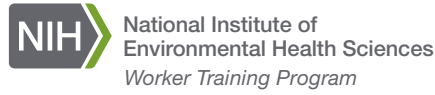


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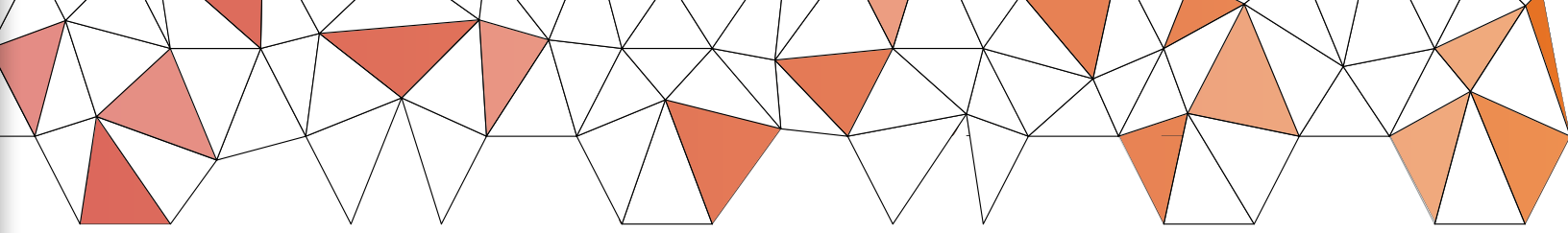
National Trainers' Exchange
**Emerging Workplace Hazards:
Creating Adaptable and Innovative
Safety and Health Training**

May 3–4, 2023 / Indianapolis, Indiana



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Presenting Organization Acronyms

AFC	Alabama Fire College Workplace Safety Training
Atlantic Center	Atlantic Center for Occupational Health and Safety
CPWR	CPWR-The Center for Construction Research and Training Deep South Consortium
HAMMER Federal Training Center	Volpentest Hazardous Materials Management and Emergency Response Federal Training Center
HBCUC	Historically Black Colleges and Universities Consortium
IAFF	International Association of Fire Fighters
IBT	International Brotherhood of Teamsters
ICWUC	International Chemical Workers Union Council Center for Worker Health and Safety Education
Midwest Consortium	Midwest Consortium for Hazardous Waste Worker Training
OAI	Opportunity, Advancement, Innovation in Workforce Development, Inc.
P2R Consortium	Prevention, Preparedness, and Response Consortium
PETE	National Partnership for Environmental Training Association
SWA	Sustainable Workplace Alliance
TNEC-CSEA	The New England Consortium-Civil Service Employees Association
UAW	International Union, United Automobile, Aerospace and Agricultural Implement Workers of America
USW TMC	The Steelworkers Charitable and Educational Organization
WRUC	Western Region Universities Consortium

OTHER ACRONYMS

HWWTTP	Hazardous Waste Worker Training Program
HDPTP	HAZMAT Disaster Preparedness Training Program
ECWTP	Environmental Career Worker Training Program
NIEHS DOE	NIEHS DOE Nuclear Worker Training Program
SBIR	Small Business Innovation Research E-Learning for HAZMAT Program

Roundtable Sessions: Roundtable sessions provide an opportunity for more in-depth discussion on specific topics. Most roundtable sessions will be run with multiple tables, each discussing a different topic. Attendees will have the opportunity to participate in each roundtable discussion during the session.

AGENDA

All meetings will be held on the Lower Level and 21st Floor

DAY 1: Wednesday, May 3, 2023

7:00 – 8:00 a.m. **Breakfast and Registration**

LOWER LEVEL FOYER

8:00 – 9:30 a.m. **Opening Plenary Session** 

MERIDIAN BALLROOM (LOWER LEVEL)

Welcome

- Amanda Allen, Executive Director, OAI, Inc.
- Krystal Hepburn, Ph.D., Principal Investigator, OAI, Inc.
- Sharon D. Beard, Director, Worker Training Program (WTP), National Institute of Environmental Health Sciences (NIEHS)

Nervous Investigators Entertaining Hazmat Students (the NIEHS) Players Presents: WTP Through the Years

- NIEHS WTP grantees and NIEHS National Clearinghouse staff

Ice Breaker

- Kevin Riley, Ph.D., Western Region Universities Consortium (WRUC)

Open Dialogue: What Participants Aim to Get Out of the Trainers' Exchange

- All attendees


Agenda Overview, Housekeeping, and Logistics

- Deborah Weinstock, NIEHS National Clearinghouse

9:30 – 9:45 a.m. **Break**

BREAK STATIONS (SEE MAP ON P. 59)

 = Simultaneous language interpretation is provided for this session.

 = This session is repeated. See the workshop descriptions for details.

9:45 – 10:45 a.m. Workshop Block 1

10

21ST/PANORAMA BALLROOM

Mass Casualty Incident Triage Exercise

Alabama Fire College

11



LL/CIRCLE WEST

Supporting the Implementation of Infectious Diseases Programs in Schools in Puerto Rico

Atlantic Center for Occupational Health and Safety Training

12



LL/MONUMENT SUITE

Training the Community for Disasters: What's in Your Toolbox?

WRUC/University of Washington

13

21ST/MICHIGAN

Where the Rubber Meets the Road

International Union, United Auto Workers

14



21ST/OHIO

Personal Protective Equipment Storage, Management, and Maintenance for Training

Midwest Consortium for Hazardous Waste Worker Training

15

LL/CIRCLE CENTER

Preparing Atmospheres that Demonstrate Air Monitoring Principles

Alabama Fire College

16

21ST/ILLINOIS

Heat and Cold Stress

The New England Consortium-Civil Service Employees Association

17

21ST/LIBRARY

Using a Hybrid Approach to Teach 40-hour HW Classes: The Good, the Bad and the Truly Ugly!

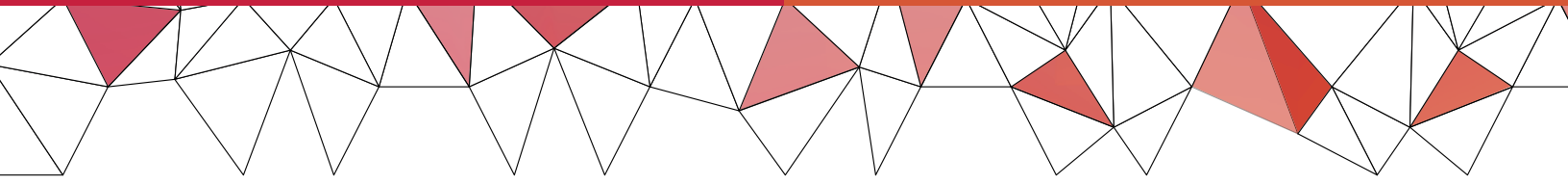
CPWR – The Center for Construction Research and Training



= Simultaneous language interpretation is provided for this session.



= This session is repeated. See the workshop descriptions for details.



18

LL/CIRCLE EAST

Handling Difficult Conversations
The Steelworkers Charitable and Educational Organization

19

LL/MERIDIAN EAST

Roundtable: Trainer and Curriculum Development and Training Techniques

- **Advanced Decision Making with Emerging Infectious Diseases**
Prevention, Preparedness, and Response (P2R) Consortium
- **Virtual/Face-to-Face (F2F) Engagement through Training or Exercises**
Partnership for Environmental Technology Education
- **How to Keep Annual Required Trainings Engaging**
The Steelworkers Charitable and Educational Organization
- **Rumination Management and Positive Reframing; Tools for Emotional Resiliency**
Atlantic Center for Occupational Health and Safety Training
- **Training Techniques for On-line Conferencing**
International Union, United Auto Workers

10:45 – 11:00 a.m. Break

BREAK STATIONS

11:00 a.m. – noon Workshop Block 2

20

21ST/PANORAMA BALLROOM



The ERG and NIOSH Pocket Guide Escape
International Chemical Workers Union Council Center for Worker Health and Safety Education

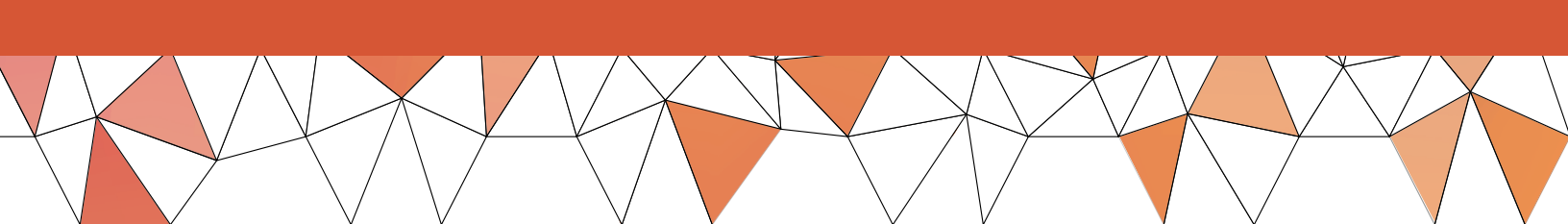
21



LL/MONUMENT SUITE

Training Workers in a Language They Understand
OAI, Inc.

 = Simultaneous language interpretation is provided for this session.
 = This session is repeated. See the workshop descriptions for details.



22   **LL/CIRCLE WEST**

Understanding and Complying with OSHA’s Rule Governing Respirable Silica
Historically Black Colleges and Universities Consortium

23 **LL/MERIDIAN EAST**

Virtual Reality Tools for Industrial Emergency Response Training
International Union, United Auto Workers

24 **LL/CIRCLE EAST**

An All Hazards Approach to Infectious Disease Training by Simplifying the PSD Training Module
NIEHS National Clearinghouse for Worker Safety and Health Training

25 **LL/CIRCLE CENTER**

HARM Worksheet 4.0 and Other Techniques
WRUC/Global Vision Consortium

26  **21ST/OHIO**

A Trainer’s Approach to Increase Awareness of Engineered Nanomaterials in Construction
CPWR – The Center for Construction Research and Training

27 **21ST/ILLINOIS**



Building Social Media Campaigns to Use as Educational Tools
The Steelworkers Charitable and Educational Organization

28 **21ST/MICHIGAN**

Open Ended Comments on Class Evaluations: Using Comments to Improve Online Training
Partnership for Environmental Technology Education

29 **21ST/LIBRARY**

Instruction = Learning + Retention
International Association of Fire Fighters

 = Simultaneous language interpretation is provided for this session.
 = This session is repeated. See the workshop descriptions for details.

Noon – 1:15 p.m. Lunch Plenary Session 

MERIDIAN BALLROOM

RecycleForce: A Preview

· Gregg Keesling, Founder, RecycleForce

1:15 – 2:15 p.m. Workshop Block 3

30



21ST/PANORAMA BALLROOM

Elevating HAZWOPER Training with Augmented Reality

Midwest Consortium and SBIR-Cell Podium, LLC

31



LL/MONUMENT SUITE

Stress and Resiliency Training

The New England Consortium-Civil Service Employees Association

32



LL/CIRCLE WEST

Launching Effective Ergonomic Committees

International Union, United Auto Workers

33

LL/CIRCLE CENTER

Case Studies and Lessons Learned: Interactive Strategies for Health and Safety Training

WRUC/UC Berkeley Labor Occupational Health Program

34

21ST/LIBRARY

Effective Trainer Development Programs

Atlantic Center for Occupational Health and Safety Training

35

21ST/OHIO

Advanced Chemical Risk Assessment and Analysis

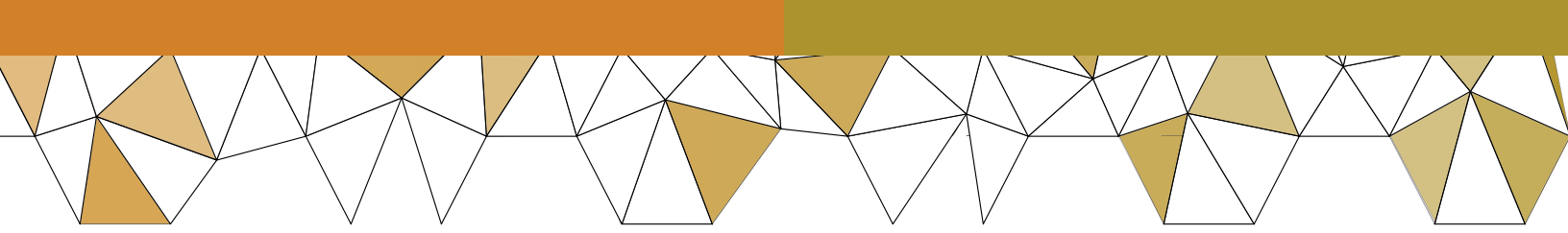
OAI, Inc.



= Simultaneous language interpretation is provided for this session.



= This session is repeated. See the workshop descriptions for details.



36

LL/CIRCLE EAST

The HAZWOPER Challenge: Using Gamification to Teach Difficult Concepts
Sustainable Workplace Alliance

37



21ST/ILLINOIS

Hazards of Gas/Vapor Density
International Brotherhood of Teamsters

38



21ST/MICHIGAN

Community Response During Disasters
Midwest Consortium for Hazardous Waste Worker Training

39

LL/MERIDIAN EAST

Roundtable: Disaster Preparedness and Response

- **Addressing Climate Change in Health and Safety Training**
The Steelworkers Charitable and Educational Organization
- **Balancing Infection Control in High Level Containment Care with Sustainable Practices**
Prevention, Preparedness, and Response (P2R) Consortium
- **First Responder/Community Pre-Plan Tools and Incident Command Training Demos**
SBIR - inXsol, LLC
- **Opioid Use Reduction Through Alternatives to Pain Management**
International Union, United Auto Workers

2:15 – 2:30 p.m. Break

BREAK STATIONS



= Simultaneous language interpretation is provided for this session.



= This session is repeated. See the workshop descriptions for details.

2:30 – 3:30 p.m. Workshop Block 4

40

LL/CIRCLE EAST

Something's in the Air: Incorporating Air Quality Monitoring Tools in Training on Wildfire Smoke

WRUC/UCLA Labor Occupational Safety & Health Program

41



LL/MONUMENT SUITE

Ergonomics and Opioid Use in Construction

CPWR – The Center for Construction Research and Training

42



LL/CIRCLE WEST

Examples of Heat Stress

International Brotherhood of Teamsters

43

21ST/OHIO

Hybrid Hazmat Case Study-What Did We Learn?

Midwest Consortium for Hazardous Waste Worker Training

44

LL/CIRCLE CENTER

Mindfulness-based Conflict Resolution in the Workplace, Home, and Community

International Union, United Auto Workers

45

21ST/LIBRARY

The Book Way or The Way? Ensuring Safety of Responders Via Risk-Based Decision Making.

International Association of Fire Fighters

46



21ST/MICHIGAN

First-in Engine

OAI, Inc.

47



21ST/ILLINOIS

Tailoring Courses to be More Inclusive and Relatable

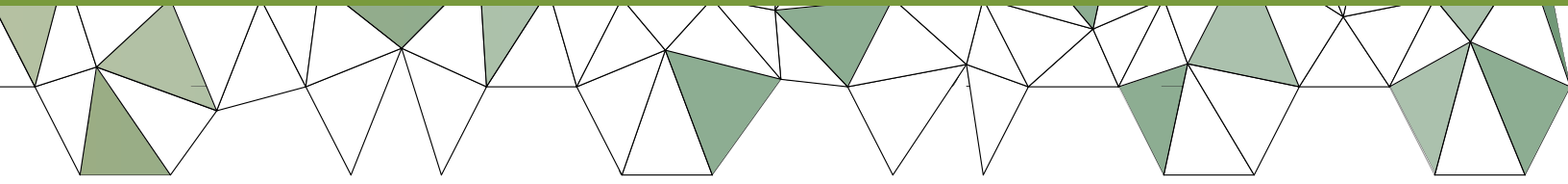
Sustainable Workplace Alliance



= Simultaneous language interpretation is provided for this session.



= This session is repeated. See the workshop descriptions for details.



48  **21ST/PANORAMA BALLROOM**

Emerging 21st Century Disaster Response & Recovery
International Brotherhood of Teamsters

49 **LL/MERIDIAN EAST**

Roundtable: Community Engagement

- **Centering Culture in Community Engagement**
Atlantic Center for Occupational Health and Safety Training
- **Building Partnerships with DOE Facilities and Communities**
The Steelworkers Charitable and Educational Organization
- **COVID Myth Busting: Lessons from Latino Outreach Project in Southeast Michigan**
International Union, United Auto Workers

3:30 – 4:00 p.m. Networking Break with Exhibitors **LOWER LEVEL FOYER**

4:00 – 5:00 p.m. Workshop Block 5

50 **LL/CIRCLE EAST**

Equipment for Consistent Hands-on Training - Local and Distant
Alabama Fire College

51  **LL/MONUMENT SUITE**


A Women’s Caucus- A Voice for Women in Workplace Safety and Health
The New England Consortium-Civil Service Employees Association/The Steelworkers Charitable and Educational Organization


52  **LL/CIRCLE WEST**

Creative Pathways for Underrepresented Workers to High Road Careers
WRUC/UCLA Labor Occupational Safety & Health Program

53 **LL/CIRCLE CENTER**

Fresh Air and Filters: Ventilation Training Techniques to Fight the Pandemic
International Union, United Auto Workers

 = Simultaneous language interpretation is provided for this session.

 = This session is repeated. See the workshop descriptions for details.

54

21ST/MICHIGAN

Impact of COVID-19 Crisis on Training: Changes, Challenges, “New Norms”

Historically Black Colleges and Universities Consortium

55



21ST/LIBRARY

The Show Must Go On: Maintaining Quality Training in Challenging Learning Environments

WRUC/University of Washington

56

21ST/OHIO

Research-Based Training & Awareness Programs

CPWR – The Center for Construction Research and Training

57

21ST/ILLINOIS

Community Participation in Evaluation: Discussing Practices

OAI, Inc.

58



LL/MERIDIAN EAST

Escaping the Monotony of Training Using Game-Based Learning

Volpentest HAMMER Federal Training Center

5:00 p.m. **Adjourn**

5:00 – 7:00 p.m. **Reception**



21ST/PANORAMA BALLROOM

Celebrating 30 Years of the NIEHS/DOE Anniversary Program

- Sharon Beard, Director, NIEHS WTP
- Evan Dunne, Program Manager, Enterprise Learning, National Training Center (NTC), U.S. Department of Energy
- Paul Vandervert, Director, Volpentest HAMMER Federal Training Center, U.S. Department of Energy
- John Morawetz, Former Principal Investigator, International Chemical Workers Union Council Center for Worker Health and Safety (retired)



= Simultaneous language interpretation is provided for this session.



= This session is repeated. See the workshop descriptions for details.

DAY 2: Thursday, May 4, 2023

7:00 – 8:00 a.m. Breakfast and Registration

LOWER LEVEL FOYER

8:00 – 9:00 a.m. Workshop Block 6

60

21ST/ILLINOIS

Recognizing the Impact of Disabilities in the Workplace
Atlantic Center for Occupational Health and Safety Training

61



LL/CIRCLE WEST

Community Response During Disasters
Midwest Consortium for Hazardous Waste Worker Training

62



LL/MONUMENT SUITE

Emerging 21st Century Disaster Response & Recovery
International Brotherhood of Teamsters

63

LL/CIRCLE CENTER

Methods for Reviewing and Evaluating Course Curriculum Annually
Atlantic Center for Occupational Health and Safety Training

64

21ST/MICHIGAN

Effective Systematic Plant Inspections and Audits: Driving Training Through Onsite Needs Assess
International Union, United Auto Workers

65

21ST/LIBRARY

Construction Noise and Hearing Loss Prevention
CPWR – The Center for Construction Research and Training

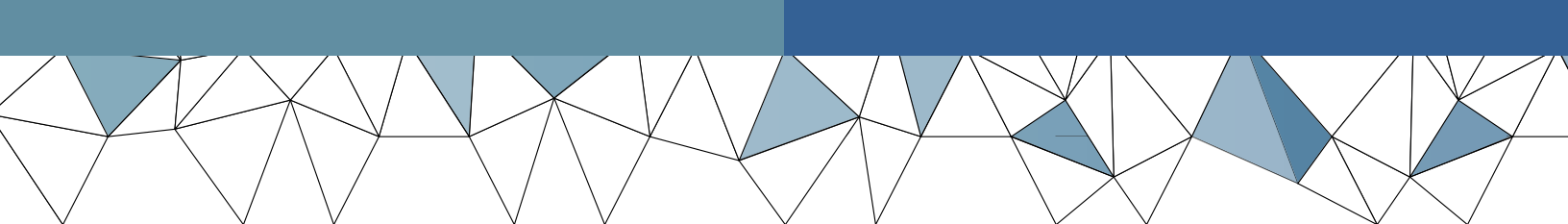
66

21ST/PANORAMA BALLROOM

Phones & Tablets in The Classroom? When and How to Use Electronic Resources for Hazmat Training
International Association of Fire Fighters

= Simultaneous language interpretation is provided for this session.

= This session is repeated. See the workshop descriptions for details.



67 

21ST/OHIO

Tailoring Courses To Be More Inclusive and Relatable
Sustainable Workplace Alliance

68 

LL/CIRCLE EAST

Personal Protective Equipment Storage, Management, and Maintenance for Training
Midwest Consortium for Hazardous Waste Worker Training

69

LL/MERIDIAN EAST

Roundtable: Technology

- **Work Smarter Not Harder with Phone Apps**
The New England Consortium-Civil Service Employees Association
- **Tik-Tok Training Challenge**
The Steelworkers Charitable and Educational Organization
- **Bread & Butter Air Monitoring**
Midwest Consortium for Hazardous Waste Worker Training
- **The Future of Classroom Learning**
NIEHS DOE

9:00 – 9:30 a.m. Networking Break with Exhibitors

LOWER LEVEL FOYER

9:30 – 10:30 a.m. Workshop Block 7

70 

LL/MERIDIAN EAST


Escaping the Monotony of Training Using Game-Based Learning
Volpentest HAMMER Federal Training Center

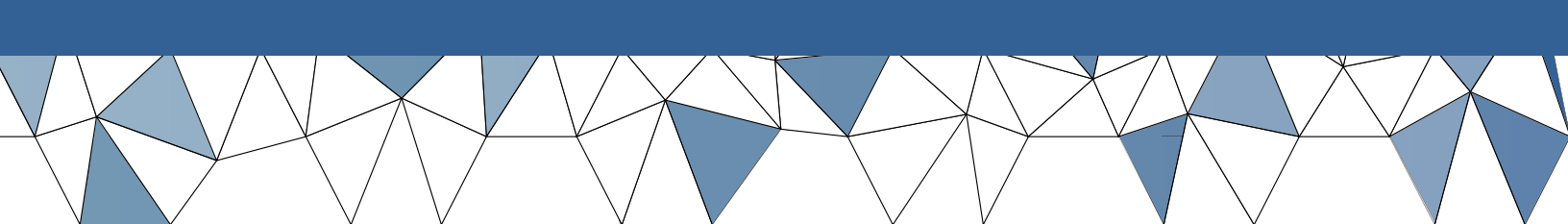
71 

LL/CIRCLE WEST

Empowering Voices via Language Justice! Going Beyond Interpretation to Create Safer Workplaces
International Chemical Workers Union Council Center for Worker Health and Safety Education

 = Simultaneous language interpretation is provided for this session.

 = This session is repeated. See the workshop descriptions for details.



72



LL/MONUMENT SUITE

Climate Change Science, Climate Crisis Solutions, and Worker Education

The New England Consortium-Civil Service Employees Association

73

21ST/LIBRARY

Novel Hands-on Approaches to HAZWOPER Training

Midwest Consortium for Hazardous Waste Worker Training

74

LL/CIRCLE EAST

Risk Assessment & Management During Hazmat Emergencies

WRUC/UCLA Labor Occupational Safety & Health Program

75

21ST/PANORAMA BALLROOM

Live (and Safe!) Demonstrations of Chemical Properties

Alabama Fire College

76



21ST/MICHIGAN

First-in Engine

OAI, Inc.

77

LL/CIRCLE CENTER

Incorporating Wide Area Exposure Simulation in Field Exercises

SBIR - CellPodium, LLC and Atlantic Center for Occupational Health and Safety Training

78



21ST/ILLINOIS

The Show Must Go On: Maintaining Quality Training in Challenging Learning Environments

WRUC/University of Washington

79



21ST/OHIO

Understanding and Complying with OSHA's Rule Governing Respirable Silica

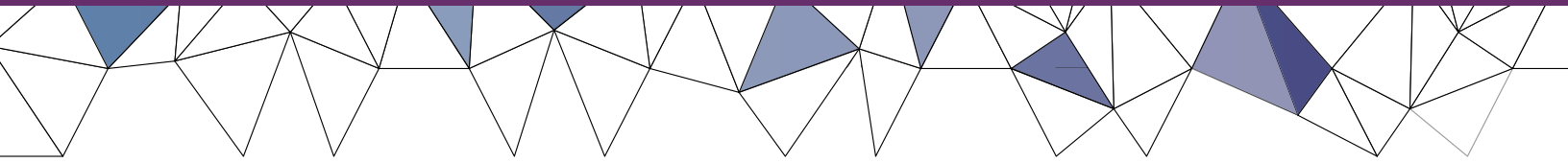
Historically Black Colleges and Universities Consortium



= Simultaneous language interpretation is provided for this session.



= This session is repeated. See the workshop descriptions for details.



10:30 – 10:45 a.m. Break and Departure for Tour

HOTEL FRONT ENTRANCE

Buses will depart from the main hotel lobby doors from 10:30 – 10:50 a.m. Please be on time!

10:45 a.m. – 1:00 p.m. RecycleForce Tour

816 N Sherman Ave, Indianapolis, IN 46220

1:00 p.m. – 1:15 p.m. Break and Travel Time

BREAK STATIONS

1:15 p.m. – 2:30 p.m. Lunch Plenary Session



MERIDIAN BALLROOM

Amplifying Worker Voices through Language Justice: A Brief Overview of Best Practices for Creating Multilingual Spaces

- Jessica Martinez, National Council for Occupational Safety and Health
- Jessie Cruz, National Council for Occupational Safety and Health
- Luis Vasquez, International Chemical Workers Union Council Center for Worker Health and Safety Education

2:30 – 3:30 p.m. Workshop Block 8

80

21ST/LIBRARY

DOE TEPP Training Utilizing MERRTT, Adapting to Your Audience

International Brotherhood of Teamsters

81



LL/MONUMENT SUITE

Introduction to Resiliency Training

International Chemical Workers Union Council Center for Worker Health and Safety Education

82



LL/CIRCLE WEST

Creating an Inclusive Learning Environment

The Steelworkers Charitable and Educational Organization

83

LL/MERIDIAN EAST

What is My Meter Telling Me?

International Association of Fire Fighters

84

21ST/MICHIGAN

Independent Assessment of Risks & Clinical Lab Instrument Design that Impact HHCD Response

Prevention, Preparedness, and Response (P2R) Consortium



= Simultaneous language interpretation is provided for this session.



= This session is repeated. See the workshop descriptions for details.

85**LL/CIRCLE EAST****Fluidity and Adaptability, Overcoming Barriers to Training***Atlantic Center for Occupational Health and Safety Training***86****LL/CIRCLE CENTER****A Hybrid Model for Mold Remediation Training***Midwest Consortium for Hazardous Waste Worker Training***87****21ST/OHIO****Hazards of Gas/Vapor Density***International Brotherhood of Teamsters***88****21ST/PANORAMA BALLROOM****Elevating HAZWOPER Training with Augmented Reality***Midwest Consortium for Hazardous Waste Worker Training and SBIR - CellPodium, LLC***89****21ST/ILLINOIS****A Trainer's Approach to Increase Awareness of Engineered Nanomaterials in Construction***CPWR – The Center for Construction Research and Training*

3:30 – 3:45 p.m. Break**LOWER LEVEL FOYER**

3:45 – 5:00 p.m. Closing Plenary Session**MERIDIAN BALLROOM****Insights from the Occupational Safety and Health Administration (OSHA)**

- James Frederick, Deputy Assistant Secretary, OSHA

NIEHS Supporting the Work of WTP


- David Balshaw, Ph.D., Director, Division of Extramural Research and Training, NIEHS

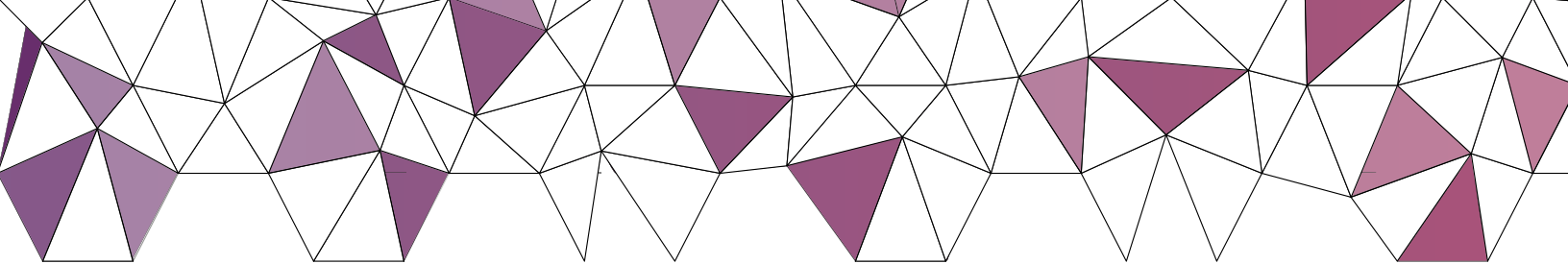
Closing Activity

- Ashlee Fitch, Principal Investigator, The Steelworkers Charitable and Educational Organization

5:00 p.m. Adjourn

 = Simultaneous language interpretation is provided for this session.

 = This session is repeated. See the workshop descriptions for details.



Workshop Block 1

Wednesday, May 3 | 9:45 – 10:45 a.m.

10

Mass Casualty Incident Triage Exercise

SPEAKERS: *David Brazier and Brandon Jones*

CONSORTIUM: *Alabama Fire College*

A mass casualty incident (MCI) is any incident or disaster in which multiple persons injured or killed. It can be man-made, such as a HAZMAT incident, terrorist action, multi-car accident, or a natural disaster such as tornado or fire. The key is that the emergency medical service resources, such as personnel and equipment, are overwhelmed by the number and severity of casualties. Alabama Fire College (AFC) has developed a course that teaches common systems to triage multiple victims so as to provide the best care to the most people. This presentation will provide a brief introduction to triage and then demonstrate the unique cumulative exercise AFC developed to practice the triage system using teddy bears as victims in an easily setup mock disaster scene. Workshop participants will act as responders to triage victims under environmental and time stressors. A wrap-up will allow question and answers.

- **PRIMARY TOPIC:** Disaster/Emergency Response and Preparedness
- **COMPLEXITY:** Open to all

11

Supporting the Implementation of Infectious Diseases Programs in Schools in Puerto Rico

SPEAKERS: *Marysel Pagan Santana*

CONSORTIUM: *Atlantic Center for Occupational Health and Safety Training*

School closings during public health emergencies remain at the forefront of discussions regarding the health and safety of school-aged children. However, there is limited focus on health and safety for adult workers in this occupational environment. This workshop will overview the approach and content Migrant Clinicians Network used to successfully facilitate training in Puerto Rico for the health department and school personnel regarding occupational health and safety during public health emergencies in school environments. The program increased the capacity of health department staff to support the development and implementation of protocols to protect the health of workers in schools. Moreover, it provided school nurses and staff training to support the development and implementation of infectious diseases control programs. Through this initiative, MCN fostered collaboration between public health agencies and schools and trained over 700 workers on essential topics related to infectious diseases management. The process also offered both sectors the opportunity to understand the needs and challenges to reach a single goal: to keep workers and students safe while maintaining in-person education.

- **PRIMARY TOPIC:** Community Engagement
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**

12

Training the Community for Disasters: What's in Your Toolbox?

SPEAKER: *Darren Branum*

CONSORTIUM: *WRUC/ University of Washington*

Disasters such as floods, wildland fires, and earthquakes can quickly overwhelm local responders. Training local community residents to assist during emergencies strengthens buy-in from the community, bolsters community preparedness, and improves emergency response activities. This presentation will address strategies that emergency responders can use to communicate with and train local community members to assist in disaster emergency response. We will demonstrate how the SARTOPO app, a tool generally used in search and rescue operations, may be adapted for training community members to support emergency response activities. Workshop participants will participate in a hands-on activity to demonstrate the use of the SARTOPO app in a simulated post-disaster scenario.

- **PRIMARY TOPIC:** Disaster/Emergency Response and Preparedness
- **COMPLEXITY:** Open to all
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**

13

Where the Rubber Meets the Road

SPEAKER: *Peter Gentles and Sherrod Elledge*

CONSORTIUM: *International Union, United Auto Workers*

This session will describe hands on training techniques used for new hires at an integrated steel mill. A learning Lab was constructed at very low cost to cover lock-out tag-out, blocking and bleeding, crane safety, confined space, electrical safety, emergency response, and fall hazards. UAW has experienced severe injuries, near misses and fatalities involving workers newly hired or recently transferred to

unfamiliar work environments. Many young workers have limited work experience with machinery in industrial settings. The importance of comprehensive hazard recognition and problem solving is especially important for new hires who may be moving from service industry jobs to manufacturing. It is also essential to have hands on training equipment for complicated hazardous exposures. Several new hire accidents will be described. The benefits of basic training will be enumerated, and description of each learning Lab component will be provided to participants.

- **PRIMARY TOPIC:** Participatory Methods
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic

14

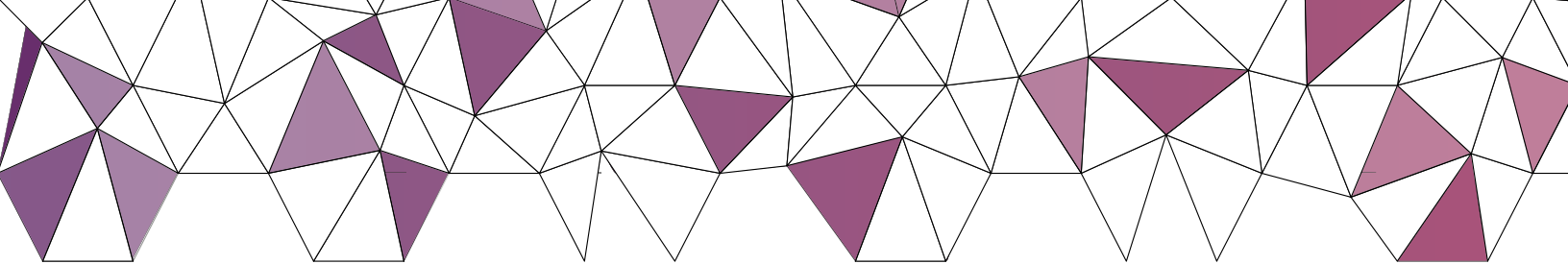
Personal Protective Equipment Storage, Management, and Maintenance for Training

SPEAKERS: *Rob Schmidt and John Hanson*

CONSORTIUM: *Midwest Consortium for Hazardous Waste Worker Training*

Personal protective equipment (PPE) is vital for helping to ensure hazardous waste worker health and safety. Lakeshore Technical College (LTC) uses PPE in a variety of training programs. It is important that instructors and staff have the resources and a well-designed plan for managing instructional equipment and supplies for these programs. In this workshop, attendees will learn how LTC stores, manages, and maintains the various types and levels of PPE used in its courses. This includes a newly installed ozone decontamination room. In addition, the presenters will discuss different activities, such as show-and-tell and demonstrations they use to deliver PPE training to program participants.

- **PRIMARY TOPIC:** Hazardous Waste Worker Training
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic
- **THIS SESSION WILL BE REPEATED ON THURSDAY AT 8:00 A.M. (SESSION 68)**



15

Preparing Atmospheres that Demonstrate Air Monitoring Principles

SPEAKERS: *Ken Oldfield and Ted Krayner*

CONSORTIUM: *Alabama Fire College*

An uncontrolled release of hazardous materials is likely the highest chemical exposure that responders will face. There is no safe and reliable way to detect or measure them with our senses; so, air monitoring instrumentation is the best tool for measuring the hazard level. Hazmat training programs strive for realism in exercises, but may settle for simply demonstrating the calibration of air monitoring instruments. This exercise uses actual readings of easily prepared or obtained atmospheres in gas sampling bags tied to written scenarios to demonstrate key principles of air monitoring. Participants will work in small groups with sample bags and instruments to record results and answer questions about a scenario and present their findings to the large group and principles will be identified and discussed.

- **PRIMARY TOPIC:** Disaster/Emergency Response and Preparedness
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic

16

Heat and Cold Stress

SPEAKERS: *Neil Hawley and Patricia A Strizak*

CONSORTIUM: *The New England Consortium-Civil Service Employees Association*

Whether you're working outside on a construction site, or in a large manufacturing plant, heat & cold related illnesses could affect you. Taking the necessary steps to avoid heat and cold related illnesses, so you can get through the hot summer and cold winter months without any incident. Objectives: Understand your body's reaction to heat and cold; How hot and cold environments increase likelihood of injuries and illnesses;

Why your body's cooling system may fail; The types of heat and cold related illnesses; Factors causing heat and cold illnesses; Personal factors that may cause heat and cold illness; Basic preventive measures for heat and cold stress; Heat and cold related apps for cell phones. Review of elevated core body temperatures may cause the following illnesses: heat cramps, heat exhaustion, and heat stroke. Low body temperatures causing frost bite and hypothermia. Who is at risk and how to prevent illness or injuries. Know the signs and symptoms of heat and cold illness.

- **PRIMARY TOPIC:** Hazardous Waste Worker Training
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic

17

Using a Hybrid Approach to Teach 40-hour HW Classes: The Good, the Bad and the Truly Ugly!

SPEAKERS: *Gary Gustafson, Tom Sundly, and Steve Surtees*

CONSORTIUM: *CPWR – The Center for Construction Research and Training*

The transition to having to use distance learning during the pandemic created an opportunity to explore the use of the teaching methodologies in a 40-hour Hazardous Waste course taught in a traditional method. This session will provide an overview of a 40-hour Hazardous Waste Worker taught using a blend of distance learning and in-person training. Trainers will discuss the preparation and resources needed to teach a hybrid class, what it was like using two very different teaching methods, and the lessons learned.

- **PRIMARY TOPIC:** Virtual/Hybrid Learning Approaches
- **COMPLEXITY:** Open to all



18

Handling Difficult Conversations

SPEAKERS: *Nikki Pollo and Fredy Llanos*

CONSORTIUM: *The Steelworkers Charitable and Educational Organization, Tony Mazzocchi Center*

Whether you are facilitating a class on HAZWOPER or OSHA, participants have different backgrounds and viewpoints that can make their way into a classroom, some of which may be unwelcome. How should you prepare for this kind of discussion? How do you find the right words in the moment? And, how can you manage the exchange so that it goes as smoothly as possible? In this full-session workshop, trainers will exchange tips and techniques utilized to have difficult conversations and de-escalate tension in the classroom.

- **PRIMARY TOPIC:** Instructor Development
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic

19

Roundtable: Trainer and Curriculum Development and Training Techniques

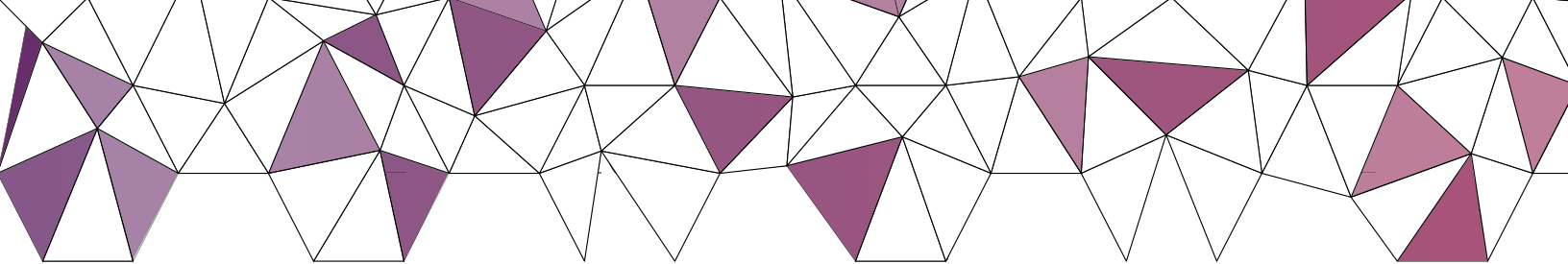
■ **COMPLEXITY:** Open to all

Advanced Decision Making with Emerging Infectious Diseases

SPEAKERS: *Aurora Le, Shawn Gibbs*

CONSORTIUM: *Prevention, Preparedness, and Response (P2R) Consortium*

Over the past few years, the leadership of the NIEHS WTP awardees encountered and made many difficult decisions amongst evolving and sometimes inaccurate or conflicting information related to the COVID-19 pandemic. This session is designed to learn from the past experiences of awardee leadership on what did and did not work during an evolving situation. For example, early in the pandemic training on donning and doffing of N95 filtering facepiece respirators (FFR) was available and provided by some NIEHS WTP Awardees; yet usage of N95 FFR was not recommend by CDC and local health department beyond healthcare workers at the time. What went into that individual awardee leadership decision making process and were there local or national ramifications of the decision? This session will also discuss how each awardee approached refining and updating their course offerings in the face of rapidly changing recommendations, including conflicting best-practices between organizations, states, and the CDC. The overall goal of this session will be an advanced discussion about approaches taken with training curriculum development and implementation, lessons learned from the COVID-19 pandemic, and how they can be applied to the next emerging and quickly evolving infectious disease event.



Virtual/Face-to-Face (F2F) Engagement through Training or Exercises

SPEAKER: *Joseph Hilliard*

CONSORTIUM: *Partnership for Environmental Technology Education*

Since the pandemic, the dynamics of training has significantly changed. The question is how to engage the participants into a true learning objective and activities that provide skillsets to demonstrate the knowledge gained? This workshop will facilitate a participant Team approach to a round-table type discussion to explore tools to be not only effective, but a value in your delivery. We will briefly touch on the earlier problems, but importantly the lessons learned to overcome with success. The participants will be divided into Teams with a Team Lead assign to discuss and conduct brief outs throughout. This will be an activity filled Team approach and participation and engagement required.

How to Keep Annual Required Trainings Engaging

SPEAKERS: *Fiona Galley, Jaret Marquez, Dawn Anderoli*

CONSORTIUM: *The Steelworkers Charitable and Educational Organization*

Workers in various industries participate in annual refresher trainings that are required by law or other policy. It is important that workers receive these trainings yearly in order to stay well-versed on the information that is necessary to safely perform their job tasks. Often, the information in these trainings remains the same from year to year. Therefore, a challenge that is encountered when developing curricula for these annual trainings is keeping the activities updated and interesting, even if the information remains consistent. In this roundtable discussion, we will share techniques used to keep annual refresher trainings interesting and thought-provoking. This may include the use of games, the introduction of new elective topics, and/or changing facilitation methods. Trainers are encouraged to attend and be ready to share thoughts and ideas on how to successfully update refresher trainings. Facilitators will lead the group in a game to provide one

technique used when updating curricula annually. Trainers will leave this roundtable discussion with tips and ideas on how to successfully update annual trainings with exciting activities and new ways of teaching the materials.

Rumination Management and Positive Reframing; Tools for Emotional Resiliency

SPEAKER: *Lisa Orloff*

CONSORTIUM: *Atlantic Center for Occupational Health and Safety Training*

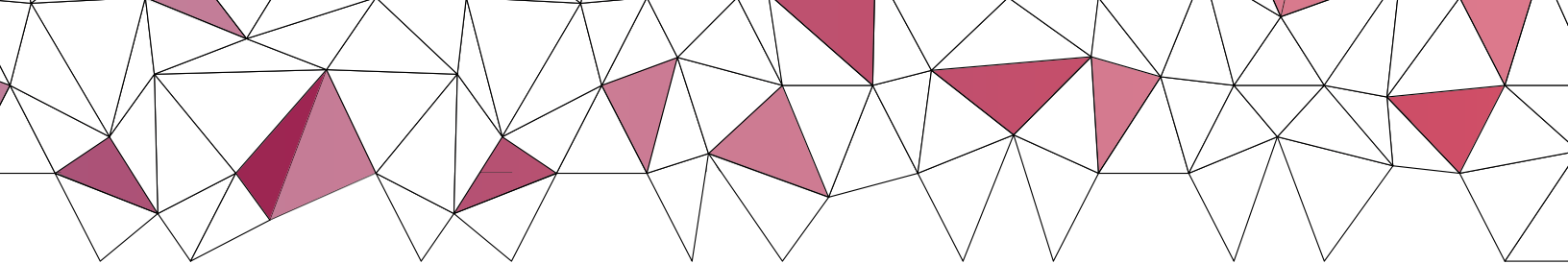
Rumination is defined as engaging in a repetitive negative thought process that loops continuously in the mind without end or completion. The pattern can be distressing, difficult to stop, and unusually involves repeating negative thoughts or hyper focus on a problem. Rumination is a common issue for leaders, managers, and those in high stress environments. Positive reframing can help reduce rumination by changing how one thinks about a negative or challenging situations. This involves retraining our thoughts to a more positive direction. It can also involve identifying a lesson to be learned from a difficult situation. In this session participants will learn and apply reframing techniques. Positive reframing is an important tool to develop that helps to maintain and build emotional resiliency.

Training Techniques for On-line Conferencing

SPEAKERS: *Richard Pack, Darius Sivin*

CONSORTIUM: *International Union, United Auto Workers*

UAW has held several virtual multi-day trainings during the Pandemic. Worker trainers facilitated multiple breakout sessions. Simultaneous translation was used to achieve language justice for Spanish speaking participants. This session will present a brief review of the basics in using Zoom for conferences and will revisit some of the struggles and successes of attempting to adapt in-person conferences and trainings to an online environment. We will focus on the behind the scenes work of running a training session, how to conduct small group breakout sessions, minimum preparation needed for small group facilitators and for behind-the-scenes



monitors. In addition to reviewing administrative settings that may make running a Zoom session easier, basic tips will be covered. A handout for the session will cover the following items:

- Scheduling a meeting (including some admin settings)
- Documents you may want to create
- Items to have on hand
- Monitoring a Zoom session (Chat and Participants)
- Sharing a Screen
- How to create and launch Polls and Breakout rooms
- How to save chat area
- How to record session
- Information you need to save and collect



Workshop Block 2

Wednesday, May 3 | 11:00 a.m. – noon

20

The ERG and NIOSH Pocket Guide Escape

SPEAKER: *Joel Alvarez*

CONSORTIUM: *International Chemical Workers Union Council
Center for Worker Health and Safety Education*

The workshop will briefly discuss how to use both the Emergency Response Guidebook and the NIOSH Pocket Guide. After the discussion you will be divided into groups to help you navigate through a scenario using an escape room format. Clues will be found in the resources given as well as around the class. You will have a time limit to escape. The workshop facilitates teamwork and practice use of the resources to get out of the escape room.

- **PRIMARY TOPIC:** Hazardous Waste Worker Training
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic

21

Training Workers in a Language They Understand

SPEAKER: *Daniel Ramir*

CONSORTIUM: *OAI, Inc.*

The Latino Worker Safety Center (LWSC), now in its twelfth year, is a dedicated OSHA compliance training center specializing in training workers in a language they understand. By the end of this training, participants will learn how to create or enhance training for limited English proficiency workers.

- **PRIMARY TOPIC:** Language Justice and Cultural Sensitivity
- **COMPLEXITY:** Open to all
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**

22

Understanding and Complying with OSHA's Rule Governing Respirable Silica

SPEAKER: *Darian Williams*

CONSORTIUM: *Historically Black Colleges and Universities Consortium*

About 2.3 million people in the U.S. are exposed to silica while working. Products like sand, stone, concrete, and mortar all contain silica. Workers are exposed to silica when cutting, sawing, grinding, drilling, and crushing items like stone, rock, and concrete. Additional exposure can occur in other processes like foundry work and hydraulic fracturing. Workers who inhale these very small crystalline silica particles are at increased risk of developing serious silica-related diseases such as: silicosis, lung cancer, chronic obstructive pulmonary disease, and kidney disease. To protect workers from exposure, OSHA has issued two respirable crystalline silica

standards to lessen the exposure in all three major industries: construction, general, and maritime. OSHA recommends various controls. They are highlighted in General Industry and Maritime Standard 1910.1053, Respirable Crystalline Silica, Appendix A, Methods of Sample Analysis, Appendix B, Medical Surveillance Guidelines and OSHA Construction Standards 1926 Subpart Z, Toxic and Hazardous Substances, 1926.1153, Respirable Crystalline Silica, Appendix A, Methods of Sample Analysis, Appendix B.

- **PRIMARY TOPIC:** Training Approaches for Worker Empowerment
- **COMPLEXITY:** Open to all
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**
- **THIS SESSION WILL BE REPEATED ON THURSDAY AT 9:30 A.M. (SESSION 79).**

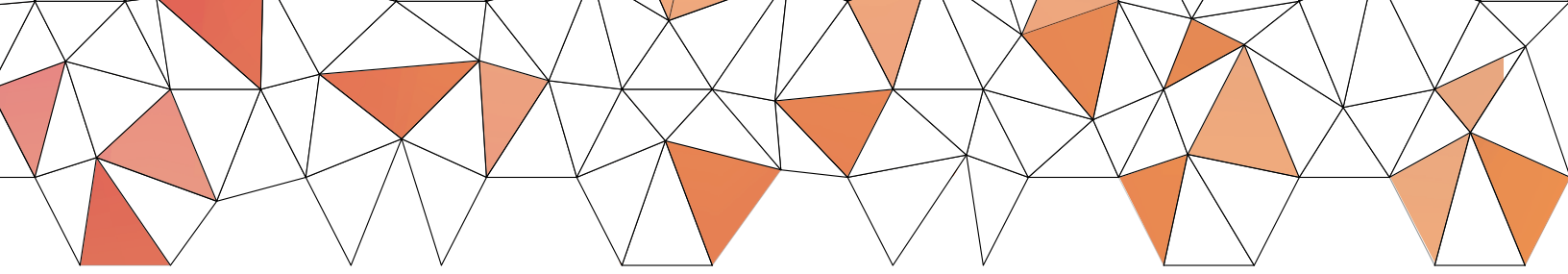
23

Virtual Reality Tools for Industrial Emergency Response Training

SPEAKERS: *Sherrod Elledge and Ross Baize*

CONSORTIUM: *International Union, United Auto Workers*

Recognizing the dangers of chemical reactivity and remembering mitigation techniques for these hazards is an important learning objective in Industrial Emergency Response (HAZWOPER) training. Numerous hands-on table-top exercises demonstrating chemical properties and reactivity have been used in the past to provide an interactive learning experience to introduce basic chemical concepts. Cementing these concepts allows IER training participants to navigate Safety Data Sheets, recognize storage hazards, plan ahead for spill response and develop appropriate evacuation procedures. UAW has been experimenting in augmenting in-person training with virtual reality training tools. A VR program has been developed to enhance the "Will It Burn, Blowup or React" section of the IER training curriculum. Using VR goggles combined with classroom projection provides an immersive repeatable experience that can be blended with the Small Group Activity



method. This session will describe benefits and drawbacks to VR training. The VR module will be demonstrated with 10 sets of VR goggles available for use during the session.

- **PRIMARY TOPIC:** Disaster/Emergency Response and Preparedness
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic

24

An All Hazards Approach to Infectious Disease Training by Simplifying the PSD Training Module

SPEAKER: *Jonathan Rosen*

CONSORTIUM: *NIEHS National Clearinghouse for Worker Safety and Health Training*

The National Clearinghouse developed a pathogen safety guide and training module during the Ebola crisis, 2013 – 14: The goal was to prepare workers to access existing resources to better assess exposure, preventive measures, and engage co-workers, employers, and policy makers to prevent occupational infections. This approach empowers participants to learn about a host of infectious agents using evidenced-based websites and apps. The program features a worksheet, glossary, and case studies to learn about specific infectious agents they are concerned with. The full program is 4 to 6 hours and was at an advanced technical level, deterring its use. Participants will learn to use a simplified, shorter workshop using the PSD materials. The main activities include participants working in small groups to list occupational infectious agents in their workplaces, downloading the PSD app, learning about available websites, and then working in groups to research characteristics and protective measures for a specific infectious agent or case study. This can be done in 1.5 to 2 hours and avoids excessive lecturing about risk assessment theory and methods. When this shorter approach has been implemented, there was a high level of engagement and satisfaction among participants.

- **PRIMARY TOPIC:** Training Approaches for Worker Empowerment
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic

25

HARM Worksheet 4.0 and Other Techniques

SPEAKER: *Paul Penn*

CONSORTIUM: *WRUC/Global Vision Consortium*

Conveying key technical concepts regarding chemical characteristics (e.g., toxicity, flammability) can be daunting. Using an updated and expanded version of the HARM worksheet to assist students to conceptualize those characteristics, the measurements used (e.g., TWA, STEL, IDLH, LEL, FP), the relative potential for harm, and how the worksheet can be used in decision making and has proven effective. Students fill out the HARM worksheet for a specific chemical (i.e., xylene) as the material is presented. A subsequent small group activity using similar source material (e.g., SDS, NIOSH Pocket Guide, ATSDR MMG, WISER, ERG) for different chemicals (e.g., ammonia, HCl, parathion) reinforces the subject matter and student comprehension. Attendees will have the opportunity to participate in both components. [If time allows techniques to minimize test anxiety will be addressed.]

- **PRIMARY TOPIC:** Innovative Training Methodologies
- **COMPLEXITY:** Open to all

26

A Trainer's Approach to Increase Awareness of Engineered Nanomaterials in Construction

SPEAKER: *Gavin West*

CONSORTIUM: *CPWR – The Center for Construction Research and Training*

During the past two decades, nanotechnology has enabled considerable improvements to materials used in different industry sectors including electronics, construction, packaging, food, energy, healthcare, automotive, and defense. Materials can be nano-engineered to be stronger, lighter, more durable, more reactive, better electrical conductors, and more. The flipside is that engineered nanomaterials can also pose hazards to workers exposed to them on the job. This session will explore how CPWR uses a train-the-trainer approach, informed by ongoing research, and tailored to specific trades, to make construction workers more aware of the risks posed by engineered nanomaterials and how to prevent exposures. Participants will learn about the technical information, core concepts, and group exercises used in the curriculum, and how to access resources to use in their own courses. A facilitated group discussion and brainstorming activity will focus on challenges and effective approaches when training workers about emerging hazards, like engineered nanomaterials, which may be unfamiliar to the public and not yet fully understood by researchers. Participants will be encouraged to share and reflect on their own experiences.

- **PRIMARY TOPIC:** Curriculum Development
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic
- **THIS SESSION WILL BE REPEATED ON THURSDAY AT 2:30 P.M. (SESSION 89).**

27

Building Social Media Campaigns to Use as Educational Tools

SPEAKERS: *Nikki Pollo and William Bonilla*

CONSORTIUM: *The Steelworkers Charitable and Educational Organization*

Social media and other interactive platforms continue to influence a wide audience, whether these networks are where people connect with distant family and friends, or gather information or news topics. Sometimes it is easy to get caught up in the negatives of these platforms rather than focus on the positives, like building a community. In this full-session workshop, participants will learn about how social media campaigns may be created to share educational information – especially in regards to worker health and safety – and come up with some ideas on their own. Many grantees within the Worker Training Program are already using social media to disseminate information. Participants will also have a chance to share these experiences and ask questions among the group.

- **PRIMARY TOPIC:** Innovative Training Methodologies
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic

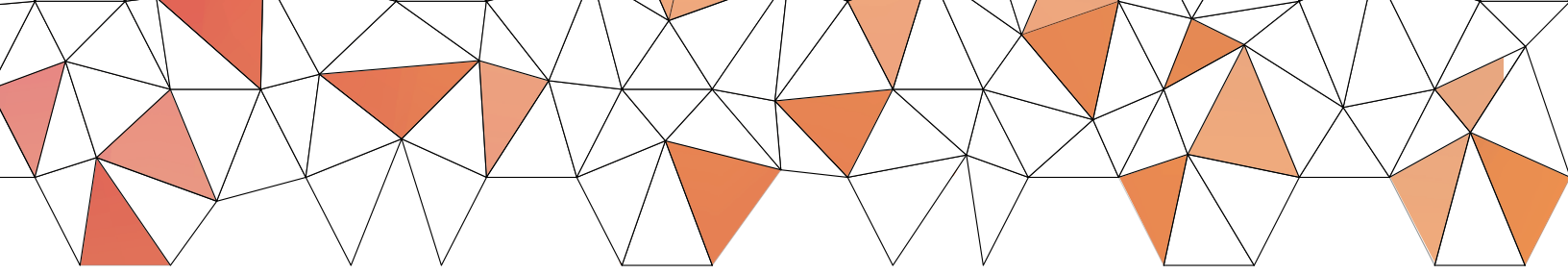
28

Open Ended Comments on Class Evaluations: Using Comments to Improve Online Training

SPEAKER: *Janet Kerley*

CONSORTIUM: *Partnership for Environmental Technology Education*

In 2020, SFCC PETE made a rapid transition from providing LANL in person training classes to an online webinar format. Class evaluations offered in each class included both close ended and open-ended survey questions. Close ended questions on class evaluations focus respondents' attention to specific responses selected by the instructor/class



designer. However, open ended questions allow respondents to reveal what is on their minds and/or their experience at the conclusion of the class. This presentation evaluates the open-ended comments from 166 webinar classes taught from 2020 to 2022 by the PETE SFCC at LANL. Using the attendee comments made on class evaluations, this paper evaluates the progress from 2020 to 2022 in improving the online training experience. A facilitated discussion about how trainers can utilize open ended comments to improve class attendees' perception and satisfaction with online training.

- **PRIMARY TOPIC:** Instructor Development
- **COMPLEXITY:** Open to all

29

Instruction = Learning + Retention

SPEAKERS: James Burgess, Reid Wharton, and Brent Cowx

CONSORTIUM: International Association of Fire Fighters

With the surge in web-based training in recent years and the fact that many instructors need refreshment on instructional methodology, this session will focus mainly on how students learn. Just as important, is how the student retains that information. INSTRUCTING = LEARNING + RETENTION is a 60-minute, interactive presentation that will review the 6 levels of learning, followed by the 7 levels of retention. There will also be time allotted for participants to discuss and share real life examples of how we can incorporate this knowledge into our teaching approach. This session will challenge you to come up with better teaching techniques to make better learning outcomes for your students.

- **PRIMARY TOPIC:** Instructor Development
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic

Workshop Block 3

Wednesday, May 3 | 1:15 – 2:15 p.m.

30

Elevating HAZWOPER Training with Augmented Reality

SPEAKERS: Justin Schuller, Peter Schmitt, and Cesar Bandera

CONSORTIUM: Midwest Consortium for Hazardous Waste Worker Training and SBIR - CellPodium, LLC

In recent years, augmented reality has been used to do everything from visualizing a prospective furniture purchase in your home to catching virtual pocket monsters appearing in your neighborhood. The general principle of the technique is simple: use technology to see things that are not really there. CellPodium applied these principles to create a tool to enhance chemical emergency response training. Instructors can create large-scale chemical release scenarios on a digital map or small-scale chemical release scenarios using Bluetooth beacons. In either case, participants need nothing more than a single downloadable app to transform their internet/Bluetooth-enabled smartphone into a monitor displaying readings for the scenario the instructor created. The Environmental Management Institute at Ivy Tech Community College has been implementing these tools in their HAZWOPER training courses to great effect, allowing students to learn how to respond to chemical spills from acetone to xylene safely without ever spilling a drop of the real stuff. Attendees will learn how this technology can be applied during training and participate in a demonstration scenario using their own devices.

- **PRIMARY TOPIC:** Innovative Training Methodologies
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic
- **THIS SESSION WILL BE REPEATED ON THURSDAY AT 2:30 P.M. (SESSION 88).**

31

Stress and Resiliency Training

SPEAKER: *Milagros Barreto and Patricia Strizak*

CONSORTIUM: *The New England Consortium-Civil Service Employees Association*

In this workshop participants will learn about stress responses with a focus on resilience. The American Psychological Association defines resilience as “the process of adapting well in the face of adversity, trauma, tragedy, threats, and even significant sources of stress.” We will focus on the following factors that are associated with resilience: having resilient role models, the ability to regulate emotions and cope with fear, cognitive flexibility including acceptance and positive cognition, active versus passive coping style, social support, meaning and purpose, and how toxic stress differs. We will discuss how to learn to cope with moderate and short-term stress, how to establish a healthy stress response system and strengthen resilience in each participant. In addition, the positive impact workers benefit from the inclusion of resilience and stress programs in Occupational Safety and Health protocols.

- **PRIMARY TOPIC:** Resiliency Training
- **COMPLEXITY:** Open to all
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**

32

Launching Effective Ergonomic Committees

SPEAKERS: *Ross Baize and Sherrod Elledge*

CONSORTIUM: *International Union, United Auto Workers*

Strains and sprains, back ailments, carpal tunnel syndrome, and other cumulative trauma disorders account for over half of the lost time due to injuries. UAW has developed a set of interactive classes that give participants broader understanding of health effects of physical risk factors, methods of job analysis and abatement methods. This session will demonstrate a number of hands-on techniques used to transfer

complex concepts such as human anatomy, anthropometry, biomechanics, and force measurements efficiently. UAW conducts a weeklong training designed to develop teams to analyze jobs and propose solutions for worksites. The curricula have been used effectively in industrial settings, the service industry, casinos, and office settings. Spanish language curricula has been used to reach UAW members in Puerto Rico as well as precarious workers who are often assigned to the most onerous jobs. Participants in this session will learn how to launch a worker centered ergonomics program from case studies taken from the service industry in Puerto Rico, and the gaming industry in Connecticut.

- **PRIMARY TOPIC:** Participatory Methods
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**

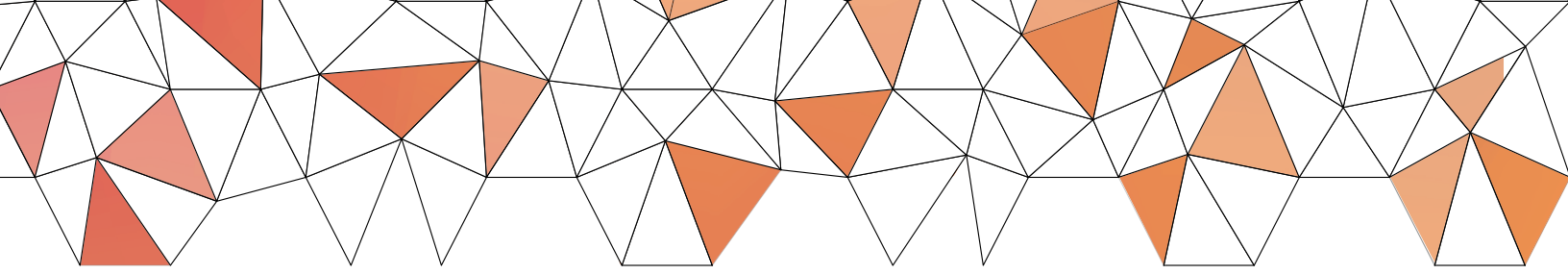
33

Case Studies and Lessons Learned: Interactive Strategies for Health and Safety Training

SPEAKER: *Lawrence Wong*

CONSORTIUM: *WRUC/UC Berkeley Labor Occupational Health Program*

Incorporating interactive opportunities enhances the learning experience in health and safety training. In this presentation we will consider how interactive tools such as review games and workplace-based scenarios can be used to review “lessons learned” from real-life incidents or near-misses drawn from participants’ own work experiences. These tools can be tailored to specific audiences and can support participants to become proactive at implementing preventive health and safety procedures in the workplace. We will also consider how these tools can expand the discussion of a scenario exercise beyond emergency response to engage participants in thinking about underlying causes, identifying control strategies that worked and assessing what didn’t work. In this presentation, we will show examples of how discussions over “lessons learned” from incidents and near misses can be utilized in either classroom or virtual settings to enhance learning about how to prevent, prepare for and respond to future incidents.



Workshop participants will practice the use of a case-study exercise, as a tool to enhance learning in discussion about “lessons learned”.

- **PRIMARY TOPIC:** Innovative Training Methodologies
- **COMPLEXITY:** Open to all

34

Effective Trainer Development Programs

SPEAKERS: *Mitchel Rosen and Jonathan Rosen*

CONSORTIUM: *Atlantic Center for Occupational Health and Safety Training*

Developing trainers is critical to the long-term success of our program. There are several methods used for trainer development, including large trainer conferences and train-the-trainer programs for specific modules or courses. This session will provide an overview of various types of trainer development programs. The Atlantic Center for Occupational Health and Safety Training provided train-the-trainer programs for the NIEHS Opioids in the Workplace, COVID-19 Worker General Awareness and Essential, and Returning Worker courses, and an offers a trainers exchange. In this participative workshop participants will share their experiences and methods employed to transfer knowledge and inspire new and veteran peer trainers in key safety and health content areas. Examples featuring several NIEHS grantees will be used to start a conversation around the different trainer development programs offered across the NIEHS WTP network, and to catalog the efforts so that others can learn from and incorporate these trainer development programs for their instructors.

- **PRIMARY TOPIC:** Instructor Development
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic

35

Advanced Chemical Risk Assessment and Analysis

SPEAKER: *Tommy Murdock*

CONSORTIUM: *OAI, Inc.*

Part 1 of the Advanced Chemical Risk Assessment and Analysis presentation 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. Part 2 of the Advanced Chemical Risk Assessment and Analysis presentation will include actual hazardous material scenarios where students will assess chemical hazards and risks using the APIE risk assessment model (Analyze, Plan, Implement and Evaluate) and suggest the appropriate tactical response to those hazards in compliance with advanced chemical risk assessment and analysis competency outlined in Chapter 38 of NFPA 470 (2022). The presentation will also include a review of the information required in Chapter 38 of NFPA 470 for a hazardous materials technician assigned to perform the advanced chemical risk assessment and analysis at a hazardous materials scene.

- **PRIMARY TOPIC:** Disaster/Emergency Response and Preparedness
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic

36

The HAZWOPER Challenge: Using Gamification to Teach Difficult Concepts

SPEAKERS: David Casavant and Carlos Olmeda

CONSORTIUM: Sustainable Workplace Alliance

Teaching OSHA's HAZWOPER standard can be an overwhelming task for both students and trainers, especially if the students are new to environmental, health and science topics. Learn, Practice, Review (LPR) is a staple of adult learning framework, and has proven to be beneficial, but what does that actually look like? In this presentation we'll focus on the "review" portion of the LPR model, using Interactive Digital Media (IDM), to help the trainer maintain the student's attention and retain critical learning objectives. IDM is a bridge technology that converts game-based activities to a powerful educational tool that challenges students with problem solving, conceptual reasoning and goal-oriented decisions. The gamification of the learning process exploits student interest in games for learning critical HAZWOPER concepts, and this will be demonstrated using the HAZWOPER Challenge, a trivia-based game.

- **PRIMARY TOPIC:** Innovative Training Methodologies
- **COMPLEXITY:** Open to all

37

Hazards of Gas/Vapor Density

SPEAKERS: Francisco Martinez and Ricardo Lopez

CONSORTIUM: International Brotherhood of Teamsters

In the hazardous waste industry, like many others, working in areas that are contaminated, storage tanks that need to be cleaned or repaired, water clarifiers that need to be maintained, can be dangerous if the worksite contains a product or material (gas or vapor) that is a hazard to the workers. One example of these hazards occurs when there are gases or vapors that are heavier or lighter than air and can cause either an asphyxiant or flammable condition. Therefore, it is important to understand what Gas/Vapor density is and possible effects in the workplace.

- **PRIMARY TOPIC:** Hazardous Waste Worker Training
- **COMPLEXITY:** Open to all
- **THIS SESSION WILL BE REPEATED ON THURSDAY AT 2:30 P.M. (SESSION 87).**

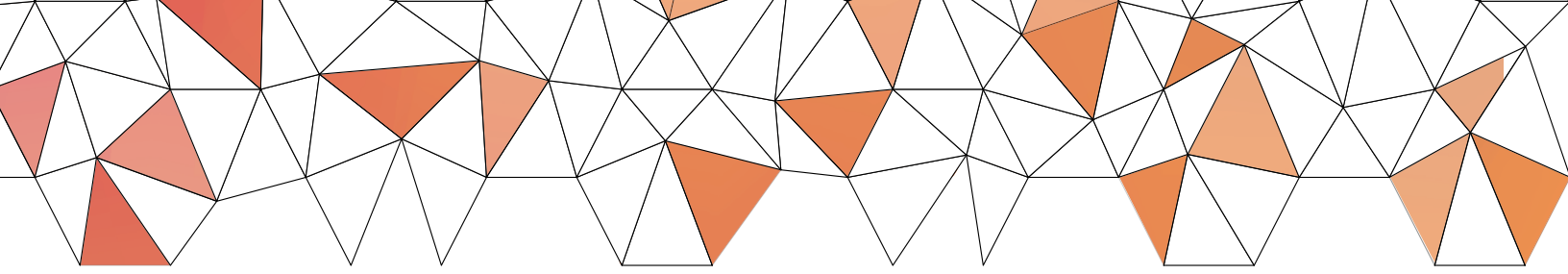
38

Community Response During Disasters

SPEAKER: Donele Wilkins

CONSORTIUM: Midwest Consortium for Hazardous Waste Worker Training

There have been increasing disasters across the nation in recent years from pandemics, extreme weather events, and wildfires. These events have left many communities – especially those with limited resources – devastated. Detroit, MI has experienced multiple flooding events during the midst of the COVID-19 pandemic, highlighting the growing impact of the changing climate. Preparing local communities for safe approaches to disasters is essential. This workshop will highlight the work done by Green Door Initiative in Detroit to establish climate hubs and resiliency centers. Presenters will demonstrate the steps taken to develop the various approaches implemented to support the needs of the community.



- **PRIMARY TOPIC:** Disaster/Emergency Response and Preparedness
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic
- **THIS SESSION WILL BE REPEATED ON THURSDAY AT 8:00 A.M. (SESSION 61).**

39

Roundtable: Disaster Preparedness and Response

- **COMPLEXITY:** Open to all

Addressing Climate Change in Health and Safety Training

SPEAKERS: *Fiona Galley, Arturo Archila, Mayra Rivera, Debora Gonzalez*

CONSORTIUM: *The Steelworkers Charitable and Educational Organization, Tony Mazzocchi Center*

Climate change is a global public health issue that will affect workers in all industries, if it already hasn't. Hazards that workers may face due to climate change include, but are not limited to, heat illness, respiratory illness, physical and mental health effects, insect- and tick-related diseases, and more. During this training, we will discuss how to effectively incorporate climate change and related topics into health and safety trainings while acknowledging that this topic may be controversial to some training participants. We will discuss current environmental issues that workers are facing today, environmental issues that workers are expected to face in the future, as well as what we as trainers can do now to spread awareness. Trainers are encouraged to attend and be ready to share thoughts and ideas on incorporating this topic into current trainings. At the end of the session, participants will leave with a deeper understanding of how climate change will impact worker health and safety, tips for incorporating this topic into health and safety trainings, and a list of credible resources to reference when looking for information on climate change to include in trainings.

Balancing Infection Control in High Level Containment Care with Sustainable Practices

SPEAKERS: *Aurora Le, Shawn Gibbs*

CONSORTIUM: *Prevention, Preparedness, and Response (P2R) Consortium*

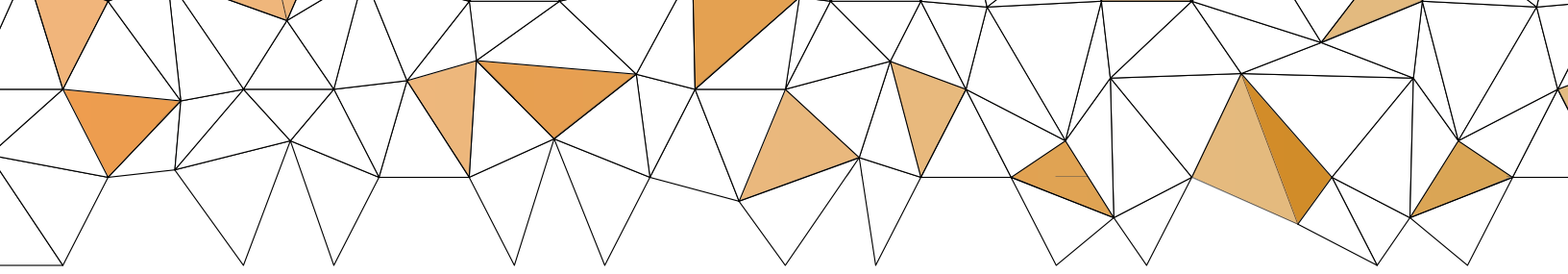
This roundtable discussion and case study canvasses clinical, ethical and public health considerations about integrated infection control and sustainability efforts for high level containment care of infectious diseases. High level containment care protects the public's health during infectious disease outbreaks, including accounting for downstream health costs of byproducts of patient care that leave a system as waste. However, the environmental costs of high-level operations tend to get less attention. Human health promotion and environmental protection are values that sometimes complement each other but sometimes conflict in high level containment. When these values conflict, stakeholders must mediate and balance their implications in terms of individuals' immediate short- and long-term needs for health care, public interest in pathogen control and containment, and environmental impact.

First Responder/Community Pre-Plan Tools and Incident Command Training Demos

SPEAKER: *Henry Rying*

CONSORTIUM: *SBIR - inXsol, LLC*

The session will demonstrate two training/preparedness platforms. "Critical Factors" is a tool for first responders and of value to communities and facilities. The platform allows selection of an incident address and uses the Google maps API and GIS data to perform simulated computerized dispatch with an integrated "what if" toolset. The platform produces a PDF pre-plan report output. The second demonstration is a virtual radio platform with integrated scenario role play evolutions used in Incident Command training/certification and being applied to HazMat incidents. The "PracticeCom" platform has voice recognition and transcript capabilities. In the Q&A, we would like to brainstorm on the applicability or adaptation needed to deliver value outside of the Fire Service in other HazMat use cases.



Opioid Use Reduction Through Alternatives to Pain Management

SPEAKER: *Eric Johnson*

CONSORTIUM: *International Union, United Auto Workers*

UAW and partners have developed two interactive companion courses that address awareness, prevention and solutions to opioid use, misuse, and addiction in the workplace. These courses can be delivered by workers trainers known as Local Union Discussion Leaders (LUDLs) and are meant to be delivered in tandem. These courses are the NIEHS “Opioids and the Workplace” curriculum and “Non-Medication Approaches to Chronic Pain Management”, a course developed by the University of Michigan School of Public Health focusing on evidence-based alternatives to opioids for treating chronic pain, including cognitive-behavioral, manual, and mind-body approaches. Both courses are interactive, incorporating small-group discussions and activities. In this workshop, we will describe the iterative process of developing the pain management course, which included a series of interviews with LUDLs and a focus group with Health and Safety Conference attendees, and how learnings led to changes in the course to make it more worker centered.

Workshop Block 4

Wednesday, May 3 | 2:30 – 3:30 p.m.

40

Something’s in the Air: Incorporating Air Quality Monitoring Tools in Training on Wildfire Smoke

SPEAKER: *Kevin Riley*

CONSORTIUM: *WRUC/ UCLA Labor Occupational Safety & Health Program*

Wildfires have become a year-round threat in many parts of the country, due largely to changing climate patterns. Smoke from wildfires can travel long distances and can have widespread impacts on populations it reaches. Wildfire smoke contaminates air with a variety of pollutants; concerns have focused on particles less than 2.5 microns in diameter (PM2.5) for the significant health risks they pose when inhaled. In the case of outdoor workers, their exposure to wildfire smoke and their ability to respond to the exposures may be dictated by job requirements and employers. Many Western states have set standards for protecting outdoor workers from PM2.5 in wildfire smoke. These standards trigger employer actions when PM2.5 levels in outdoor air exceed limits. WRUC has developed training to educate workers on the hazards of wildfire smoke, to promote the use of tools that identify air quality hazards, and to inform workers of their rights for protection when indicators of outdoor air quality exceed standards. This presentation will provide an overview of training strategies to equip workers with tools to monitor air quality hazards at their worksites. We’ll demonstrate how we incorporate in training widely available tools for monitoring PM2.5 levels, in a hands-on activity.

- **PRIMARY TOPIC:** Training Approaches for Worker Empowerment
- **COMPLEXITY:** Open to all



41

Ergonomics and Opioid Use in Construction

SPEAKERS: *Jessica Bunting and Gary Gustafson*

CONSORTIUM: *CPWR – The Center for Construction Research and Training*

Strains, sprains, and other ergonomic injuries are a leading cause of disabling injuries in the construction industry, and opioids have commonly been prescribed to treat the pain caused by these injuries. As a result, opioid dependence has become a serious issue. This presentation will introduce participants to a CPWR manual material handling training program and other resources that address ergonomics as well as a module on opioid use. Best Built Plans is a program that provides contractors and workers with practical tools and information to plan for safe materials handling. It includes a site planning tool and interactive training and coaching resources. Contractors can use the site planning tool to plan for how materials will be stored, lifted, and moved at every project stage, while the training and coaching resources help increase workers' understanding of the need to plan lifts, and introduce equipment, work practices, lifting techniques, and warm-up exercises that can reduce the risk for injury. The Opioid Awareness Training Program helps workers recognize the risks association with opioids, prevent addiction, and encourages them to use the resources provided to seek help if they are struggling. Participants will be led through some of the exercises used in these programs.

- **PRIMARY TOPIC:** Hazardous Waste Worker Training
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**

42

Examples of Heat Stress

SPEAKERS: *Richard Crowe and Daniel Morrison*

CONSORTIUM: *International Brotherhood of Teamsters*

The presentation will be a demonstration of various environmental conditions simulating heat stress for workers. It will involve several props such as a heat source, a digital thermometer, and various objects to simulate a workers exposure to heat stress. The presentation will simulate heat exposures with hard hats, water bottles and use simple shielding techniques. Discussion will include the effects of prolonged heat stress on workers and the necessity for acclimation.

- **PRIMARY TOPIC:** Training Approaches for Worker Empowerment
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**

43

Hybrid Hazmat Case Study- What Did We Learn?

SPEAKERS: *Lois Harrison, Neil Carlson, and Jennifer Selzler*

CONSORTIUM: *Midwest Consortium for Hazardous Waste Worker Training*

What makes hybrid hazmat training successful? What are the caveats in providing a blended synchronous online and in-person course? When should you consider using this training format? In reviewing a 2022 Mold Remediation blended program, three University of Minnesota training center staff members will offer distinct perspectives on what worked well for their program and how to improve upon this format for future course offerings. Participants will leave this workshop with practical ideas to make online training interactive, options to blend online and in-person content, and tools for trainees to navigate an online course.

- **PRIMARY TOPIC:** Virtual/Hybrid Learning Approaches
- **COMPLEXITY:** Open to all

44

Mindfulness-based Conflict Resolution in the Workplace, Home, and Community

SPEAKER: *Judith Daltuva and Katherine King*

CONSORTIUM: *International Union, United Auto Workers*

Mutually satisfactory conflict resolution can seem elusive, especially evident during recent years with pandemic, economic, and political challenges effecting health and safety in our workplaces, homes, and communities. University of Michigan and the UAW International health and safety worker-trainers are piloting a strategy incorporating mindfulness-based techniques to assist in successful conflict resolution. There is a growing body of research demonstrating that mindfulness training is helpful in positive, collaborative resolution of interpersonal conflicts at work, in the community,

and at home. Mindfulness training provides methods for calming the mind, concentrating, experiencing compassion and empathy, and achieving an awareness of and distance from, thoughts, emotions, body sensations, and habitual impulses that can interfere with making good judgments and with building rapport. In this session, we will share both the science and the application of mindfulness-based conflict resolution. Mindfulness based techniques will be explored experientially with opportunity for reflection and discussion of how it changes one's perspective in a hypothetical conflict resolution situation. Practical mindfulness techniques will be provided to take back to the workplace and home.

- **PRIMARY TOPIC:** Resiliency Training
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic

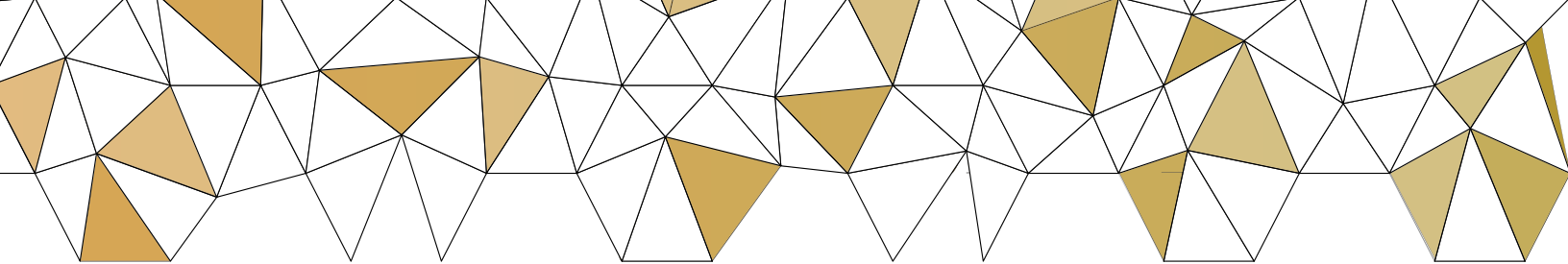
45

The Book Way or The Way? Ensuring Safety of Responders Via Risk-Based Decision Making.

SPEAKERS: *James Burgess and Bryce McCormick*

CONSORTIUM: *International Association of Fire Fighters*

"We are going to learn it this way for the test, even though it isn't the way you will do it at the plant; on a call; in the real world; or wherever you may operate..." If you have not spoken these words, someone has said them to you. But why? Why spend time teaching our emergency responders or hazardous materials workers methods, procedures, or practices they do not use in situations they may never encounter? In this instructional development session, attendees will discuss how to ensure their courses meet the needs of their students, highlighting the necessity of understanding the types of response the students would be expected to respond, what equipment they would be using to respond, and the hazards they may face during such responses. After this baseline understanding is achieved, instructors can tailor best practices around the risks posed to the responders and instructor on THE way to respond and not a book method and real-world method. This is accomplished through asking students in a judgement free atmosphere how they would respond to a specific scenario using their



equipment, procedures, and PPE and then discussing the risks, benefits, and improvements that could be made to ensure the safest response plan.

- **PRIMARY TOPIC:** Instructor Development
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic

46

First-in Engine

SPEAKERS: *Tommy Murdock*

CONSORTIUM: *OAI, Inc.*

The First-in Engine course utilizes the RINSED mnemonic (first proposed by Fridley Fire Department) to assist in the organization of a hazardous materials scene by the first-in engine crew. The objectives of Recognize, Identify, Notify, Scene Security, Evacuation, and Decontamination are reviewed. The class is divided into teams and each team is provided with a hazardous materials spill scenario and the First-in Engine Incident Action Plan Worksheet to complete and present to the class. The class is compliant with 29CFR 1910.120(q)(6)(i) First responder awareness level and the competencies described in 29CFR 1910.120(q)(6)(i)(A-F) of the OSHA Hazardous waste operations and emergency response (HAZWOPER) standard. The class is also compliant with NFPA 472 (Ed. 2018) Chapter 4, Competencies for Awareness Level Personnel. The 2020 DOT ERG is the primary resource used for completing the IAP document.

- **PRIMARY TOPIC:** Disaster/Emergency Response and Preparedness
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic
- **THIS SESSION WILL BE REPEATED ON THURSDAY AT 9:30 A.M. (SESSION 76).**

47

Tailoring Courses to be More Inclusive and Relatable

SPEAKERS: *Krystal Werner and Melissa Moreau*

CONSORTIUM: *Sustainable Workplace Alliance*

It's easy to imagine how a store that only sells one size and one style of clothing wouldn't do well in a diverse community. Some consumers will find the perfect fit, but most will leave feeling disappointed, frustrated, and powerless. But if the same shop adapts and shifts to reflect the fabric of the community it serves, it becomes a valuable and popular asset. The same holds true for a learner-centric course. An inclusive curriculum is one that suits the needs of all learners and has been custom cut to fit. In this workshop, we will discuss the importance of knowing who your learners are and prioritizing their needs so that they can focus on the lessons. We will define what considerations should be made to adapt a one-size-fits all course to one that is more relatable and understandable to the audience. We will explore different skill-building activities such as establishing reflective questions to ask while developing a course. We will also work through various content examples such as text, images, and quiz questions and formats, and improve them for accessibility, inclusivity, and literacy.

- **PRIMARY TOPIC:** Instructor Development
- **COMPLEXITY:** Open to all
- **THIS SESSION WILL BE REPEATED ON THURSDAY AT 8:00 A.M. (SESSION 67).**



48

Emerging 21st Century Disaster Response & Recovery

SPEAKER: *Billy Moye and Kurt Poole*

CONSORTIUM: *International Brotherhood of Teamsters*

The OSHA Disaster-Site-Trainer Course 5600 and companion Course 5602 was developed by OSHA to provide Disaster Site Worker Outreach Training for disaster site workers who provide skilled support services or site clean-up service in response to natural and man-made disasters to local, state, and tribal emergency responders along with Local Emergency Planning Committees and pivotal community organizations. The Rail Workers Hazardous Materials Training Program has developed a 1-Hour and 2-Hour Disaster Awareness level course intended to increase workers knowledge on hazards they may encounter responding to a natural or man-made disaster. Training emphasizes hazard identification, avoidance, control, and prevention.

- **PRIMARY TOPIC:** Disaster/Emergency Response and Preparedness
- **COMPLEXITY:** Open to all
- **THIS SESSION WILL BE REPEATED ON THURSDAY AT 8:00 A.M. (SESSION 62).**

49

Roundtable: Community Engagement

■ **COMPLEXITY:** Open to all

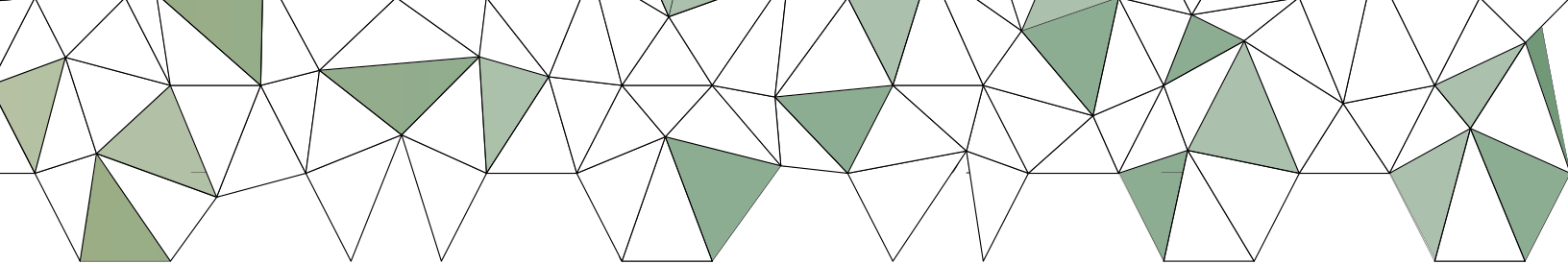
Centering Culture in Community Engagement

SPEAKERS: *Ethane Barthelus, Licelot Gonzalez*

CONSORTIUM: *Atlantic Center for Occupational Health and Safety Training*

Public health information is not always available in the languages that the community speaks and does not always follow the health literacy guidelines. Through our community intervention, we've been able to educate micro-businesses in immigrant communities across Newark. Educational content was tailored to audiences from Latin America, the Caribbean, and African countries. An additional challenge was a general mistrust in health entities due to historical factors, which resulted in a lower-than-average vaccination rate. The following strategies were used to overcome these barriers:

- Onboarded staff who speak the language and understand the culture;
- Partnered with well-established local organizations, faith-based entities, and government agencies, Information shared through in person engagement;
- Tailored messaging disseminated through preferred mediums, developed content appropriate for low-literacy levels;
- Provided on-site interpretation at events; and
- Offered tangible incentives to mobilize the community.
- Our goal for this conference is to share our community-focused strategies with colleagues to help inform their approach when connecting with people of diverse backgrounds.



Building Partnerships with DOE Facilities and Communities

SPEAKERS: *Fiona Galley, Andria Smalley, and Billy Bob Clark*

CONSORTIUM: *The Steelworkers Charitable and Educational Organization, Tony Mazzocchi Center*

This roundtable will discuss the intersection between unions, training partners, DOE Contractors, and local communities and how collectively, communities and worksites can benefit from collaborative approaches. Furthermore, we will also discuss how these parties develop and implement practical site-specific training and opportunities for employment at the site. This will allow grantees and trainers to share experiences within the DOE sector and strategies to make programs successful as they look to expand training efforts across the complex.

COVID Myth Busting: Lessons from Latino Outreach Project in Southeast Michigan

SPEAKERS: *Marisela Lopez Ronquilo, Luz Acosta*

CONSORTIUM: *International Union, United Auto Workers*

This presentation will describe the building blocks needed to deliver effective training to the Spanish speaking immigrant population in Southeast Michigan. It will focus on a recent campaign involving community support for precarious workers, pregnant women, and caregivers in the Latino community. Through coordinated vaccination clinics, food banks and social media outreach we were able to break down barriers and dissolve COVID myths, dispel vaccines misinformation, and reduce barriers to testing. This successful campaign is a culmination of a years-long collaboration between UAW and Catholic Charities of Southeast Michigan to develop a Spanish language Safety training program for new arrivals. These programs have been developed in a culturally appropriate way that responds to community needs. We will touch on Spanish language curricula that have been developed including English as a second language safety lessons (ESL), OSHA rights, hazard recognition, emergency response and preparedness, ergonomics, and Covid mitigation. During the pandemic, outreach methods to promote and deliver virtual training were developed. The session will describe these innovative but practical outreach techniques to underserved populations.

Workshop Block 5

Wednesday, May 3 | 4:00 – 5:00 p.m.

50

Equipment for Consistent Hands-on Training - Local and Distant

SPEAKERS: *David Brazier and Roy Stover*

CONSORTIUM: *Alabama Fire College*

Training organizations that certify trainees must insure consistency both within and between classes. Equipment needed for hands-on activities presents a challenge when the organization trains on-site for a nationwide population. Alabama Fire College (AFC) has developed training props and equipment that can be driven in our 26-foot trailer to our Native American and public safety populations within a reasonable driving distance from Birmingham, AL. However, we also needed to provide equipment to classes at Native American tribes located too far to drive. AFC will discuss the development and construction of training equipment for hazmat courses and how we developed a set that can be shipped as freight to distant courses. We will discuss considerations such as requirements of certification standards, consistency between trailered and shipped courses, use of QR codes for inventory and equipment instructions, and lessons learned. The workshop will include a tour and demonstration of the trailer and shipping equipment (in parking lot). AFC will lead a discussion of our experiences and those of the workshop participants in developing props and equipment.

- **PRIMARY TOPIC:** Other (Hands-on Training Prop Development)
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic



51

A Women's Caucus - A Voice for Women in Workplace Safety and Health

SPEAKERS: Janet Womachka-Souery and Ashlee Fitch

CONSORTIUM: The New England Consortium-Civil Service Employees Association/The Steelworkers Charitable and Educational Organization

Women in the workplace- no matter what profession- have a unique shared experience even as the face of the workplace has changed dramatically over the last 40 years. As much progress has been made towards equality, there is still much more work to be done. Technological advances, workplace design, regulations and research have not always kept pace with the needs of the female workforce. This session will bring women of our industries together to explore the needs and challenges of women's safety and health and training in today's workforce.

- **PRIMARY TOPIC:** Training Approaches for Worker Empowerment
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**

52

Creative Pathways for Underrepresented Workers to High Road Careers

SPEAKERS: Zachary Johnson, Qiairra Broomfield, Zheniah Houston, De'Andrea Ross, and Tara Perkins

CONSORTIUM: WRUC/ UCLA Labor Occupational Safety & Health Program

Goal: Development of interactive training that focuses on learner needs and perspectives. Black workers are chronically unemployed and underemployed in Los Angeles due to discriminatory hiring practices and workplaces referred to as the Black Job Crisis. Traditional workforce development programs do not center on the experience or learning needs of Black workers. For workforce development programs to be more successful at addressing the Black Job Crisis and better servicing Black workers, programs will need to rebuild trust with Black workers and center their needs and experience. The Los Angeles Black Worker Center's Ready 2 Work program is a culturally competent multi-week boot camp specializing in interactive training focused on learner needs and perspectives. The program adopts strategies to mitigate employment barriers that Black workers face due to chronic workplace discrimination, financial instabilities, and other historical and generational injustices. Participants who complete the Ready 2 Work program learn career readiness skills, political education, leadership development, and industry-specific training to enter high-road careers.

- **PRIMARY TOPIC:** Innovative Training Methodologies
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**



53

Fresh Air and Filters: Ventilation Training Techniques to Fight the Pandemic

SPEAKER: *Darius Sivin*

CONSORTIUM: *International Union, United Auto Workers*

In the Fall of 2020, UAW front line workers in New York City used contract language in several collective bargaining agreements to address COVID risks. Workers were trained in the basics of industrial hygiene. We assessed 21 office spaces with a wide range of HVAC systems, and created recommendations for HVAC system upgrades, increased outdoor air intake, improved exhaust air capability, and improved air filtration efficiency. A curriculum using SARS-CoV-2 mitigation case studies and hands on practice with air monitoring equipment will be described in this session. Training techniques used to introduce workers to the methods used to assess and upgrade HVAC systems to mitigate SARS-CoV-2 risks will be demonstrated. By increasing the volume of outdoor air introduced into the return airflow of HVAC systems the concentration level of SARS-CoV-2 in the indoor air is reduced. Participants practice taking CO2 measurements and evaluate the results. They use a real time particle counter to test for particulate and evaluate the results. They then create a strategy to collect and use data to improve filtration and increase fresh air in HVAC systems in their workplaces.

- **PRIMARY TOPIC:** Training Approaches for Worker Empowerment
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic

54

Impact of COVID-19 Crisis on Training: Changes, Challenges, “New Norms”

SPEAKER: *Kim Dunn Chapital*

CONSORTIUM: *Historically Black Colleges and Universities Consortium*

Prior to COVID-19, educational and technical Worker Training Program (WTP) courses were provided largely in traditional face-to-face classrooms settings. The COVID-19 crisis had a significant impact on the delivery of these courses and accompanying services provided. In this atmosphere, environmental training course regulatory requirements (i.e., buddy systems, “hands-on” activities/class participation with student evaluation, and particularized “no allowance” constraints for alternative teaching platforms, etc.) coupled with the need to consider participant learning styles and proven best practices presented many challenges for instructors, program managers and directors, as well as for students and participants. The crisis was a powerful test of change, adaptation, and challenge resolution which ultimately led to implementation of some “new norms” for training programs. This session will (1) explore the shifts from typical traditional face-to-face technical training to virtual and/or a hybrid of the two platforms; (2) highlight the many challenges and potential advantages brought on by the crisis; and (3) provide suggestions for effective crisis management strategies and professional development interventions.

- **PRIMARY TOPIC:** Virtual/Hybrid Learning Approaches
- **COMPLEXITY:** Open to all

55

The Show Must Go On: Maintaining Quality Training in Challenging Learning Environments

SPEAKER: *Ronald Schuetz*

CONSORTIUM: *WRUC/University of Washington*

canceled

From time to time, HAZWOPER instructors may be called upon to provide training in environments with limited access to equipment and resources that would be readily available in fixed training locations. This may include instructors traveling to remote communities or ones providing just-in-time training in post-disaster/environmental cleanup sites. In such scenarios, instructors must find ways to prepare for and adapt to the teaching environment to ensure that trainees get the highest quality hands-on training experience possible. In this presentation, we will address how to be resourceful in an unfamiliar or limited training location, and how to adapt emergency response training to health and safety risks and participants' needs. We will describe tools that may be utilized to conduct job hazard & safety analysis, to assess worker health & safety risks and to identify worker protective measures in the field or learning environment. We will share strategies for assessing the local environment to identify available resources that may be utilized to enhance the training with hands-on experiences. We will also demonstrate how portable resources and props that can fit in a backpack may be utilized to set up hands-on learning exercises during HAZWOPER training.

- **PRIMARY TOPIC:** Hazardous Waste Worker Training
- **COMPLEXITY:** Open to all
- **THIS SESSION WILL BE REPEATED ON THURSDAY AT 9:30 A.M. (SESSION 78).**

56

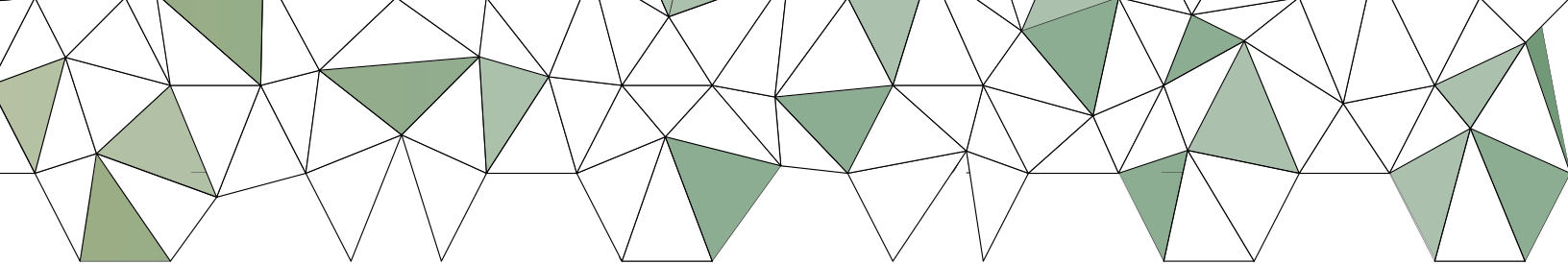
Research-Based Training & Awareness Programs

SPEAKERS: *Jessica Bunting and Gary Gustafson*

CONSORTIUM: *CPWR – The Center for Construction Research and Training*

This presentation will introduce participants to several CPWR training and awareness programs for the construction industry that have been developed through research projects. Two of these programs address acute workplace hazards: head protection and radiofrequency (RF) radiation. Each program provides the necessary training to identify the hazard, understand the risk, and know what steps should be taken to work safely. In addition, CPWR developed an OSHA-approved Foundations for Safety Leadership training program that provides construction foremen and other lead workers with the skills to become effective safety leaders. These interactive training programs are designed to provide trainers with flexible options for conducting the training depending on the time available. A few of these interactive exercises will be demonstrated during the presentation.

- **PRIMARY TOPIC:** Hazardous Waste Worker Training
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic



57

Community Participation in Evaluation: Discussing Practices

SPEAKER: *Joseph Zanoni*

CONSORTIUM: *OAI, Inc.*

Community participation is central to training evaluation. Evaluators engage organizers to conduct inquiry with participants. We create a training evaluation plan to maximize contacts across training programs and participant communities utilizing the evaluation expectations. Challenges to community participation in evaluation include time, space, and selection bias. Selection bias means that the evaluators are picking cases that will show program efforts in the best light instead of showing the range of variation, relationships, and quality. The presentation is an interactive discussion lead by the program evaluator. We will begin with brief introduction and sharing of interests and capabilities. Three case examples will be reviewed using an analysis describing engagements, challenges and potential resolutions. Examples include group evaluation during an asbestos refresher course, youth workforce development, and immigrant worker construction safety focus groups. An analysis framework will be presented to review: a) setting/context, b) advantages for participation, c) challenges to the evaluation and d) recommended practices. Promising practices will be discussed to enhance evaluation management, feedback, and program development.

- **PRIMARY TOPIC:** Program Evaluation
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic

58

Escaping the Monotony of Training Using Game-Based Learning

SPEAKERS: *Kara French and Steve Maiuri*

CONSORTIUM: *Volpentest HAMMER Federal Training Center*

HAMMER staff and worker trainers from the field collaborate to develop fresh, innovative ways to train students on the regulatory objectives each year. This year, to fully engage the students and increase knowledge retention, the team developed an “escape room” for the Respiratory Protection class. An escape room is a game in which a team of players discover clues, solve puzzles, and accomplish tasks in one or more rooms to accomplish a specific goal in a limited amount of time. HAMMER’s respiratory escape room reinforces learning objectives while reproducing challenges the students might face on a day-to-day basis in the field while wearing respiratory protection equipment. Feedback from students has been outstanding, and they appreciate the engaging, hands-on practical training. Can this concept be adapted to cover other topics? Let’s play a game and find out!

- **PRIMARY TOPIC:** Innovative Training Methodologies
- **COMPLEXITY:** Open to all
- **THIS SESSION WILL BE REPEATED ON THURSDAY AT 9:30 A.M. (SESSION 70).**

Workshop Block 6

Thursday, May 4 | 8:00 – 9:00 a.m.

60

Recognizing the Impact of Disabilities in the Workplace

SPEAKER: *Linda Monaco*

CONSORTIUM: *Atlantic Center for Occupational Health and Safety Training*

canceled

An effective way safety and health trainers can impact their students is to give them a different perspective: Our trainees represent a variety of backgrounds. In order for students to engage in best safety practices, they must make a personal connection to the material. This is especially important in the field of safety training, as workplace hazards are a major public health concern. This workshop will demonstrate hands-on methods to help students connect to the material and intent of OSHA safety regulations while also discussing disabilities that can result from workplace injuries: this will allow trainers to impart knowledge to their students that may result in a reduction of workplace injuries. There will be an experience building activity. Participants will be divided into several groups. In these groups, they will be required to perform a mundane task while task while experiencing a simulated physical disability. These activities will be followed by an in-group discussion within each group. The workshop will conclude with a round-table discussion where participants can share their observations on how the simulated disabilities impacted their ability to perform tasks that would otherwise be trivial, as well as how to better serve the needs of students with disabilities.

- **PRIMARY TOPIC:** Training Approaches for Worker Empowerment
- **COMPLEXITY:** Open to all

61

Community Response During Disasters

SPEAKER: *Donele Wilkins*

CONSORTIUM: *Midwest Consortium for Hazardous Waste Worker Training*

There have been increasing disasters across the nation in recent years from pandemics, extreme weather events, and wildfires. These events have left many communities – especially those with limited resources – devastated. Detroit, MI has experienced multiple flooding events during the midst of the COVID-19 pandemic, highlighting the growing impact of the changing climate. Preparing local communities for safe approaches to disasters is essential. This workshop will highlight the work done by Green Door Initiative in Detroit to establish climate hubs and resiliency centers. Presenters will demonstrate the steps taken to develop the various approaches implemented to support the needs of the community.

- **PRIMARY TOPIC:** Disaster/Emergency Response and Preparedness
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**
- **THIS SESSION WILL BE REPEATED ON WEDNESDAY AT 1:15 P.M. (SESSION 38).**

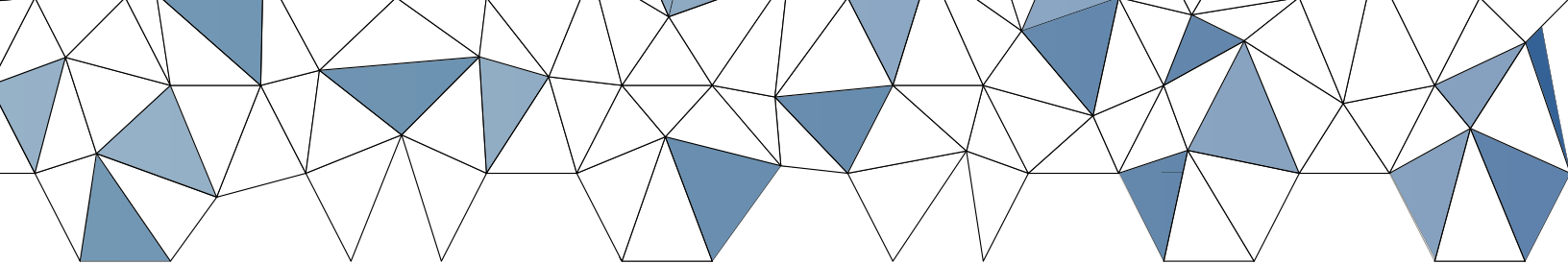
62

Emerging 21st Century Disaster Response & Recovery

SPEAKER: *Billy Moye*

CONSORTIUM: *International Brotherhood of Teamsters*

The OSHA Disaster-Site-Trainer Course 5600 and companion Course 5602 was developed by OSHA to provide Disaster Site Worker Outreach Training for disaster site workers who provide skilled support services or site clean-up service in response



to natural and man-made disasters to local, state, and tribal emergency responders along with Local Emergency Planning Committees and pivotal community organizations. The Rail Workers Hazardous Materials Training Program has developed a 1-Hour and 2-Hour Disaster Awareness level course intended to increase workers knowledge on hazards they may encounter responding to a natural or man-made disaster. Training emphasizes hazard identification, avoidance, control, and prevention.

- **PRIMARY TOPIC:** Disaster/Emergency Response and Preparedness
- **COMPLEXITY:** Open to all
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**
- **THIS SESSION WILL BE REPEATED ON WEDNESDAY AT 2:30 P.M. (SESSION 48).**

63

Methods for Reviewing and Evaluating Course Curriculum Annually

SPEAKERS: *Megan Rockafellow-Baldoni, Marie Dessanti-Huang*

CONSORTIUM: *Atlantic Center for Occupational Health and Safety Training*

Are the learning objectives clearly stated? Do the PDFs contain navigational aids? Are the hand-outs current? Do we need to purchase hands-on materials? It's all in the checklist. Reviewing and updating curriculum is important to ensure that training programs are providing current and accurate material. The NIEHS Minimum Criteria document states that course materials should be reviewed prior to initial use, and at least annually. As the Atlantic COHST evolves to meet trainee needs, we maintain and provide course materials in electronic and print format. The Center program coordinator and evaluator will share their framework and methodology to facilitate the annual review of all course materials and identify areas of improvement. This presentation will provide examples of tools that can be used to manage these annual curriculum updates, which include file sharing through Box, course evaluations in Qualtrics, accessibility checks in PowerPoint, and a master checklist of review criteria. Annual review topics include

objectives and assessments; course materials; accessibility; outreach; and diversity, equity, and inclusion considerations. Participants are invited to bring their own curricula revision tools, checklists, and methods, and to share challenges and successes.

- **PRIMARY TOPIC:** Program Evaluation
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic

64

Effective Systematic Plant Inspections and Audits: Driving Training Through Onsite Needs Assess

SPEAKER: *Michael Fray*

CONSORTIUM: *International Union, United Auto Workers*

Workplace audits and inspections identify gaps in necessary safety training. The purpose of developing effective health and safety audit/inspection elements is to provide a basic framework that is consistent and effective in achieving high standards of health and safety performance that will prevent serious injuries, illnesses, and fatalities. This presentation describes the UAW Health and Safety Department's collaborative, common structure when auditing and inspecting workplaces across a variety of industries. Workforce training opportunities are revealed during facility inspections through hazard recognition and mitigation strategies. This workshop will describe the elements of a systematic and effective joint health and safety audit. Topics to be discussed include government required training, training recordkeeping, effective facility assessments, walk through inspections, and recognizing hazards as opportunities to drive training. An outline of an audit process beginning with pre-audit preparation and scheduling to the actual on-site audit process, summary of findings, and reporting will be presented. Audits result in site specific examples (pictures, videos, and scenarios) used in hazard recognition training.

- **PRIMARY TOPIC:** Facilitation and Technical Skills Enhancement
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic

65

Construction Noise and Hearing Loss Prevention

SPEAKERS: *Jessica Bunting and Gary Gustafson*

CONSORTIUM: *CPWR – The Center for Construction Research and Training*

This presentation will introduce participants to CPWR's Construction Noise and Hearing Loss Prevention Training Program, which helps workers identify a noise hazard, understand the risk for hearing loss, and know what steps should be taken to work safely to prevent hearing loss. There are three modules which are designed to provide trainers options for conducting the training depending on the time available. The 1 Hour Module can be used as a stand-alone training program or to fulfill the OSHA 30-hour training program requirement for training on a health hazard. The 30 Minute Module is designed to fulfill the OSHA 10-hour training program requirement for a half hour training module on a health hazard. Alternatively, it can be used for a portion of the OSHA 30-hour health hazard training requirement. The In-Class & Hands-On Refresher Exercises are designed to reinforce and apply lessons learned about noise hazards and hearing loss prevention. It includes materials that can be incorporated into safety and health training modules (e.g., PPE, power tools, etc.) or as part of a hands-on skills training program. The exercises are short, and each one identifies the materials and related information a trainer will need to carry out the exercise.

- **PRIMARY TOPIC:** Hazardous Waste Worker Training
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic

66

Phones & Tablets in The Classroom? When and How to Use Electronic Resources for Hazmat Training

SPEAKERS: *John Scheurich, Bryce McCormick*

CONSORTIUM: *International Association of Fire Fighters*

ERGs and NIOSH manuals are core texts in the Hazmat training classroom. As instructors, traditionally we struggle to get participants to put away their phones and tablets and focus on the lesson. This hands-on session will flip that thinking on it's head, focusing on learning how and when to use electronic resources for Hazmat training. We will compare several resources such as ERG, NIOSH guide, WISER and others if time allows. Best practices for using these resources will be demonstrated. Participants will have the opportunity to follow along on their own devices as they learn how to navigate these resources. The session structure will be interactive as participants will be using both hard copy and electronic resources as they follow along. Potential technical issues will also be discussed. This session is open to both iPhone and Android users as both formats will be discussed. To get the most out of this session, participants will be encouraged to download the following apps before attending the session: ERG, NIOSH mobile pocket guide and WISER response. All apps should have free versions, no need to use a pay version.

- **PRIMARY TOPIC:** Hazardous Waste Worker Training
- **COMPLEXITY:** Open to all

67

Tailoring Courses To Be More Inclusive and Relatable

SPEAKERS: *Krystal Werner and Melissa Moreau*

CONSORTIUM: *Sustainable Workplace Alliance*

It's easy to imagine how a store that only sells one size and one style of clothing wouldn't do well in a diverse community. Some consumers will find the perfect fit, but most will leave feeling disappointed, frustrated, and powerless. But if the same shop adapts and shifts to reflect the fabric of the community it serves, it becomes a valuable and popular asset. The same holds true for a learner-centric course. An inclusive curriculum is one that suits the needs of all learners and has been custom cut to fit. In this workshop, we will discuss the importance of knowing who your learners are and prioritizing their needs so that they can focus on the lessons. We will define what considerations should be made to adapt a one-size-fits all course to one that is more relatable and understandable to the audience. We will explore different skill-building activities such as establishing reflective questions to ask while developing a course. We will also work through various content examples such as text, images, and quiz questions and formats, and improve them for accessibility, inclusivity, and literacy.

- **PRIMARY TOPIC:** Instructor Development
- **COMPLEXITY:** Open to all
- **THIS SESSION WILL BE REPEATED ON WEDNESDAY AT 2:30 P.M. (SESSION 47).**

68

Personal Protective Equipment Storage, Management, and Maintenance for Training

SPEAKERS: *Rob Schmidt and John Hanson*

CONSORTIUM: *Midwest Consortium for Hazardous Waste Worker Training*

Personal protective equipment (PPE) is vital for helping to ensure hazardous waste worker health and safety. Lakeshore

Technical College (LTC) uses PPE in a variety of training programs. It is important that instructors and staff have the resources and a well-designed plan for managing instructional equipment and supplies for these programs. In this workshop, attendees will learn how LTC stores, manages, and maintains the various types and levels of PPE used in its courses. This includes a newly installed ozone decontamination room. In addition, the presenters will discuss different activities, such as show-and-tell and demonstrations they use to deliver PPE training to program participants.

- **PRIMARY TOPIC:** Hazardous Waste Worker Training
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic
- **THIS SESSION WILL BE REPEATED ON WEDNESDAY AT 9:45 A.M. (SESSION 14).**



69

Roundtable: Technology

■ **COMPLEXITY:** Open to all

Work Smarter Not Harder with Phone Apps

SPEAKER: *Neil Hawley*

CONSORTIUM: *The New England Consortium-Civil Service Employees Association*

Smart phones, never leave home without it. So then why not use it to save time doing research? Participants will be able to load phone apps to their phones and practice following the demonstration. Several apps will be shown and discussed. Showing how fast the apps can get valuable information. Books can be slow and heavy to use in the field setting. Some phone apps even work if you are in an area with no phone service. Books are only updated yearly or maybe even every several years, Phone apps can be updated anytime there is a change, so you are most likely to be getting the most up to date information using your phone. Some phone apps that will be discussed are WISER, ERG2020, OSHA Heat tool, NIOSH Pocket Guide, Ladder Safety, NIOSH Sound Level Meter, and Confined Space.

Tik-Tok Training Challenge

SPEAKER: *Ashlee Fitch*

CONSORTIUM: *The Steelworkers Charitable and Educational Organization, Tony Mazzocchi Center*

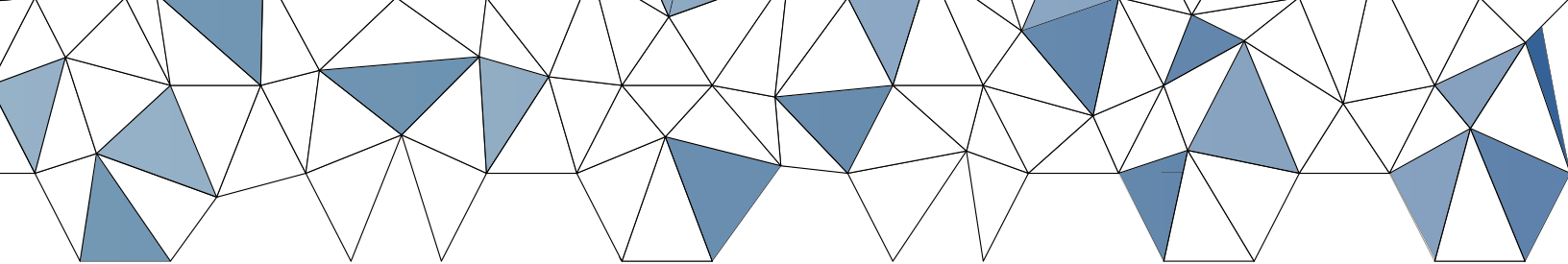
Tik-Tok is more than just challenges and dancing videos – it allows millions of people to watch informational and instructional videos on various topics. This workshop explores the uses of the platform and multiple applications used to edit and enhance videos. During the session, participants will learn about using the platform and have the ability to create their HAZWOPER-focused Tik-Tok and learn how to share the video on other social media platforms.

Bread & Butter Air Monitoring

SPEAKER: *Chris Hanson*

CONSORTIUM: *Midwest Consortium for Hazardous Waste Worker Training*

Bread & Butter Air Monitoring will seek to counter myths and misconceptions about basic air monitoring. Feedback from past training classes shows that most participants have little to no understanding of air monitoring operations or basic strategies and tactics to employ. Since this topic is one of the most important hazmat responders and site workers to be proficient with, and one of the least understood in working around hazardous materials, this session will ensure the audience is proficient with these concepts when training others. In addition to basic multi-gas monitoring competencies, the advantages of adding a photoionization detector (PID) to an instructor's toolbox will be addressed. Features of a multi-gas meter and PID will be demonstrated. During the Q & A period, the presenter will solicit ideas from the session participants in addition to answering their questions.



The Future of Classroom Learning

SPEAKERS: *Ted Giltz, Evan Dunne*

CONSORTIUM: *NIEHS DOE*

A facilitated roundtable discussion will be provided that shares insights and evolving practices for the delivery of effective learning for today's employees. The roundtable will share information about today's world of learning activities such as the adaptation of new technologies, the expansion of learning experience platforms (LXP), the learning preferences of today's adult learners, and define today's hybrid learning needs. When are hybrid or micro-learning sessions appropriate? We will discuss the differences between regulatory training vs performance-based training and share experiences with changes in both areas. Presenters will share how they have made changes in their training and be available to respond to questions from participants. Instructors must become familiar with and comfortable using new techniques and tools. Management must find ways to track different forms of training with the endpoint of demonstration of the defined knowledge, skills, and abilities for a task. This learning may take the form of microlearning, videos, classroom and computer learning, or other forms of training delivery. Come and share your experiences with your peers and obtain information that may assist you in improving the delivery of training in today's demanding world.

Workshop Block 7

Thursday, May 4 | 9:30 – 10:30 a.m.

70

Escaping the Monotony of Training Using Game-Based Learning

SPEAKERS: *Kara French and Steve Maiuri*

CONSORTIUM: *Volpentest HAMMER Federal Training Center*

HAMMER staff and worker trainers from the field collaborate to develop fresh, innovative ways to train students on the regulatory objectives each year. This year, to fully engage the students and increase knowledge retention, the team developed an "escape room" for the Respiratory Protection class. An escape room is a game in which a team of players discover clues, solve puzzles, and accomplish tasks in one or more rooms to accomplish a specific goal in a limited amount of time. HAMMER's respiratory escape room reinforces learning objectives while reproducing challenges the students might face on a day-to-day basis in the field while wearing respiratory protection equipment. Feedback from students has been outstanding, and they appreciate the engaging, hands-on practical training. Can this concept be adapted to cover other topics? Let's play a game and find out!

- **PRIMARY TOPIC:** Innovative Training Methodologies
- **COMPLEXITY:** Open to all
- **THIS SESSION WILL BE REPEATED ON WEDNESDAY AT 4:00 P.M. (SESSION 58).**

71

Empowering Voices via Language Justice! Going Beyond Interpretation to Create Safer Workplaces

SPEAKERS: *Luis Vazquez and Jessica Martinez*

CONSORTIUM: *International Chemical Workers Union Council
Center for Worker Health and Safety Education*

Our Language Justice model aims to create a multilingual space within our organizations and programs that builds equality among languages, as well as resist the dominance of one language in the room so that workers' voices and lived experiences can be heard as part of a diversity of communities and cultures. Efforts by ICWUC and National COSH to increase capacities that offer participatory and engaging training programs in Spanish within a language justice framework have been largely successful. This is due to effective strategies and tools that go beyond interpretation and translation but include best practices that intersect with a popular education framework such as a "Peer Trainer" model. Latinx worker fatality rates are higher than the general workforce, indicating a continued need for information, education, training, and enforcement of workers' rights. Following recent disasters, it became apparent that Language Justice efforts must be accelerated in the workplace and community. National COSH and ICWUC address Language Justice by collaborating in development of bilingual curricula (using more visual elements), topic-specific Focus Groups, simultaneous translation during workshops, and Train-the-Trainer sessions in a variety of venues, including online.

- **PRIMARY TOPIC:** Language Justice and Cultural Sensitivity
- **COMPLEXITY:** Open to all
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**

72

Climate Change Science, Climate Crisis Solutions, and Worker Education

SPEAKER: *Thomas Estabrook*

CONSORTIUM: *The New England Consortium-Civil Service
Employees Association*

How do we bring climate science into our worker training discussions? Climate scientists have been communicating the deepening climate crisis for decades, but the more recent message from a growing chorus of climate scientists of necessary, fundamental, radical transformation of our energy systems and political economy is being watered down, even suppressed by governments and fossil fuel companies, as was the case in the 2022 6th Assessment Report from the UN Intergovernmental Panel on Climate Change. What is our role as worker health educators in engaging each other, our trainees, and the community in critical conversations about climate science and primary prevention ("do no harm") as an operating principle in building a climate safe world? This workshop will: 1) briefly present current climate science and the call by many scientists for systemic transformation; and 2) provide a popular education exercise for participants to address this problem and what worker health & safety educators can do to engage trainees, fellow educators, and the broader community in exploring the climate crisis and what we as educators, our various communities, and government can do to help bring about fundamental change through climate justice, Green New Deals, Just Transition, and other strategies.

- **PRIMARY TOPIC:** Community Engagement
- **COMPLEXITY:** Open to all
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**



73

Novel Hands-on Approaches to HAZWOPER Training

SPEAKER: *Gregory Sauer*

CONSORTIUM: *Midwest Consortium for Hazardous Waste Worker Training*

Short games and activities can develop knowledge and reinforce principles during hazmat training. Three novel activities will be introduced by the presenter and then tried out by participants. The first activity improves identification of GHS pictograms. The presenter will supply a sheet with the pictograms. In small groups, participants will select pictogram(s) that should be used to identify each hazard in a list. The second activity is the 'Pit Stop Challenge' aimed at practicing job hazard analysis. The presenter will hand out a diagram of a gas station that includes a list of tasks that must be completed at the gas station. Participants will divide into small groups to discuss the order in which tasks should be completed, the hazards, and how the hazards should be addressed. The third activity is a custom-made card game for asbestos. The game includes cards for asbestos hazards, engineering controls, administrative controls, work practice controls, and PPE, with the purpose of safely removing and abating asbestos. The presenter will demonstrate the game and discuss with attendees how it could be adapted for HAZWOPER and OSHA classes. An important feature of all three activities is that they create discussion and engagement among trainees.

- **PRIMARY TOPIC:** Participatory Methods
- **COMPLEXITY:** Open to all

74

Risk Assessment & Management During Hazmat Emergencies

SPEAKERS: *Eric Tu and Rania Sabty*

CONSORTIUM: *WRUC/ UCLA Labor Occupational Safety & Health Program*

This workshop will explore innovative learning approaches that can be used in virtual/hybrid trainings to enhance interaction between trainers and trainees and reinforce the importance of preparing for emergencies and managing workers' risk to hazards during emergencies. For UCLA LOSH's virtual HAZWOPER refresher training, we use a participatory exercise as a culminating activity to tie together concepts taught throughout the course and allow trainees to apply what they have learned to their occupational setting. Trainers assign trainees to breakout groups based on similar job duties and field interests. Groups are asked to think of a hazmat incident that occurred or nearly occurred in their workplace in the last several years, or one that could occur in their workplace. Trainees work collaboratively and creatively to draw sketches of their incidents, answer questions outlining their thought processes, and present their work to the rest of the class. This workshop will give participants an opportunity to engage in a version of this activity and discuss ways to adapt the activity to different training audiences.

- **PRIMARY TOPIC:** Virtual/Hybrid Learning Approaches
- **COMPLEXITY:** Open to all

75

Live (and Safe!) Demonstrations of Chemical Properties

SPEAKERS: *Ted Krayner and Roy Stover*

CONSORTIUM: *Alabama Fire College*

The most effective training about hazardous chemicals not only warns workers about how chemicals can harm, but also shows them how they can anticipate the hazardous behavior and protect themselves. This presentation shows how AFC presents chemical hazard information and then makes it stick with visual and hands-on demonstrations. Trainees learn how to research basic chemical and physical properties and use them to anticipate chemical behavior and then see it happen live. The demonstrations reinforce that workers can research and predict chemical actions and thus protect themselves.

- **PRIMARY TOPIC:** Innovative Training Methodologies
- **COMPLEXITY:** Open to all

76

First-in Engine

SPEAKERS: *Tommy Murdock*

CONSORTIUM: *OAI, Inc.*

The First-in Engine course utilizes the RINSED mnemonic (first proposed by Fridley Fire Department) to assist in the organization of a hazardous materials scene by the first-in engine crew. The objectives of Recognize, Identify, Notify, Scene Security, Evacuation, and Decontamination are reviewed. The class is divided into teams and each team is provided with a hazardous materials spill scenario and the First-in Engine Incident Action Plan Worksheet to complete and present to the class. The class is compliant with 29CFR 1910.120(q)(6)(i) First responder awareness level and the competencies described in 29CFR 1910.120(q)(6)(i)(A-F) of the OSHA Hazardous waste operations and emergency response (HAZWOPER) standard. The class is also compliant with NFPA 472 (Ed. 2018)

Chapter 4, Competencies for Awareness Level Personnel. The 2020 DOT ERG is the primary resource used for completing the IAP document.

- **PRIMARY TOPIC:** Disaster/Emergency Response and Preparedness
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic
- **THIS SESSION WILL BE REPEATED ON WEDNESDAY AT 2:30 P.M. (SESSION 46).**

77

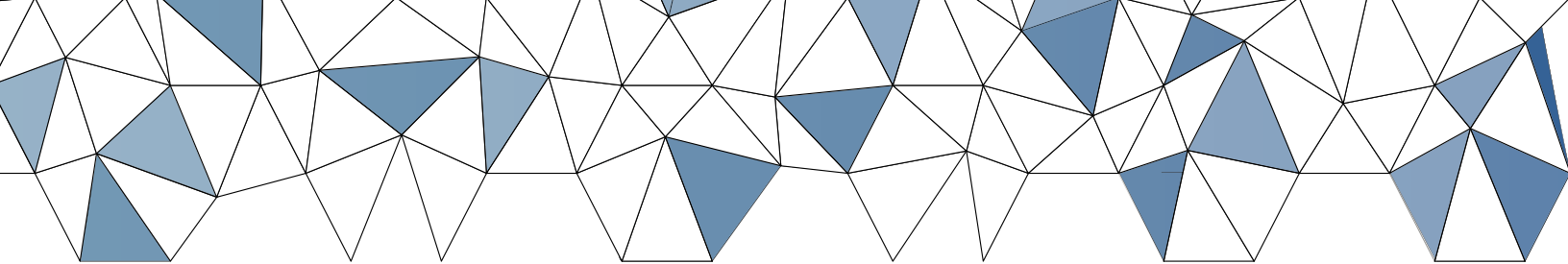
Incorporating Wide Area Exposure Simulation in Field Exercises

SPEAKERS: *Cesar Bandera, Peter Schmitt, and Mitchel Rosen*

CONSORTIUM: *SBIR - CellPodium, LLC and Atlantic Center for Occupational Health and Safety Training*

The exposure readings from handheld chemical and radiological sensors drive the real-time actions of HAZMAT workers, and knowing how to make and interpret such readings are life-saving skills in man-made and environmental incidents. Field exercises, such as those conducted at the end of the 40-hour HAZWOPER course, build responders' skills with PPE, tools, and mock hazards. However, traditional sensors do not simulate exposure to mock hazards or build the related skills. At this workshop, participants will learn how to (1) add wide area mock hazards to satellite imagery of their training sites, such as a large spill or contaminated floodwaters; (2) use any mobile device with GPS and a web browser as a handheld sensor that displays realistic simulated exposure levels from these hazards in real time; and (3) augment their current field exercises with this simulation technology. Participants will be able to use this training tool in their field exercises for free for one year, including the mock hazards and exposure sensor simulator. The workshop will cover technology trends, including the strengths and weaknesses of GPS-based exposure simulation.

- **PRIMARY TOPIC:** Innovative Training Methodologies
- **COMPLEXITY:** Open to all



78

The Show Must Go On: Maintaining Quality Training in Challenging Learning Environments

SPEAKER: *Ronald Schuetz*

CONSORTIUM: *WRUC/ University of Washington*

canceled

From time to time, HAZWOPER instructors may be called upon to provide training in environments with limited access to equipment and resources that would be readily available in fixed training locations. This may include instructors traveling to remote communities or ones providing just-in-time training in post-disaster/environmental cleanup sites. In such scenarios, instructors must find ways to prepare for and adapt to the teaching environment to ensure that trainees get the highest quality hands-on training experience possible. In this presentation, we will address how to be resourceful in an unfamiliar or limited training location, and how to adapt emergency response training to health and safety risks and participants' needs. We will describe tools that may be utilized to conduct job hazard & safety analysis, to assess worker health & safety risks and to identify worker protective measures in the field or learning environment. We will share strategies for assessing the local environment to identify available resources that may be utilized to enhance the training with hands-on experiences. We will also demonstrate how portable resources and props that can fit in a backpack may be utilized to set up hands-on learning exercises during HAZWOPER training.

- **PRIMARY TOPIC:** Hazardous Waste Worker Training
- **COMPLEXITY:** Open to all
- **THIS SESSION WILL BE REPEATED ON WEDNESDAY AT 4:00 P.M. (SESSION 55).**

79

Understanding and Complying with OSHA's Rule Governing Respirable Silica

SPEAKER: *Darian Williams*

CONSORTIUM: *Historically Black Colleges and Universities Consortium*

About 2.3 million people in the U.S. are exposed to silica while working. Products like sand, stone, concrete, and mortar all contain silica. Workers are exposed to silica when cutting, sawing, grinding, drilling, and crushing items like stone, rock, and concrete. Additional exposure can occur in other processes like foundry work and hydraulic fracturing. Workers who inhale these very small crystalline silica particles are at increased risk of developing serious silica-related diseases such as: silicosis, lung cancer, chronic obstructive pulmonary disease, and kidney disease. To protect workers from exposure, OSHA has issued two respirable crystalline silica standards to lessen the exposure in all three major industries: construction, general, and maritime. OSHA recommends various controls. They are highlighted in General Industry and Maritime Standard 1910.1053, Respirable Crystalline Silica, Appendix A, Methods of Sample Analysis, Appendix B, Medical Surveillance Guidelines and OSHA Construction Standards 1926 Subpart Z, Toxic and Hazardous Substances, 1926.1153, Respirable Crystalline Silica, Appendix A, Methods of Sample Analysis, Appendix B.

- **PRIMARY TOPIC:** Training Approaches for Worker Empowerment
- **COMPLEXITY:** Open to all
- **THIS SESSION WILL BE REPEATED ON WEDNESDAY AT 11:00 A.M. (SESSION 22).**



Tour

Thursday, May 4 | 10:45 a.m. – 1:00 p.m.

RecycleForce, a subgrantee to OAI, Inc., is providing a tour of their recycling facility. This tour will take place on Thursday, May 4th from 10:30 a.m. to 1:15 p.m. (including travel time). The tour has been scheduled so there are no competing sessions and complimentary transportation will be provided to and from the facility. There is no additional cost to participate in the tour. All Trainers' Exchange participants are encouraged to attend.

Workshop Block 8

Thursday, May 4 | 2:30 – 3:30 p.m.

80

DOE TEPP Training Utilizing MERRTT, Adapting to Your Audience

SPEAKERS: *Gary Quick and Narciso Acosta*

CONSORTIUM: *International Brotherhood of Teamsters*

The Modular Emergency Radiological Response Transportation Training Program (MERRTT) was developed by the DOE to provide real experience and on-time training to local, state, and tribal emergency responders to a radiological incident. The Rail Workers Hazardous Materials Training Program got involved as transportation workers that would be moving high level nuclear waste and spent nuclear fuel to permanent storage locations. MERRTT is a highly adaptable program that is flexible with time, space and audience requirements and needs. MERRTT can be presented in a 16, 12, or 8 hour format and can be condensed to as little as two hours, if needed. This program will give an overview of MERRTT, its 16 modules, hands on instruction and accident scenario evaluation and how it can be modified to meet the needs of any audience and still fulfill the requirements of DOE.

- **PRIMARY TOPIC:** Participatory Methods
- **COMPLEXITY:** Open to all



81

Introduction to Resiliency Training

SPEAKERS: *Patricia Moore and Myra Gracy*

CONSORTIUM: *International Chemical Workers Union Council
Center for Worker Health and Safety Education*

Resiliency is the capacity to recover or successfully adapt to challenging life experiences. In our post-pandemic world, there has never been a greater need for mental health and stress reduction. Our answer to address that need is learning and teaching resiliency methods. This workshop is an “Introduction to Resiliency Training”. The goal is to raise awareness in an interactive skills-based training session that teaches you how to identify, understand and respond to signs of stress and recognize behavioral concerns in your environment. The participants will use PowerPoint presentations, handouts, and small group discussions to learn methodologies to detect signs of stress and how to relieve stress through resiliency. The training will also conduct a brief review of the NIH and SAMHSA training presentation and instructor manual. Our main goal is to identify the impact of stress and mental health challenges on the well-being of peers in the workplace. Participants of this workshop will be encouraged to adapt and modify how they deliver the course to meet the needs of their specific programs, audience, or workplace.

- **PRIMARY TOPIC:** Resiliency Training
- **COMPLEXITY:** Open to all
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**

82

Creating an Inclusive Learning Environment

SPEAKERS: *Ashlee Fitch, Rodrigo Toscano, Steve Higdon,
and Larry Hodge*

CONSORTIUM: *The Steelworkers Charitable and
Educational Organization*

Classrooms are diverse. Whether it is age, industry, sociological background or political viewpoints - everyone brings a unique perspective to the class. It is our responsibility as facilitators and trainers to create an safe learning environment that welcomes different perspectives without disrespecting each other. This workshop will go over several activities that can be used in a classroom to create an inclusive and respectful learning environment.

- **PRIMARY TOPIC:** Facilitation and Technical Skills Enhancement
- **COMPLEXITY:** Open to all
- **ENGLISH/SPANISH INTERPRETATION WILL BE AVAILABLE FOR THIS SESSION.**

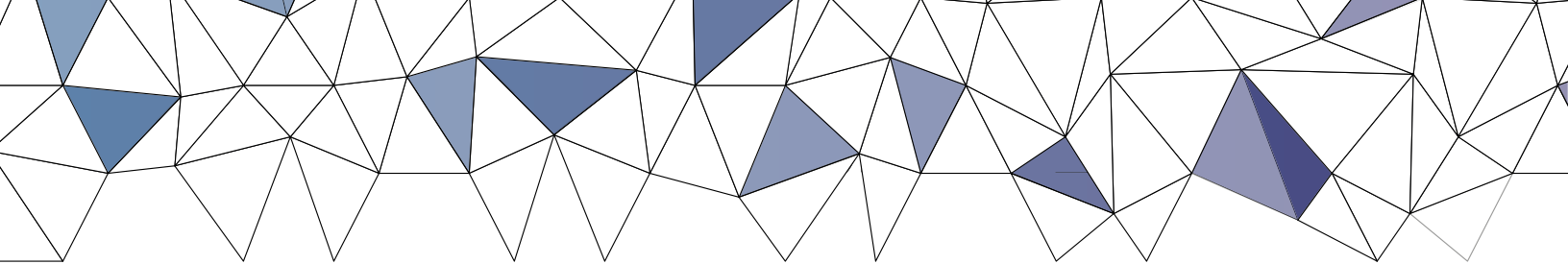
83

What is My Meter Telling Me?

SPEAKERS: *James Burgess and Tyler Hoke*

CONSORTIUM: *International Association of Fire Fighters*

This workshop will dive deep into air monitoring theory. Often times, responders rely solely on the audible and visual alarms to guide their decision making on an emergency scene without actually understanding what their air monitor is trying to tell them. Air monitors contain sensors that measure the presence of the chemical that the sensor is designed to detect. Upon detection of a chemical, the meter will display a numerical value to quantify the presence of the chemical. By understanding the value and how that value correlates on the scale of dangerous, not, dangerous, and life-threatening exposure limits; responders can decide to take offensive action to identify and mitigate the source or defensive action



to evacuate the area and wait it out. As hazardous materials responders become more confident with using their air monitors, they will be able to make data driven decisions that will impact the successful outcome of the incident.

- **PRIMARY TOPIC:** Disaster/Emergency Response and Preparedness
- **COMPLEXITY:** Open to all

84

Independent Assessment of Risks & Clinical Lab Instrument Design that Impact HHCD Response

SPEAKERS: *Aurora Le and Shawn Gibbs*

CONSORTIUM: *Prevention, Preparedness, and Response (P2R) Consortium*

The presentation will discuss reducing risks of clinical laboratory acquired infections, including from highly hazardous communicable diseases (HHCD). It will highlight that we cannot completely remove risks, but we can actively and continually work to reduce it. It will discuss the importance of establishing and cultivating a culture of safety amongst stakeholders within the clinical laboratory space. The need to develop standard operating procedures that incorporate risk reduction associated with equipment and procedures and the need for continual improvement that involves both those working in the laboratory as well as external reviewers, including industrial hygienists, will also be discussed.

- **PRIMARY TOPIC:** Life Skills and Workforce Development/ Career Training
- **COMPLEXITY:** Intermediate - Some knowledge or experience on the topic

85

Fluidity and Adaptability, Overcoming Barriers to Training

SPEAKER: *Lisa Orloff*

CONSORTIUM: *Atlantic Center for Occupational Health and Safety Training*

Lisa Orloff will share World Cares Center's training methods, tools and techniques used to engage audiences from a wide demographic and varying levels of online experience. The presentation will share the journey from traditional training methods to developing hybrid models, games, and experiential learning. Survey results will be shared that identify preferred training methods by learners that can be applied in the development of customized delivery to meet the learning needs of our constituents.

- **PRIMARY TOPIC:** Facilitation and Technical Skills Enhancement
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic

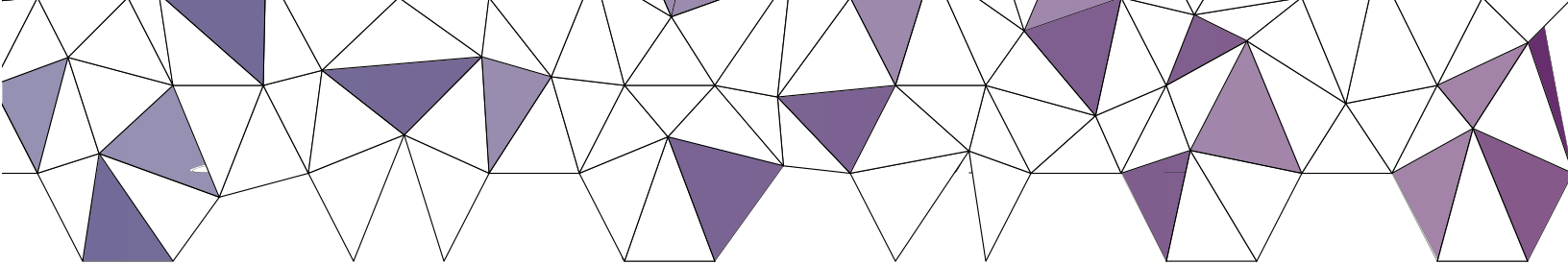
86

A Hybrid Model for Mold Remediation Training

SPEAKER: *Neil Carlson*

CONSORTIUM: *Midwest Consortium for Hazardous Waste Worker Training*

Midwest Consortium training on mold remediation has typically been a 2-day program delivered in person. We developed a hybrid class that taught mold ecology, health effects, and investigation synchronously online on the first day. In-person training on the second day covered sampling, identification, and setting up mold remediation. This training model allowed a large group from Detroit, MI to get initial training and a smaller group to receive in-person training. The in-person participants were then able to share information and skills with individuals who attended only the online segment. The in-person portion of the course allows trainees to sample for mold using tease



tape and Air-o-cell cassettes. Previously cultured surface and air samples are available for participants to review. They work with microscopes and a biological safety cabinet to view the samples and work on the initial practice of identification. Moisture meters and infrared cameras are also available for use. Attendees construct an abatement enclosure in an office setting during the last part of the course. They can also don the PPE needed for mold abatement. Embracing hybrid instruction can reduce cost of attendance and allow trainees to efficiently use their time.

- **PRIMARY TOPIC:** Disaster/Emergency Response and Preparedness
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic

87

Hazards of Gas/Vapor Density

SPEAKERS: *Francisco Martinez and Ricardo Lopez*

CONSORTIUM: *International Brotherhood of Teamsters*

In the hazardous waste industry, like many others, working in areas that are contaminated, storage tanks that need to be cleaned or repaired, water clarifiers that need to be maintained, can be dangerous if the worksite contains a product or material (gas or vapor) that is a hazard to the workers. One example of these hazards occurs when there are gases or vapors that are heavier or lighter than air and can cause either an asphyxiant or flammable condition. Therefore, it is important to understand what gas/vapor density is and possible effects in the workplace.

- **PRIMARY TOPIC:** Hazardous Waste Worker Training
- **COMPLEXITY:** Open to all
- **THIS SESSION WILL BE REPEATED ON WEDNESDAY AT 1:15 P.M. (SESSION 37).**

88

Elevating HAZWOPER Training with Augmented Reality

SPEAKERS: *Justin Schuller, Peter Schmitt, and Cesar Bandera*

CONSORTIUM: *Midwest Consortium for Hazardous Waste Worker Training and SBIR - CellPodium, LLC*

In recent years, augmented reality has been used to do everything from visualizing a prospective furniture purchase in your home to catching virtual pocket monsters appearing in your neighborhood. The general principle of the technique is simple: use technology to see things that are not really there. CellPodium applied these principles to create a tool to enhance chemical emergency response training. Instructors can create large-scale chemical release scenarios on a digital map or small-scale chemical release scenarios using Bluetooth beacons. In either case, participants need nothing more than a single downloadable app to transform their internet/Bluetooth-enabled smartphone into a monitor displaying readings for the scenario the instructor created. The Environmental Management Institute at Ivy Tech Community College has been implementing these tools in their HAZWOPER training courses to great effect, allowing students to learn how to respond to chemical spills from acetone to xylene safely without ever spilling a drop of the real stuff. Attendees will learn how this technology can be applied during training and participate in a demonstration scenario using their own devices.

- **PRIMARY TOPIC:** Innovative Training Methodologies
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic
- **THIS SESSION WILL BE REPEATED ON WEDNESDAY AT 1:15 P.M. (SESSION 30).**

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A Trainer's Approach to Increase Awareness of Engineered Nanomaterials in Construction

SPEAKER: *Gavin West*

CONSORTIUM: *CPWR – The Center for Construction Research and Training*

During the past two decades, nanotechnology has enabled considerable improvements to materials used in different industry sectors including electronics, construction, packaging, food, energy, healthcare, automotive, and defense. Materials can be nano-engineered to be stronger, lighter, more durable, more reactive, better electrical conductors, and more. The flipside is that engineered nanomaterials can also pose hazards to workers exposed to them on the job. This session will explore how CPWR uses a train-the-trainer approach, informed by ongoing research, and tailored to specific trades, to make construction workers more aware of the risks posed by engineered nanomaterials and how to prevent exposures. Participants will learn about the technical information, core concepts, and group exercises used in the curriculum, and how to access resources to use in their own courses. A facilitated group discussion and brainstorming activity will focus on challenges and effective approaches when training workers about emerging hazards, like engineered nanomaterials, which may be unfamiliar to the public and not yet fully understood by researchers. Participants will be encouraged to share and reflect on their own experiences.

- **PRIMARY TOPIC:** Curriculum Development
- **COMPLEXITY:** Beginner - Little to no knowledge or experience on the topic
- **THIS SESSION WILL BE REPEATED ON WEDNESDAY AT 11:00 A.M. (SESSION 26).**

SBIR E-Learning for HAZMAT Program

The Small Business Programs (SBIR/STTR) E-Learning for HAZMAT Program focuses on the development of e-learning products that support:

- Health and safety training of hazardous materials (HAZMAT) workers, waste treatment personnel, and skilled support personnel associated with an emergency/disaster.
- Emergency responders in biosafety response, including infectious disease training and cleanup, and emergency responders in disasters and resiliency training.
- Tools to assist in research into the acute and long-term health effects of environmental disasters.
- This initiative builds on the NIEHS Worker Training Program's experience in worker safety and health training by stimulating creative SBIR proposals to create such products.

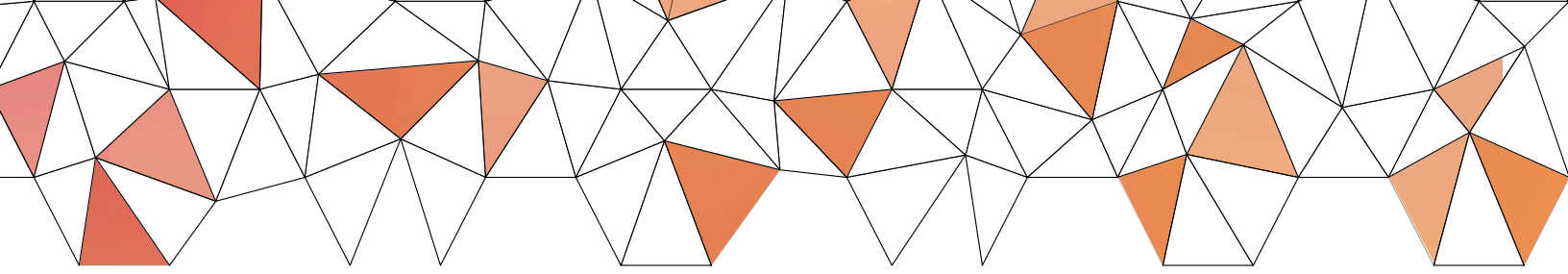
The SBIR E-Learning for HAZMAT Program supports the development of e-learning products that assist both students and instructors and use a range of delivery platforms, including:

- Computer and web-based applications
- Mobile device applications
- Virtual Reality applications

E-learning products provide solutions to specific training problems and for specific training audiences. They can be used in traditional classroom settings, and they often help prepare for critical hands-on training. These products also can help to equip workers rapidly and effectively with the skills and knowledge they need to protect themselves and their communities from hazards.

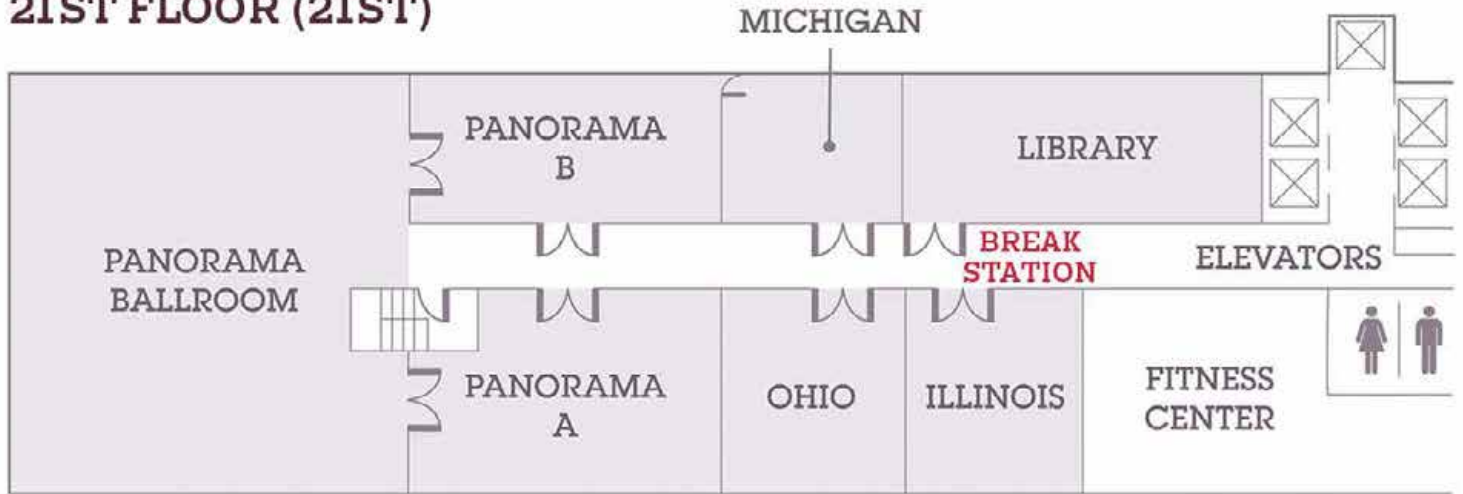
Visit the SBIR informational tables near registration and check out their information on the conference mobile app.

https://www.niehs.nih.gov/careers/hazmat/training_program_areas/att/index.cfm

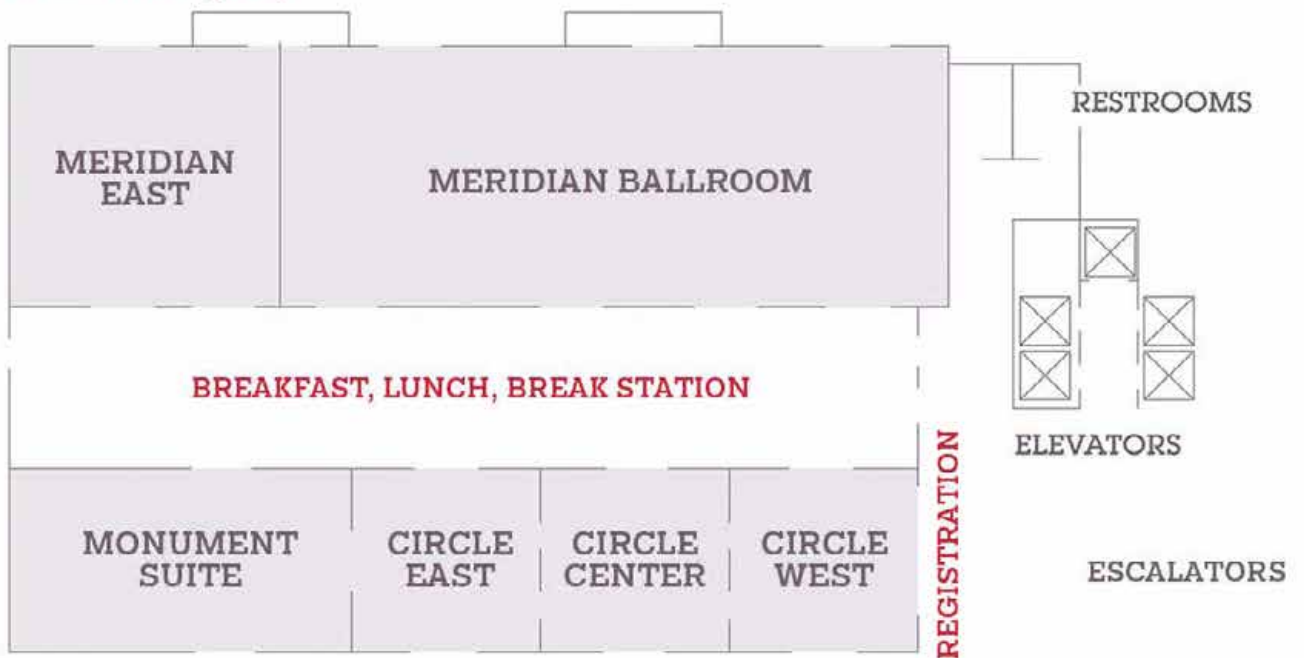


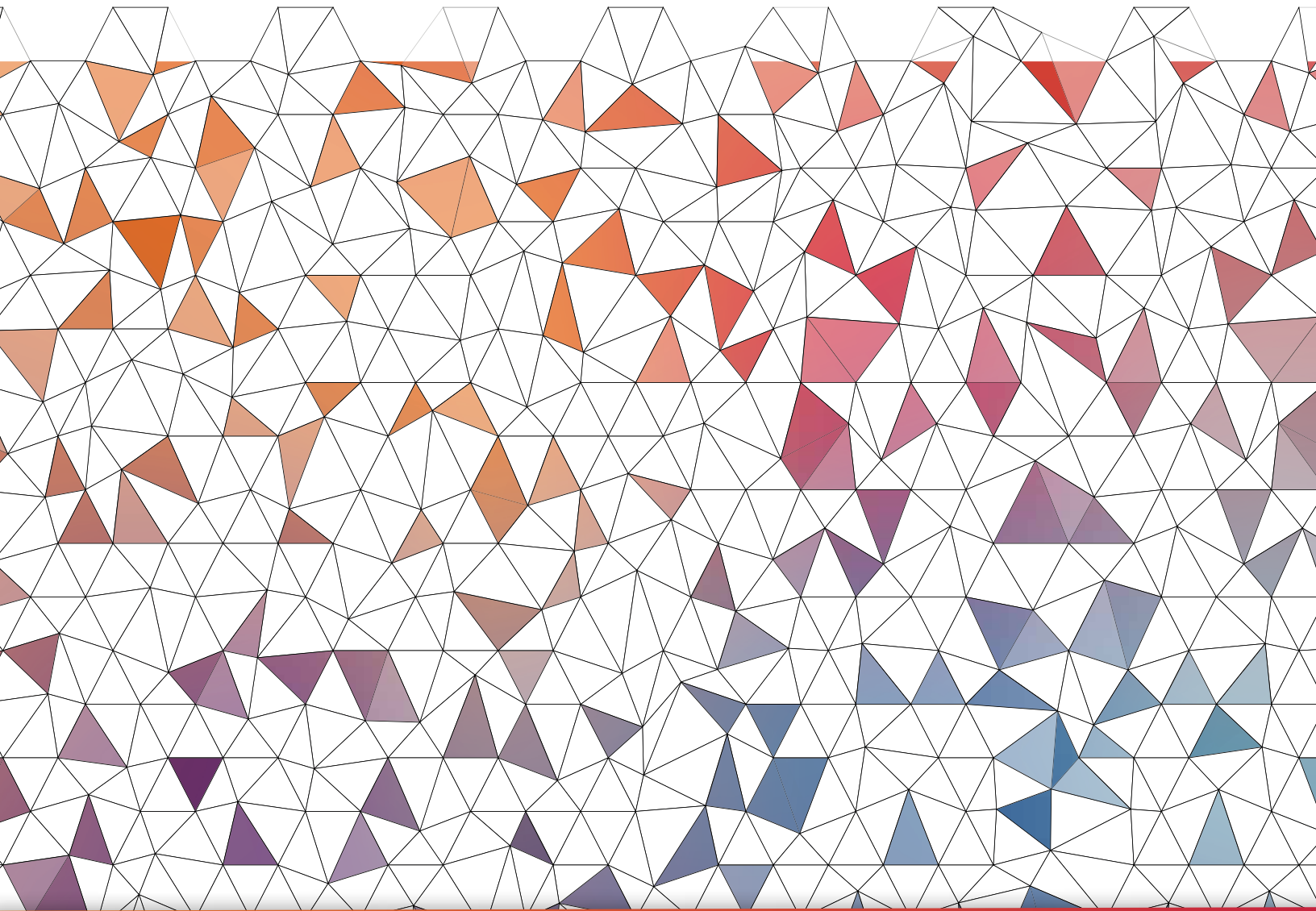
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