-on evolutions will demonstrate safe and efficient operations to remove a downed hazmat team member. Instructors will provide a brief overview of the development of current MAYDAY best practices, cover the unique considerations for hazmat emergencies and

introduce the Rescue Team concept. Participants will use a flowchart identifying the roles and responsibilities of the Backup Team to select the correct option. **Lunch Provided (Limited to 24 Students)**

HOTZONE 2019

Opening Session

8:00 AM - Friday, October 18th

Keynote Address

The Evolution of HazMat
Tobias Frost and Butch Hayes

Plenary Session

NH3 and Me!
Rick Emery and David Matthew

HOTZONE 2019

Conference Workshops

1:00 PM - Friday, October 18th

D1 - (LEPC) Utah State FMO Virtual Reality HazMat Training

The Utah State FMO in corporation with Concordia University has developed a First Responder Operations VR concept to train first responders. Current scenarios involve a DOT 407 or standard box trailers. Future developments will include other transportation modes such as rail and pipelines. **Taught by Ryan Putman**

D2 - Anhydrous Ammonia Response Applying Tactics to Scenarios – Part 1 of 2

Be prepared to handle anhydrous ammonia incidents effectively and efficiently. Session will begin with a class review of a customized guide card, including live release footage, for anhydrous ammonia which follows the sequence of a hazmat incident and provides specific reminders and information for anhydrous ammonia responses. That will be followed by short tabletop scenarios with team play, providing some fun and entertainment, but more importantly allowing for some practical application in dealing with ammonia in real life incidents. **Taught by David Binder**

D3 - HazMat Triathlon Part 1 of 2

Sign your team up at registration for this fun hands-on experience. Teams will consist of 4 persons. Each team will complete 3 Technician Level skills. Prizes will be awarded to the 1st and 2nd place Teams. **Taught by Tony Janke and Members of the Houston HazMat Team**

D4 - Where Did It Go?

Come see what is new in plume modeling. LR-x® is a paradigm shifting mobile (Apple & Android), easy to use cloud-based technology for heightened situational awareness of plumes related to chemical spills. By producing a hazard visualization in near-real time, first response decisions can be made using 3D Wind Field and ALOHA model results in minutes. Integrated with Google maps/Earth, tablet touch controls allow you to easily plot incident locations. LR-x® provides an initial wind field and plume model and then generate 4 forecast models to facilitate long-term response. The most advanced technology on the market. **Taught by Perry Rockvam**

D5 - Shock and Awe for Your HazMat Team – Part 1 of 2

Is your hazmat training "boring", "death-by-power-point", or "uninspiring"? It doesn't have to be that way. This interactive, hands-on, presentation will help you energize your training the "Bill Nye/Science Guy" way. Learn how to teach the principles of matter, chemical characteristics, and monitor theory utilizing thrilling examples and visually exciting demonstrations that you can purchase at your local building material store. **Taught by: Steve Street and Richard Dufek**

D6 - Hazardous Materials and The Fire Code: How Do They Interact?

This presentation will demonstrate how HazMat standards and regulations integrate with fire codes. Exemplar data will be obtained using the Ohio Fire Code., which is modified from the ICC Fire Code, as well as actual building HazMat inspections. It is important to realize the tools that fire codes give them to assist in their responsibilities.

Taught by Alan Finkelstein

D7 - NFPA 472, 473, 475, 1072: What's the Difference?

Come ask your questions of the Chairman and Members of these HazMat Technical Committee.

Taught by Rick Edinger

D8 - Inside the Fenceline: Response to Emergencies at Chemical Facilities Part 1 of 2

TRANSCAER® (Transportation Community Awareness and Emergency Response) is a voluntary national outreach effort that focuses on assisting communities to prepare for and to respond to a possible hazardous material incident. This includes emergency responses to chemical manufacturing facilities that produce and store potentially hazardous materials. Responding to a possible hazardous material incident can seem daunting and challenging. Typically, these are not your bread-and-butter calls. As a firefighter, you may not have the familiarity, experience, training and/or equipment to feel you can safely and effectively handle them. This session will better prepare responders to handle incidents "inside the fence line" of chemical facilities. We will begin by learning how to size up a chemical facility and then learn about some common activities, processes and hazards that can be found "inside the fenceline". Lastly, we will cover strategy, tactics, and tips for handling incidents and rescues involving potentially hazardous materials.

Taught by Keith Silverman and Bill Cullen

D9 - CO2 is a Deadly Gas – REALLY?

Over the past few years, there have been a number of unique fatal incidents involving carbon dioxide, as well as some near misses. In addition, the use and quantity of CO2 has increased in a number of facilities, which presents unique challenges. Many of these facilities, one would not think about them having bulk liquefied gases present. Having an effective air monitoring strategy can help determine the root cause of a CO2 event.

Taught by Chris Hawley

D10 - Outclassing Emerging Threats with Emerging Technology

The term "emerging threats" is used to define relatively new chemical substances such as fourth generation agents (FGAs) and pharmaceutical based agents (PBAs) which are extremely toxic at trace levels and have the capacity to be used for chemical attacks. Following the lethal use of an FGA in Salisbury, UK in 2018, the US Department of Health and Human Services published a safety awareness bulletin for on-scene responders about FGAs which noted that hazmat teams have limited detection capabilities for these substances. Indeed, their complexity requires an emerging detection approach which can identify an agent by name when needed to drive decon considerations (for FGAs) but also classify an agent by type when thousands of novel analogs can exist and evade a library-based approach (for PBAs). Learn how chemical agents have evolved since WWI into the FGAs and PBAs of today and how handheld mass spectrometry addresses the field detection problem using a combination of targeted libraries to identify threats and broader classification algorithms to detect threats which have been newly synthesized. Hands-on exercises will be conducted to illustrate scenarios such as trace residue detection on contaminated surfaces and post-event decon verification.

Taught by Mark Norman

D11 - Street Smart Haz Mat – Safe? Unsafe? Or Dangerous? – A Practical Approach to Handling Hazardous Materials

This program is about real life HazMat emergency response. These are lessons that have been learned by emergency responders over the last twenty years in the street. Street Smart HazMat gives the student information that they can put to use immediately in the street. Recognizing when it's safe, not safe or dangerous is the beginning of developing a successful mitigation process, site safety plan and/or emergency response to a chemical spill. Mike Callan brings years of experience in teaching responders around the country and shares their experiences with the class as well as his own personnel skills and training to the program. Not to be missed.

Taught by Mike Callan

D12 - The Dirty Dozen – 12 Common Mistakes in HazMat Response

The instructors will share twelve common mistakes in a hazmat response. Learn about the mistakes of others, so that they don't happen during your response. This class is geared to make your response safer and more productive.

Taught by Doug Rohn and Joe Bartholomew

3:00 PM - Friday, October 18th

E1 - (LEPC) Texas LEPC Combined Guidebook

Taught by David Cella

E2 - Anhydrous Ammonia Response Applying Tactics to Scenarios

Part 2 of 2 See D2

Taught by David Binder

E3 - HazMat Triathlon Part 2 of 2 See D3

Taught by Tony Janke and Members of the Houston HazMat Team

E4 - Compressed Gas Emergency Response Fundamentals

This 90 minute Compressed Gas ER Fundamentals class will provide the First Responder with a working knowledge of the physical and chemical behavior of a compressed gas that can affect the incident assessment or mitigation plan. It will include many of the more hazardous specialty gases classified as highly toxic, corrosive, oxidizing, unstable.

The student will get a basic understanding of key properties such as:

- Critical Temperature
- Vapor Density
- Liquid Density
- Flammability Limits
- Boiling Point
- Vapor Pressure
- Latent Heat of Vaporization

and why they might be important during an incident. This will include a review of select incidents and the lessons learned.

Taught by Eugene Ngai

E5 - Shock and Awe for Your HazMat Team – Part 2 of 2 See D5

Taught by: Steve Street and Richard Dufek

E6 - Failure to Plan is a Plan to Fail

This facilitated session will provide information on NFPA 475 Chapter 6 for the development of plans using a risk-based approach. Each incident is dynamic and a function of all the on-scene indicators, requiring responders to adapt to ongoing and often unpredictable event. Plans should not be a scripting process that dictates specific actions. They should provide a starting point for operations, be flexible, and be adjustable as circumstances change. Plans should be organized in a logical framework of functions and topics using a four-step process: a needs/gap assessment, development, implementation, and evaluation.

The session will explain the difference between:

- Standard Operating Procedures (SOP)_{SOP}
- Standard Operating Guidelines (SOG)_{SOP}
- Strategic Plans such as a Jurisdictions Emergency Response Plans (ERP)

Taught by Tony Mussorfiti

E7 - Fentanyl, Spice, and Bath Salts, Oh My!

The ante has been raised! White powder calls have changed once again! Fentanyl, spice, and bath salts, what are we getting into now? What are the real hazards of these unknown 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? Why are these operations so hard to stop? What are our PPE and decontamination consideration? And what is next?

Taught by Tobias Frost

E8 - Inside the Fenceline: Response to Emergencies at Chemical Facilities Part 2 of 2 See D8

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Taught by Keith Silverman and Bill Cullen

E9 - Pipeline Emergency Response

The United States has the largest pipeline network in the world. Pipelines deliver the raw materials that are processed into fuel that powers our lives: crude oil, refined products, liquid petroleum, natural gas, CO2 and many other chemicals as well. The most safe and cost-effective transportation method for these products is through pipelines. Pipeline environmental and safety record statistics show that pipelines are safer than any other means of transportation. During a pipeline emergency, the actions taken by emergency responders are critical to protecting lives, property and the environment. Through Pipeline Response, discussion of public-private partnerships and collaboration before a pipeline incident, as well as, how important working together through a Unified Command organization at the pipeline incident will be covered during the presentation. The primary goal of Pipeline Response is to bring Emergency Officials, First Responders and Pipeline Operators into the same setting to network and pre-plan for pipeline emergency response ahead of the incident. The Pipeline Response presentation will cover the following modules: Module 1: Overview of Pipelines, Module 2: Products, Product Properties, and Leak Identification, Module 3: Excavator Damage Prevention, and Module 4: Incident Response. Emergency Responders will learn: Advance preparedness processes, Leak identification and proper response procedures, Product properties and hazards, Incident command with pipeline operator.

Taught by Brad Britten

E10 - Binary Weapons Threat Updates and Response Solutions

During the summer of 2018, Pro-ISIS media outlets began a propaganda campaign focusing on the use of binary chemical weapons against the United States and other partner nations. In order to address the operational implications of these events, it is first important to understand the methodologies which are commonly used, the locations where the events often occur, the concentrations of material generated, and how those concentration relates to exposure standards and flammability. Using the most often highlighted threats of hydrogen sulfide, hydrogen cyanide, and phosphine as examples, guidance will be offered about risk control measures including personal protective equipment and decontamination strategies to effectively and safely mitigate the incidents.

Taught by Dr. Christina Baxter

E11 - A Year's Worth of Training in 90 Minutes

Michael Callan's presentation identifies over 20 courses and hours of HazMat training worth thousands of dollars for free. This training can be used for initial or refresher training. It can even spice up your Awareness, Operations and most important Technician training. For over forty years of being involved in training Mike Callan has seen, worked on or even authored many of these programs available. They are free, or sponsored at no cost to the responder by other organizations both private and public. This training is easily accessible in print, on cd, online or other mediums that you as an instructor can deliver live training supported through text, Power Points, curriculums, lesson plans and/or even supported by expert instructors for actual delivery in the fire house, a facilitated curriculum or even allows a Train the Trainers at the county or State levels. Unless your department or Fire academy has a lot of money this program is not to be missed.

Taught by Mike Callan

E12 - Bravo, Tango, Echo: Oh My, How to Handle BETX Compounds

There are many chemicals and chemical combinations that are referred to with acronyms. The BTEX fraction is no different. Comprising of benzene, toluene, ethylbenzene and xylene, they are major industrial components in the petroleum industry. Many chemicals that we use on a daily basis contain one or more of the BTX compounds. How do we look for these extremely hazardous chemicals? There have been many incidents where the BTEX fraction was not picked up from an LEL perspective but the concentration would have been past second alarm on the PID. Why would this happen? Do we need a different detection strategy?

Taught by Laurie and Toby Bevelacqua

8:00 AM - Saturday, October 19th

F1 - (LEPC) CAMEO, WISER, Google Earth, Microsoft Office, and ArcView for laptops, tablets, iPhones, and other devices Part 1 of 2

Have you ever wished you could use CAMEO to create a "chemical plume" and share that with responders who are using iPhones and Tablets? Ever want to pull a Tier 2 Chemical Inventory Report out of CAMEO and put it into EXCEL or WORD? How about diagram an evacuation area on MARPLOT at the EOC and send it to the field responders as a Google Earth file? This course will instruct participants on a number of effective methods to exchange data and map information between the EOC and the field personnel, between various laptops and other devices, and between different software programs.

Taught by Tom Bergman

F2 - Air Dispersion Models, ALOHA & Jack Rabbits Part 1 of 2

Ever wonder if you could model Fentanyl? Well, you can't! You can't model a lot of other things too. Models have specific uses and trying to use them when they are not the appropriate tool can have unfortunate results. This session will explore if, when and how air models can help you in planning and emergency response. ALOHA, the responder's air model, now has science experiments to help show you its strengths.....and weaknesses. 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.

Taught by Al Valerioti and Robert Bradley

F3 - What's In The Cylinder?

Compressed gas cylinders are sometimes found lying around, sometimes in weird locations. Junk yards, abandoned building, washed up after a flood, etc. Of course HazMat is called to deal with them. How do you do an assessment? Are they dangerous? What do they contain? What do I do with them? This presentation will review examples of cylinder assessments on cylinders found abandoned without any identifying markings or labels. It will also present a worksheet that can be used to assess the cylinder and help to narrow down what they could contain. It will also look at cylinder and valve features that are unique to certain groupings of gases.

Taught by Eugene Ngai

F4 - The Weather and HazMat Incidents

National Weather Service Forecast Offices are available across the country to provide weather support 24/7 for incidents including fire and hazardous materials releases. The support provided includes detailed hourly forecasts for the incident site and, if required, basic dispersion modelling to show where the plume may be headed. If requested and personnel available, NWS can deploy an incident meteorologist to the ICP or EOC for real-time, face-to-face, continuous weather support or dedicate someone to support remotely from the NWS office. NWS Forecast Offices can also relay through the Emergency Alert System public warning messages crafted by the Incident Command. In this presentation, forecasters from the National Weather Service Houston/Galveston office will describe these various aspects of support with examples from recent incidents including Deer Park/ITC. The presenters will cover limitations of modelling given typical uncertainties in the chemicals involved and their release rates. For some high profile, long duration events dispersion modelling responsibilities may be transferred to the Interagency Modelling and Atmospheric Assessment Center (IMAAC). Presenters will describe the role and composition of the IMAAC and how they may be requested.

Taught by Dan Reilly

F5 - Final Report: Jack Rabbit Test Part 1 of 2

This workshop provides specific findings and key observations that resulted from the large scale chlorine releases with discussion on its impact on the first responder community. The September 2017 final report from the Jack Rabbit tests has been aligned with a video based presentation that attendees will be provided to deliver to their home departments.

Taught by Dave Matthew

F6 - Incident Response Tools for Everyday HazMat Response

Part 1 of 2

Does your organization respond to hazmat calls with limited resources? Then this class is for you. Hazmat training programs teach large scale hazmat incident response using dozens of hazmat techs and complicated ICS systems each with their own clipboards and check sheets. But if it's not a level A entry... do you use any system at all? We didn't. So we developed a scaled back model to use at the types of calls you

actually go to, with the resources you'll actually have on scene. Our system uses a quick response card that guides operations level crews as well as the hazmat team through everyday hazmat calls. This comprehensive and easy to use system includes a scaled back 208, entry form, tech ref flow chart, scene release form, and much more. In the class we will guide you through several practical tabletop scenarios as a group letting you utilizing the system. We will gladly hand our system and forms to you at the end of class which can be used as templates for you to improve your organizations hazmat response.

Taught by Matt Housley

F7 - The Legal Aspects of Fire/HazMat Response

This presentation will provide an overview of the legal ramifications of fire department HazMat response. Among the topics covered will be environmental and workplace regulations, agencies involved, and legal rights and responsibilities. Basic legal concepts will be discussed with case studies presented as illustration.

Taught by Alan Finkelstein

F8 - Science Officer 2.0

The science officer is an important member of the responding resources at a hazardous material incident and must possess technical and analytical skills for the analysis of physical and chemical data, the ability to search the technical literature as well as be able to assess the interaction of hazardous materials with various containers.

The Science Officer 2.0 class provides a thorough understanding of the 12 key physical and chemical properties of hazardous materials (The HazMat Dirty Dozen) through classroom demonstrations, hands-on experiments and videos of hazardous materials events. Also, Science Officer 2.0 will include actual hazardous material scenarios where students will assess chemical hazards and the appropriate tactical response to those hazards in compliance with advanced chemical risk assessment and analysis competency outlined in Chapter 21 of NFPA 472 (2018).

The materials used for the construction of containers for shipping and storing hazardous materials are reviewed. The impact of hazardous materials on the container and the probability of container failure and the mode of container failure during thermal, mechanical and chemical stress events are analyzed using information from hazardous materials incidents and research studies. The correlation between the stress-induced changes in key physical and chemical properties of hazardous materials and the stages of the General Hazardous Materials Behavior Model is reinforced through demonstration and review of hazardous materials incidents. Students will work in teams on tabletop scenarios adapted from actual hazardous materials events to provide the IC with recommendations for PPE, Zones and Perimeters Delineation, Monitoring, Decontamination, Respiratory Protection, Site Safety Plan, Evacuation vs Shelter-in-Place, etc.

Taught by Dr. Tom Murdock

F9 - Confined Space: Rescue or HazMat

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. 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. Monique Lewis will discuss some such case studies and scenarios she has encountered as a safety consultant in various industries. You'll receive information beyond general confined space awareness with regard to 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.

Taught by Monique Lewis

F10 - ChemResponder Part 1 of 2

Engage in an interactive tabletop-style session to explore the ChemResponder Network, a free chemical incident information and preparedness tool sponsored by the FEMA CBRN Office. Examine how ChemResponder can close capability gaps identified in hazmat operations, and implications for the future of chemical incident response. Then use ChemResponder's full suite of tools to respond to a scenario involving a chemical spill, including SITREPs for rapid information capture and sharing, powerful map tools in a geospatial common-operating picture, and the HAZMAT Incident Database for creating and sharing lessons learned. ChemResponder is the compliment to The RadResponder Network, which is the national standard and Whole Community solution for the management of radiological data. Both systems are fully integrated with one another and free for any organization in the United States with a stake in CBRN response. They employ a flexible architecture that enables organizations to rapidly and securely record, share and aggregate large quantities of data while managing their equipment, personnel, and interagency partnerships in a multijurisdictional event space. ChemResponder and RadResponder can be accessed on smartphones, tablets, and via the web for seamless and rapid deployment at all levels of government during a response to a radiological or chemical emergency.

Taught by Sean Duling

F11 - Shoot, Move, Communicate, Survive: HazMat Leadership, Strategy & Tactics

While it's hard to pinpoint exactly where the origins of this well-known infantry skill came from, it is used by all branches of service that have placed "boots on the ground" in any theater. So what can we learn from our military counterparts that pertains to HazMat leadership, strategy and tactics? A lot, actually.

Taught by Josh Fowler

F12 - Explosives Recognition & Understanding

In this day and age, terrorism is always on our minds. We have all adapted our training based on the events of the past in the hope of preparing for the future. This session will explore the use of explosives as a terrorist tool. The use of explosives during a terrorist event can happen anywhere. This session will provide basic knowledge on how to recognize explosive devices, understand the effects of the device should it go off, how to treat victims on the scene of an explosive event, and look at case studies in major metropolitan areas and high profile cases.

Taught by Joshua Sutherland

10:00 AM - Saturday, October 19th

G1 - (LEPC) CAMEO, WISER, Google Earth, Microsoft Office, and ArcView for laptops, tablets, iPhones, and other devices Part 2 of 2 See F1

Taught by Tom Bergman

G2 - Air Dispersion Models, ALOHA & Jack Rabbits Part 2 of 2 See F2

Taught by Al Valerioti and Robert Bradley

G3 - CPC Selection-What You Don't Consider Can Hurt You

PPE is your last line of defense, therefore, selecting appropriate PPE is critical. This course will provide information to understand the key factors for chemical hazard assessment, standards, and test data to aid selecting the right chemical protective clothing. Understanding the key chemical barrier tests, "Whole Suit" tests, and elements of garment and ensembles certified to NFPA requirements. Learn how the Key NFPA standards (1991, 1992, and 1994) are similar and different in their performance requirements so the right chemical protective suit can be chosen for your response scenario.

Taught by Khyati Vyas

G4 - I Smell Something, Don't You? – Response to Odors in Buildings

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.

Taught by Chris Hawley

G5 - Final Report: Jack Rabbit Test Part 2 of 2 See F5

Taught by Dave Matthew

G6 - Incident Response Tools for Everyday HazMat Response Part 2 of 2 See F6

Taught by Matt Housley

G7 - The Difference Between Personal Safety and Process Safety

A unique look at the difference between these two forms of safety through the eyes of a longtime member of the Chemical Safety Board. Critical consideration is given to the concept of "Normalization of Deviance". An examination of two major investigations looks at very similar cultural issues on incident outcomes.

Taught by Manny Ehrlich

G8 - British Novichok Case Study

On March 4, 2018, Sergei Skripal, a former Russian military officer and double agent for the British intelligence services, and his daughter were poisoned in Salisbury, England. After lengthy hospitalizations, both survived the attack. The investigation revealed that the poison used was Novichok, a chemical nerve agent developed by the Russian government and that two Russian intelligence agents transported the nerve agent materials into Britain to facilitate the attack. A second exposure of two additional people in June 2018 resulted in the death of one individual and the hospitalization of another. These cases resulted in international intrigue and an increased awareness of this little-known nerve agent. The two exposures, subsequent decontamination efforts, and resulting community concerns are a remarkable case study of the use of chemical weapons as an assassination weapon and the aftermath of such an event.

This case study will review the sequence of events that led to these poisonings and the extensive emergency response, political, and environmental concerns that resulted.

Taught by Rick Edinger

G9 - Tactical Skull Sessions – When Duty Calls

Duty Calls Basic to Basics has taken hazmat education into the gaming arena. It is a practical approach towards knowledge-based skills. The presentation is built around the idea of immersing the student into the context of an incident. By doing such you have given the student a platform by which they can investigate new techniques, hone old ideas and expand their knowledge base. The concept is simple teach response options through a contextual application i.e. scenario and discussion will bring forth new ideas and reinforce old skills. We have taken scenarios to a whole new level of interaction that of a computer game in which the student can explore many tactical objectives and options all within the comfort of a game. Through game play; problem solving and critical thinking decision-making process is developed and used similar to what happens in the street.

Taught by Michelle Murphy and Toby Bevelacqua

G10 - ChemResponder Part 2 of 2 See F10

Taught by Sean Duling

G11 - Response During Natural Disasters

In this workshop we will discuss the challenges that maybe presented by hazmat events during natural disasters, (Hurricanes, Flooding, Wild Fire's. Blizzards). Some of the subject we will discuss in this is equipment needs, arrive on locations, product control, and above all responder and public safety. This is just some of the subjects that we will be discussing in this workshop. This is a lecture and class participation type workshop.

Taught by Adam Aiken and Butch Hayes

G12 - Unstable Materials, Monomers & Organic Peroxides

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. There is no single hazard class for unstable materials because they often present multiple hazards.

Taught by Keith Silverman, Bill Cullen and Mike Callan

1:00 PM - Saturday, October 19th

H1 - (LEPC) Natural Disasters, Unnatural Hazards

In the aftermath of a natural disaster whether it be a hurricane, tornado, earthquake, or tsunami, the hazards responders face can be particularly challenging. When the environment is full of unknowns and is generally unstable, the playbook of standard operating procedures ends up being woefully inadequate. Even in areas where certain types of disasters are almost common place, the scenario is different every time. Professional Continuity Planner and Certified Safety Professional (CSP), Monique Lewis, former team lead for a national HazMat response team whose primary mission was to respond to the aftermath of natural disasters will explore the challenges associated with these environments, share some practical solutions to interesting situations her team faced, and host an interactive discussion where participants will have the opportunity to come up with out of the box solutions to real world problems that have or are likely to arise.

Taught by Monique Lewis

H2 - Damn...There is NO APP FOR THAT! Part 1 of 2

Thanks to smartphones and the apps made for them, emergency responders and the public they serve now have a wealth of help at their fingertips for almost any disaster scenario. They can look up the effects of toxic chemicals, brush up on first aid, find the nearest shelters or turn their phone into a flashlight. Apps filled with reference material and up-to-the-minute data can help them respond to an emergency. Thus, it is critical important for several reasons to not become overly dependent on apps and smartphones. The goal is to get the right information in the right hands at the right time, and order to make decisions in minutes not hours. For this reason you need to be able to think "out of the box and on your feet" and not to become overly dependent on apps and smartphones. This session will utilize science, monitoring devices, HAZMAPS, and street smarts with Frank's ability to "Connect the Dots" during a chemical emergency.

Taught by Frank Docimo

H3 - Left of Boom!

The United States Marine Corp's "Combat Hunter" program trains Marines to observe early warning clues of an attack so they stay "left of bang". On a timeline, "bang" is the attack, everything left of "bang" is pre-attack and right of bang is post-attack. The Combat Hunter program saves Marines and this same concept can save HazMat team members. In HazMat response an emergency during an entry is BOOM – everything after the emergency is right of BOOM and everything before the emergency is left of BOOM. This program trains responders to stay left of BOOM to avoid an emergency. The 10 Line Pre-Entry Safety Briefing is a checklist that helps the HazMat Team Safety Officer keep everyone left of BOOM. Combining your training, skills and experience with the 10 Line Safety Briefing will provide you with the skills to keep team members safe while efficiently mitigating an incident. The Haz Mat Team Safety Officer is a very important position and is involved in every aspect of an incident including decon, PPE, monitoring, setting control zones, communications, tactical decisions and developing the Incident Action Plan. The HMSO works in conjunction with the Incident Safety Officer and needs to know all the competencies of a Technician, plus all the Mission Specific and Hazmat Officer competencies. The HMSO evaluates an incident safety using risk-based response to identify safety concerns. The HMSO develops a site-safety plan based on an IAP, conducts safety briefings, enforces the safety plan, monitors actions in controlled zones and identifies high-risk conditions. The HMSO communicates potential safety concerns to the Incident Commander. Workshop participants will use exercises to self-evaluate their Hazmat Team Safety Officer skills. The instructors will walk through the first exercise hitting all the points that a Safety Officer needs to cover, including the Pre-Entry Safety Briefing. Additional exercises will allow the class to discuss all the possibilities and

defend the answers. The new “10 Line” Pre-Entry Safety Briefing concept will provide participants with a model pre-entry briefing plan to take back home.

Taught by Rick Emery, Richard Zientek, Butch Hayes and Darrell Wiseman

H4 - The Challenging Threesome Part 1 of 2

This workshop will address three of the top ten most common hazardous materials utilized, stored, and transported throughout the country as liquefied gases. Instructor’s will cover behavior, hazards and container profile. Numerous past incidents and case studies will also be presented throughout the presentation.

Taught by Greg Socks, Robert Bradley, Bill Hand and Jason Waterfield

H5 - Pulling it All Together Part 1 of 2

While every Hazmat/WMD incident is unique, they all share certain common elements; such as responder’s training, available equipment, organizational mission, the product, containers, and the environment. This workshop will use scenarios to engage students to use a risk-based approach to these incidents by using all on-scene indicators to identify types of harm, predicting behavior and using an “if this, then that” decision-making strategy, aiding the responder to pick the best option. A risk-based approach emphasizes the importance of empowering the responder with the knowledge, skills, and abilities that allows the responder to adjust as the situation changes using facts, science and circumstances.

Taught by Tony Mussorfiti and Andy Byrnes

H6 - Transportation Emergencies

Every community can be affected by a transportation emergency. Whether it be rail, over the road, or pipeline, commodities must be transported to end users at the end of the supply chain. Is your community ready to deal with a transportation emergency?

Taught by Brandon Dean-Morris

H7 - Is Your Team Ready For The Big One?

How to build a multi operational period full scale drill on a budget! Utilizing a recent HSEEP compliant, full-scale exercise as a case study, we will walk through how to create a multiday, multi-agency full scale drill. Multimedia tools, department buy in, and realistic training for the troops. It does not have to be a lumbering giant to work. This presentation will give you the frame work to develop and implement your own drill with limited resources and maximum impact.

Taught by Toby Frost

H8 - Advanced Science to HazMat/WMD Response

This presentation uses data from our response technologies required of Type I and Type II HazMat Teams with primary focus on associating and aligning technologies into a Risk Based Response process. Participants will be offered data from field classification and identification technologies for analysis with each scenario offering discrepancies to be resolved. Special focus will be put on how to present technical information from our detection technologies in street terms so shared understandings can be obtained. Responders interested in evaluating the decision-making process developed for the new Advanced Science course at the NFA will benefit from this workshop.

Taught by Dave Matthew

H9 - Clean Half Dozen: LPG, CNG, LNG, Propane, Hydrogen vs. Brown Fuels

The hazardous materials response community has had their share of gas emergencies over the years, and it is not slowing down. Almost daily we hear of a gas emergency happening somewhere. Some of these emergencies have had devastating effects on the community. But what are these gases and how are they similar but different. In this session we will explore the chemical and physical properties of this group, where they are found and basic analysis of such and incident. This is followed up with case studies highlighting events to bring forth the need to have correct apparatus placement, detection analysis, and resource allocations.

Taught by Toby Bevelacqua and Michelle Murphy

H10 - There's Something About Mary! Part 1 of 2

For the last several years there has been a nationwide push to legalize the recreational use of Marijuana in the United States. Recently, 11 states, have

passed legislation that allows recreational and medical marijuana use. This new addition to the American pastime has created a whole new set of uncontrollable factors for members of the American fire service to train and plan for. As a result, Marijuana Grow Operations are opening up in the communities we serve, faster than fire departments can plan, train and implement safe operating procedures when called to respond to these facilities. Marijuana grows are developed and implemented to maximize the space used, in order to produce higher harvests, thus producing higher profits. In order to do this, netting and wire mesh are used to allow the plants to grow out versus up, producing more buds that can be sold for consumer use. This poses new and increased entanglement hazards for interior fire attack crews. Heavy high voltage lighting is installed to simulate sunlight so the plants will grow, creating increased overhead fall hazards. Chemicals such as Sulfur and Carbon Dioxide are used to control molds and increased Tetrahydrocannabinol production. An unrealized consequence to the madness that Marijuana has created, is the increased use of Butane Hash Oil. This new challenge and growing popularity have dynamically changed the landscape of the American Fire Service. The processes, hazards and real life case studies will be covered during this class to increase the situational awareness of responders. This class was developed to show historical data and decision-making processes by the citizens of Colorado, lawmakers and ultimately the Federal government. This class has been highlighted at the Baltimore IAFC Hazmat Conference, FDIC, Hotzone Hazmat Conference, IAFC Fire rescue International Conference, Midwest Hazmat Conference South Central Task Force Conference, and the Indiana State Hazmat conference.

Taught by C.J. Haberkorn and Dana Brown

H11 - Evidenced-Based to Synthetic Opioids Threats

Fentanyl and fentanyl analogs quickly became the most common high hazard response over the past two years. While synthetic opioids do represent a risk, it is a risk that can easily be managed. Recognizing and understanding the risk is critical when determining the appropriate response. Using the known facts about fentanyl and its analogs (such as solubility, toxicity, degradation pathways, and others), operational response protocols will be presented for detection, identification, protection from, decontamination, and destruction of fentanyl-based materials. These simple response protocols and resultant example operational guidelines will assist responders in safely and effectively responding to this high hazard threats.

Taught by Dr. Christina Baxter

H12 - The Rule of Three: HazMat’s Primary Number

Over the years, the rule of three has stood the test of time, Everything in HazMat can be condensed to the concept of three (3). Things like Solids, Liquids or Gases; Health, Flammability, and Stability; Verify, Verify, Verify; or even is it, - Safe, Unsafe and Dangerous? This program will help any HazMat responder break a problem down to three concepts and from that point they can organize the incident with an eye towards a successful conclusion. These guidelines are to help everyone from the first responder on the scene to the senior HazMat commander. The core concept of size up is based on our old friend the “Rule of Three”.

Taught by Mike Callan

3:00 PM - Saturday, October 19th

J1 – (LEPC) Why We Should Conduct a Post-Incident Analysis

Most of us have participated in a Hotwash following an incident, event, or an exercise. But what happens with that info obtained during this critical review? How do we get the most out of it? What is an After Action Report? And how do we address lessons learned in an Improvement Plan? This session will review how to conduct an effective Hotwash, develop a comprehensive After Action Report, and implement a workable Improvement Plan that should enhance your organization’s readiness. Participants are encouraged to bring along a recent After Action Review to discuss contents and means to improve future AARs.

Taught by Joe Leonard, Katie Strauss and Kelly Schnapp

J2 - Damn...There is NO APP FOR THAT! Part 2 of 2 See H2

Taught by Frank Docimo

J3 - Fourth Generation Agents

In 2018, a Russian dissident and daughter were exposed to a Fourth Generation Agent (FGA). A few months later, two UK residents were exposed to the same agent. In both cases, there were lessons learned in assessing the patients, responder health and safety, decontamination and treatment. In January 2019, the White House National Security Council Staff with the Federal Departments and Agencies developed consensus guidance to the first responder and hospital communities on FGA to ensure worker health and safety as well as to lead to rapid recognition of FGA exposures and treatment in order to save lives. Although there is currently no credible threat that FGA use is expected in the future, the presentation aims to increase awareness of these particular chemical agents. The presentation will cover valuable learning points from the UK experience of 2018, first response considerations; emphasis on standard precautions; hospital considerations to include a review of adult nerve agent medical countermeasure treatment; and emergency management considerations.

Taught by CAPT. Joselito Ignacio and Dr. Anthony MacIntyre

J4 - The Challenging Threesome Part 2 of 2 See H4

Taught by Greg Socks, Robert Bradley, Bill Hand and Jason Waterfield

J5 - Pulling it All Together Part 2 of 2 See H5

Taught by Tony Mussorfiti and Andy Byrnes

J6 - Natural Gas Leaks: The Myths, Truths, & Incidents

In this workshop we will look at different ways to respond to natural gas leaks. Looking at the incident from the engine company to the HazMat team response and what each brings to the incident and the types of equipment used. Look at responder safety and the safety of the public. Look at the roll that the Gas Company will play at your incident. We will also talk about political impact at your incident.

Taught by Butch Hayes

J7 - Field Identification of Controlled Substances: A Tool Kit Approach

With highly potent, chemically complex synthetic opioids, cannabinoids, cathinones, and psychoactive substances emerging in the illicit drug market, identifying controlled substances in the field is increasingly difficult. Even “traditional” controlled substances such as cocaine and heroin often contain dangerous, trace amounts of designer synthetic drugs. The “white powder” calls of today require a combination of bulk and trace detection capabilities to fully assess the associated risks for driving PPE and resource considerations. Learn how the scientific principles defining the legal definition for drug identification can be applied in the field using multiple categories of technologies. Hands-on exercises will be conducted to demonstrate how infrared, Raman, Mass Spectrometry, and colorimetric techniques can be used together to identify controlled substances ranging from trace residues to bulk products containing trace levels of highly toxic materials.

Taught by Mark Norman

J8 - Thermal Imaging Cameras: Pros & Cons

This presentation will introduce the uses of infrared technology for fire grounds and beyond. In the detection, the demonstrations and research material will be presented using: Bullard, MSI, FLIR and a Scott series TIC cameras. 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, and search and rescue to help enhance fire programs. During the presentation, we will examine mock & actual photographs and videos from various places. IR (infrared) imaging technology is the perfect tool for detecting possible hydrocarbon leaks within Fire and/or Hazmat industries. This presentation is intended to give the audience an idea of how IR technology can be beneficial for “in field” 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. Also, I will be discussing the abilities to utilize the camera in monitoring and maintaining safety on fire grounds.

Taught by Tim Crockett

J9 - Oxidizers and Pool Chemicals

Oxidizers are highly energetic chemicals that react violently with many other materials and may be involved in fires that are extremely difficult to

extinguish. Swimming pool and spa chemicals are a class of inorganic oxidizers (DOT Hazard Class 5.1) that are commonly used in private, municipal, hotel and school pools and water treatment facilities. Swimming pool chemistry is discussed in terms of recognizing what chemicals and equipment you may expect to see and what has gone wrong when your hazardous materials response team has been summoned to an evacuation at a local pool. Several video demonstrations showing violent reactions when incompatible materials are mixed with common pool chemicals. Organic peroxides, including hydrogen peroxide, (DOT Hazard Class 5.2) are widely used in pulp and paper manufacture, sanitizing surfaces in food processing plants, a variety of polymerization processes and synthetic organic reactions. Physical and chemical properties (The HazMat Dirty Dozen) and reactivity of organic peroxides are discussed and observed with video demonstrations. Students will learn to assess chemical hazards and develop the appropriate tactical response to those hazards during spills and fires involving inorganic and organic oxidizers in compliance with the advanced chemical risk assessment and analysis competency outlined in Chapter 21 of NFPA 472 (2018). This knowledge will allow students to provide their IC with recommendations for PPE, Zones and Perimeters Delineation, Monitoring, Decontamination, Respiratory Protection, Site Safety Plan, Evacuation vs Shelter-in-Place, etc.

Taught by Dr. Tom Murdock

J10 - There's Something About Mary! Part 2 of 2 See H3

Taught by C.J. Haberkorn and Dana Brown

J11 - A Firefighter’s Guide to Ammonia Response

Anhydrous Ammonia is one of the most common hazardous materials in the world. Chances are things you have been taught about responding to these events are wrong and potentially harmful. We will discuss how to use the properties of ammonia to formulate an educated response plan. The basics of ammonia refrigeration systems and PPE considerations will be discussed. This course is designed give everyone from the first in officer to the later arriving hazardous material team the knowledge to handle these incidents the safely.

Taught by William Hellard

J12 - When Things Go Bad

This presentation is geared for the worst-case scenarios that could arise in a hazmat response. Students will learn techniques and tactics for self-rescue, rapid intervention, and maintaining suit integrity.

Taught by Doug Rohn and Joe Bartholomew

9:00 AM - Sunday, October 20th

Closing Keynote

**Manny Ehrlich - Board Member
U. S. Chemical Safety Board**