



Hosted by the Western Region
Universities Consortium
(WRUC) in conjunction with



National Institute of
Environmental Health Sciences
Worker Training Program

National Trainers' Exchange

Looking to the Future,
Generational Transitions

May 10 – 11, 2018

Phoenix, Arizona

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Track Descriptions

EL

E-Learning (EL): This track focuses on workshops that incorporate e-learning and technology into training to enhance training for workers.

LS

Life Skills and Job Training (LS): This track focuses on workshops that explore life skills training, as well as methods to prepare trainees for the work environment, including finding, obtaining, and keeping employment.

TA

Training Approaches for Worker and Community Empowerment (TA): This track focuses on training methodologies that empower workers and encourage them to actively engage in workplace safety and health discussions.

HW/ER

Hazardous Waste Worker Training and Disaster/Emergency Response and Preparedness (HW/ER): This track focuses on new information and/or innovative training methods that can be used in teaching hazardous waste, disaster/emergency response and preparedness courses, including infectious disease outbreaks, DOE sites, etc.

ID

Instructor Development (ID): This track focuses on courses that provide instructors with different and innovative knowledge and skills to deliver more effective training.

ST

Specific Hazard/Topics (ST): Workshops in this track provide information on specific hazards or topic areas.

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.

Presenting Organization Abbreviations

BIDTI	Biosafety and Infectious Disease Training Initiative at Indiana University Bloomington
CCCHST	Community College Consortium for Health and Safety Training
CPWR	CPWR-The Center for Construction Research and Training
Deep South Consortium	University of Alabama at Birmingham Deep South Biosafety and Infectious Disease Response Training Consortium
DIDRT	The Duke Infectious Disease Response Training
DSCEJ, Inc.	Texas Southern University / Deep South Center for Environmental Justice
FDNY	Fire Department of New York
HAMMER Federal Training Center	Volpentest Hazardous Materials Management and Emergency Response Federal Training Center
IAFF	International Association of Fire Fighters
IBT	International Brotherhood of Teamsters
ICWUC CWHSE	International Chemical Workers Union Council Center for Worker Health and Safety Education
IUOE National Training Fund	International Union of Operating Engineers National Training Fund
LIUNA Training	LIUNA Training and Education Fund
Midwest Consortium	Midwest Consortium for Hazardous Waste Worker Training
NESHTA	National Environmental, Safety and Health Training Association
NJ-NY Center	New Jersey/New York Hazardous Materials Worker Training Center
PETE	National Partnership for Environmental Training Association
SEIU	Service Employees International Union
Texas-Utah Consortium	Texas-Utah Consortium for Hazardous Waste Worker Education and Training
TNEC-CSEA	The New England Consortium-Civil Service Employees Association
UAW	International Union, United Automobile, Aerospace and Agricultural Implement Workers of America
USWTMC	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
SBIR	Small Business Innovation Research E-Learning for HAZMAT Program



National Trainers' Exchange Agenda

Looking to the Future, Generational Transitions

All meetings will be held on the 2nd floor

DAY 1: Thursday, May 10, 2018

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

Valley Ballroom Foyer

8:00 – 10:00 a.m. **Opening Plenary Session**

Valley Ballroom C

Welcome

- Larry Olson, Ph.D., Associate Professor and Program Chair, Environmental and Resource Management, The Polytechnic School, Arizona State University/Western Region Universities Consortium (WRUC)
- Linda Delp, Ph.D., Director, Labor Occupational Safety and Health Program, University of California, Los Angeles/WRUC
- Joseph “Chip” Hughes, Jr., Director, Worker Training Program (WTP), NIEHS

WTP History and Context

- Donald Elisburg, Senior Advisor, National Clearinghouse for Worker Safety and Health Training
- Sharon Beard, Industrial Hygienist, WTP, NIEHS

How We Got Here

- Pam Tau Lee, Retired, Labor Occupational Health Program, Center for Occupational and Environmental Health, University of California; Chairperson, Chinese Progressive Association
- Aurora Le, Indiana University Bloomington

Small Group Activity

10:00 – 10:15 a.m. **Break**

Break Stations *(see map on p. 61)*

10:15 – 11:00 a.m. **Workshop Block 1**

- 1** **LS** **MARYVALE A**

Community Health Workers Helping Underserved Populations Learn About Infectious Diseases Transmission and Control
USWTMC/Make the Road New York
- 2** **ST** **VALLEY BALLROOM B**

Electrocution Hazard: Properties of Electrical Gradients During Contact With Powerlines
IUOE National Training Fund
- 3** **ID** **MARYVALE B**

Incorporating History Into Our Refresher Training
ICWUC CWHSE/SEIU
- 4** **ID** **VALLEY BALLROOM D**

Training the Millennial Generation
IAFF
- 5** **LS** **LAVEEN A**

Utilizing NABTU's Multi-Craft Core Curriculum (MC3) for Construction Apprenticeship Readiness Training
CPWR and The Michigan Bricklayers Apprenticeship and Training
- 6** **ID** **AHWATUKEE A**

Addressing Ethics in the NIEHS Minimum Criteria and our Daily Grind as Trainers
CPWR - The Center for Construction Research and Training
- 7** **EL** **VALLEY BALLROOM E**

Computer Game Based Training for HAZMAT Workers
Spectral Labs Incorporated and Southwestern College
**Additional software demonstration will take place on Friday May 11, from 8:00 a.m.-12:45 p.m. in Ahwatukee A*
- 8** **TA** **AHWATUKEE B**

Environmental Justice and Worker Health Equity
WRUC/UCLA Labor Occupational Safety and Health
- 9** **TA** **VALLEY BALLROOM A**

Customization of Infectious Disease Training for Diverse Audiences
DIDRT/University of Chicago

11:15 a.m. – noon **Workshop Block 2**

- | | | |
|--|------------|-------------------|
| 10 | EL | VALLEY BALLROOM E |
| Augmented Reality in HAZMAT Training
Cell Podium and NJ-NY Center/Rutgers School of Public Health | | |
| 11 | ID | VALLEY BALLROOM A |
| Enhancing PowerPoint Presentations Through Personalization and Targeting
Alabama Fire College | | |
| 12 | HW/ER | AHWATUKEE A |
| What's In Your Bag? "Go Bags" --Tools and Ideas for Being Prepared
TNEC-CSEA/University of Massachusetts Lowell | | |
| 13 | TA | MARYVALE A |
| Empowering Workers Through Involvement in Exercise Planning and Designing Protocols
BIDTI/University of Nebraska Medical Center and Indiana University Bloomington | | |
| 14 | ID | VALLEY BALLROOM B |
| Visualization Technologies in the Classroom
IUOE National Training Fund | | |
| 15 | HW/ER • TA | MARYVALE B |
| The Need for Emergency Preparedness Training: Volunteers, Community and Faith-Based Organizations (VCFOs)
DSCEJ Inc. | | |
| 16 | TA | VALLEY BALLROOM D |
| Dynamic Training Using a Systems Approach With Adult Learners
TNEC-CSEA/University of Massachusetts Lowell | | |
| 17 | TA | AHWATUKEE B |
| Wheels or Deals: Using Ergonomics in the Workplace
Foxwood Casino and UAW Local 652 | | |

ROUNDTABLE SESSIONS: Technology

- | | | |
|---|-------|-------------------|
| 18 | EL | VALLEY BALLROOM C |
| 21st Century Training With VR Simulators
360 Immersive, LLC | | |
| 19 | HW/ER | VALLEY BALLROOM C |
| Badges and Micro Credentialing for Skilled Workers and Volunteers
inXsol, LLC | | |

Historic Bites from WTP: Today's Lunch Specials

- Bruce Lippy, Ph.D., Director, Safety Research, CPWR - The Center for Construction Research and Training
- Craig Slatin, Sc.D., Principal Investigator, University of Massachusetts Lowell – TNEC/CSEA

1:15 – 2:45 p.m. **Workshop Block 3**

20	EL	VALLEY BALLROOM B
Embracing Training Technology in Apprenticeship Readiness Programs		
CPWR/Environmental and Construction Pre-Apprenticeship Program		
21	HW/ER	MARYVALE A
Construction Noise and Hearing Loss Prevention		
CPWR - The Center for Construction Research and Training		
22	HW/ER	AHWATUKEE A
Mass Casualty Incident Triage Exercise		
Alabama Fire College		
23	ID	VALLEY BALLROOM D
Commanding the Classroom, Essential Tips to Being an Effective Instructor		
IAFF - Denver Fire Department and Houston Fire Department		
24	TA	MARYVALE B
Tearing Down Walls and Building Foundations: Best Practices for Effective Health and Safety Trainings for Immigrant Workers		
UAW International Union, UAW Local 6000, and OAI HWWT Consortium Partner		
25	LS	LAVEEN B
Creating Life Skills and Job Training at DOE Facilities		
USWTMC		
26	HW/ER	AHWATUKEE B
Training Healthcare Workers About Aerosol Transmissible Diseases: Lessons From California		
WRUC/UCLA Labor Occupational Safety and Health Program		
27	HW/ER • TA	LAVEEN A
Using the Pathogen Safety Training Guide and Module to Prepare Workers to Research Occupational Infectious Disease Hazards and Controls		
National Clearinhouse for Worker Safety and Health Training and Indiana University Bloomington		
28	ID	VALLEY BALLROOM E
Exploring Interactive Classroom Techniques		
NJ-NY/Center/NYC District Council of Carpenters Training Center		
29	HW/ER • TA	VALLEY BALLROOM A
Disaster Rapid Response: The Experience of ICWUC, NCOSH, and Fe y Justicia in Houston, TX		
ICWUC CWHSE		

ROUNDTABLE SESSIONS: Biosafety and Infectious Disease

- 30** ID VALLEY BALLROOM C
Biosafety and Infectious Disease Training Initiative (BIDTI) Challenges and Lessons Learned From Training Older Populations
BIDTI/Indiana University Bloomington and University of Nebraska Medical Center
- 31** TA VALLEY BALLROOM C
Infectious Disease Response Training for Nursing Staff
DIDRT/University of Louisville
- 32** ID VALLEY BALLROOM C
Customizing Operations Level Training for Multiple Target Audiences
DIDRT/George Mason University

2:45 – 3:00 p.m. **Break**

Break Stations

3:00 – 3:45 p.m. **Workshop Block 4**

- 33** HW/ER • TA VALLEY BALLROOM A
Workplace Violence: Utilizing Response Clickers in Resilience Training
UAW Local 245 and UAW Health and Safety Department
- 34** EL VALLEY BALLROOM B
Classroom Applications of E-Quiz Software
IBT Worker Training Program
- 35** ID VALLEY BALLROOM E
Using Brain Science to Present Better Training
IUOE National Training Fund
- 36** HW/ER MARYVALE A
Donning and Doffing Personal Protective Equipment Using an Approved Low-Output Ebola Checklist: A Simulation Experience
Deep South Consortium/University of Alabama at Birmingham
- 37** HW/ER MARYVALE B
Fluid Training Methods
NJ-NY Center/World Cares Center
- 38** LS AHWATUKEE A
Strategies for First Source Hiring Agreements
CPWR/JobTrain
- 39** HW/ER • EL VALLEY BALLROOM D
Interactive Games and Group Activity Scenarios
WRUC/University of California, Berkeley Labor Occupational Health Program

3:45 – 4:00 p.m. **Break**

Break Stations

4:00 – 5:30 p.m. **Workshop Block 5**

- | | | |
|--|-----------------|-------------------|
| 40 | TA | VALLEY BALLROOM E |
| Falls - Let's Stand Down!
IUOE National Training Fund | | |
| 41 | HW/ER | MARYVALE B |
| Mindfulness Based Stressed Reduction (MBSR) Techniques for Disaster Responders
UAW and University of Michigan School of Public Health | | |
| 42 | EL | AHWATUKEE A |
| Expanding Infectious Disease Outreach and Training
LIUNA Training and Education Fund | | |
| 43 | HW/ER | AHWATUKEE B |
| Safety Planning Training: Empowering Workers and Building Management Support
TNEC-CSEA/University of Massachusetts Lowell | | |
| 44 | HW/ER • ID • ST | LAVEEN B |
| RF Radiation Awareness Training
CPWR - The Center for Construction Research and Training | | |
| 45 | ST | LAVEEN A |
| Bakken Oil Emergency Response Training
NJ-NY Center/Rutgers School of Public Health | | |
| 46 | ID | VALLEY BALLROOM D |
| Break The Ice and Energize Your Classes
ICWUC CWHSE | | |
| 47 | ID | VALLEY BALLROOM A |
| Effective Communication Tips and Techniques for the Trainer and Strategies to Deal with Students Who Know-It-All and Need to Prove It
West Virginia University - Institute for Labor Studies and Research | | |
| 48 | LS | MARYVALE A |
| Evaluation and Selection of Suitable Training Candidates
OAI, Inc. | | |
| 49 | HW/ER • TA | VALLEY BALLROOM B |
| Effective Safety and Health Training for Workers and Communities Involved in Storm Recovery
NJ-NY Center/Rutgers School of Public Health and the National Clearinhouse for Worker Safety and Health Training | | |

ROUNDTABLE SESSIONS: Refreshers

- 50** ID VALLEY BALLROOM C
Rewriting the Annual Hanford 8-Hour HAZWOPER Refreshers
ICWUC DOE Hanford
- 51** ID VALLEY BALLROOM C
Development and Implementation of Modular Refresher Programming
Midwest Consortium/University of Illinois
- 52** HW/ER • ID VALLEY BALLROOM C
Keeping Hazardous Waste Refresher Training Fresh
LIUNA Training and Education Fund
-

5:30 p.m. **Adjourn**

5:30 – 7:30 p.m. **Reception**

Canyon Café, 455 N 3rd Street

DAY 2: Friday, May 11, 2018

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

Valley Ballroom Foyer

8:00 – 9:30 a.m. **Workshop Block 6**

- 53** TA AHWATUKEE B
Worker Empowerment and Site Control Plans
IBT Worker Training Program
- 54** TA LAWEEN A
Chemical Resistant Glove Training Techniques for Spanish and English Speakers
UAW Local 2367, UAW Local 699, and UAW Health and Safety Department
- 55** TA MARYVALE A
Foundations for Safety Leadership for DOE (FSL4DOE)
CPWR - The Center for Construction Research and Training
- 56** HW/ER VALLEY BALLROOM D
Air Monitoring Training Workshop
OAI, Inc., Alabama Fire College, and WRUC/Entrinzc Global Solutions LLC

57 **LS • ID** **VALLEY BALLROOM A**

Microlearning Delivering Delightful and Delectable; Bite Sized Chunks of Learning
OAI, Inc.

58 **ID** **VALLEY BALLROOM B**

Providing Instructor Feedback
LIUNA Training and Education Fund

59 **ST** **LAVEEN B**

The Rise of Energy Storage Systems (ESS)
IAFF - FDNY

60 **HW/ER • TA** **VALLEY BALLROOM E**

Integrating the NIEHS Disaster Worker Resiliency Training Program Into Disaster Preparedness and Response
National Clearinghouse for Worker Safety and Health Training and USW Labor Institute

61 **HW/ER** **MARYVALE B**

Constructing Models as a Communications Exercise in ICS, Hazardous Materials Operations, and Emergency Response Trainings
WRUC/S&S Safety Consulting, TNEC-CSEA, and Alabama Fire College

ROUNDTABLE SESSIONS: Program Development/Processes

62 **ID** **VALLEY BALLROOM C**

Tools and Tips for Proficiency Assessment of Trainees in WTP Program Courses
OAI, Inc.

63 **ID** **VALLEY BALLROOM C**

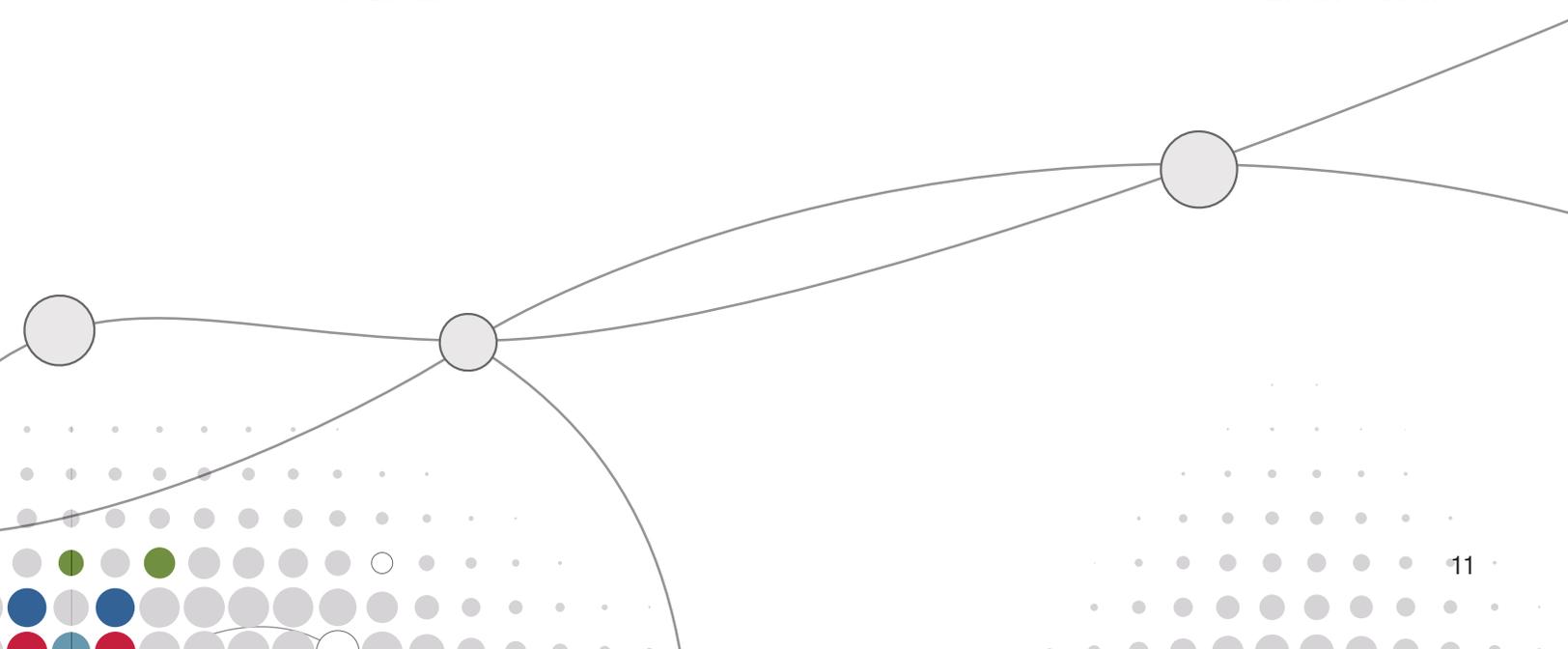
Proper Instructor Selection, Development, and Mentoring
Nova Southeastern University Project SEAMIST

64 **ID** **VALLEY BALLROOM C**

Customizing Trainings for Maximizing Organizations' Use of Time
BIDTI/Indiana University Bloomington and University of Nebraska Medical Center

9:30 – 9:45 a.m. **Break**

Break Stations



9:45 – 10:30 a.m. **Workshop Block 7**

- 65 **HW/ER • ID • ST** **VALLEY BALLROOM A**
A Glow in the Night: The Risks Associated With Transporting Hazardous Materials by Rail
IBT/Rail Worker Hazmat Training Program
- 66 **EL** **VALLEY BALLROOM E**
Respiratory Selection Logic App
IUOE National Training Fund
- 67 **HW/ER** **MARYVALE A**
Emergency Management Planning: Laboratories
Texas-Utah Consortium/The University of Texas Health Science Center at Houston
- 68 **TA** **VALLEY BALLROOM D**
Utilizing Course Evaluations and Developing an Annual Post-Impact Survey to Provide Effective Trainings
BIDTI/Indiana University Bloomington and University of Nebraska Medical Center
- 69 **EL** **VALLEY BALLROOM B**
Building Peer Trainer Technology Competency
IUOE National Training Fund
- 70 **HW/ER • TA** **MARYVALE B**
Using Data to Fill Gaps in Preparedness
Midwest Consortium/Citizens Environmental Alliance
- 71 **HW/ER** **LAVEEN A**
Using Procedural Simulation for Infectious Disease Response Training for Health Care Workers
Deep South Consortium/University of Alabama at Birmingham
- 72 **EL** **AHWATUKEE B**
Building Innovative Industry Partnership Through Digital Learning
CCCHST/Amarillo College
- ROUNDTABLE SESSIONS: Enhancing Programs with Partnerships and Laws**
- 73 **HW/ER** **VALLEY BALLROOM C**
Practical Understanding of OSHA, EPA Laws and Acronyms With Interactive Atmospheric Metering Explanation and Techniques
IAFF - Arlington County, Virginia
- 74 **TA** **VALLEY BALLROOM C**
How to Extend and Enhance Online HAZWOPER Through Collaboration With Community Colleges, Universities, and Community Organizations
CCCHST/The University of Tennessee

10:30 – 10:45 a.m. **Break**

Break Stations

- 75** **HW/ER** **LAVEEN A**

Conducting Monthly Drills for Emergency Responders
Midwest Consortium/ERS International
- 76** **TA** **LAVEEN B**

A Partnership to Increase Rail Safety Preparedness in an Urban Area
Midwest Consortium/University of Minnesota and Citizens Acting for Rail Safety in the Twin Cities
- 77** **EL** **VALLEY BALLROOM D**

Virtual Reality in Training
HAMMER Federal Training Center
- 78** **ID** **VALLEY BALLROOM A**

Designing and Delivering Effective Training
CCCHST/PETE and NESHTA
- 79** **HW/ER** **MARYVALE B**

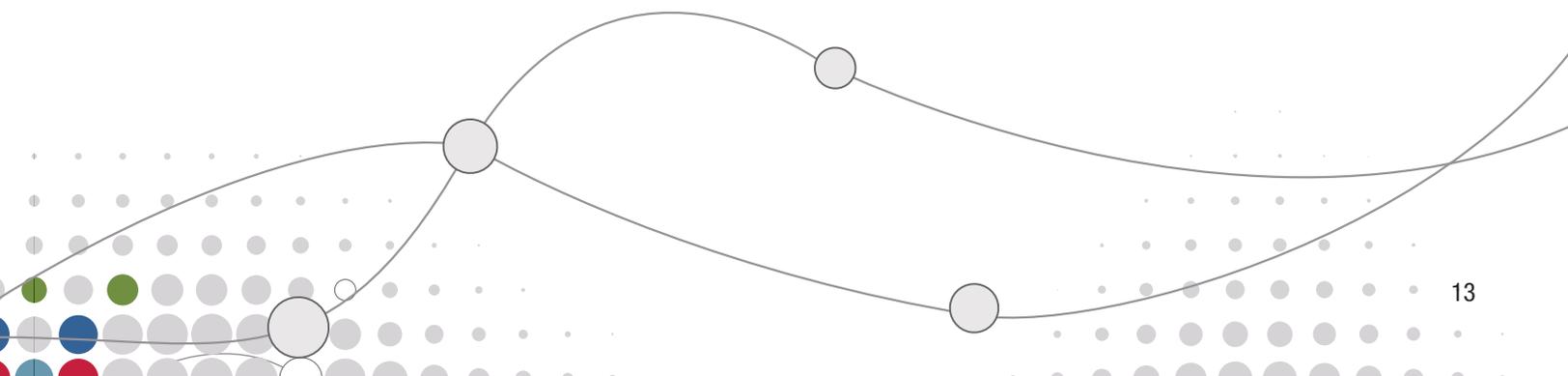
It Takes a Village: Benefits of Cross-Sector Planning and Training for an Infectious Disease Response
Deep South Consortium/University of Alabama at Birmingham
- 80** **HW/ER** **VALLEY BALLROOM E**

Chemical Identification in Emergency Response Situations
IBT Worker Training Program
- 81** **TA** **AHWATUKEE B**

Web-Based Training Versus Human Interaction: THE BATTLE
UAW Local 1700 and UAW Health and Safety Department
- 82** **EL** **VALLEY BALLROOM B**

Implementing Affordable Virtual Reality and 360 Degree Photography Into Disaster Preparedness Training
TNEC-CSEA
- 83** **LS** **MARYVALE A**

Opioid Abuse Creates Safety Hazards on the Work Site
IUOE and IUOE National Training Fund



12:45 – 1:30 p.m. **Workshop Block 9**

84	TA	AHWATUKEE B
Mobilizing UAW Members in Response to Hurricane Maria UAW Health and Safety Department and University of Michigan School of Public Health		
85	HW/ER • ID	VALLEY BALLROOM D
Fentanyl-Occupational Exposures and How to Prevent Them OAI, Inc.		
86	EL	VALLEY BALLROOM A
Online E-Learning and In-Class Training: A Blended Learning Approach Duke University		
87	HW/ER • LS	MARYVALE A
Job Stress and the HAZWOPER Worker-Training to Build Worker Health and Safety TNEC-CSEA		
88	ID	VALLEY BALLROOM E
Activities to Enhance Student Learning and Participation CCCHST/PETE and Eastern Iowa Community Colleges		
89	HW/ER	VALLEY BALLROOM B
Job Hazard Analysis - Utilizing FACE Reports in the Classroom WRUC/UCLA Labor Occupational Safety and Health		
90	HW/ER • EL	MARYVALE B
A Bi-Modal Approach to Experiential Learning and Simulation in the Health Care Environment Deep South Consortium/University of Alabama at Birmingham		

1:30 – 1:45 p.m. **Break**

Break Stations

1:45 – 3:15 p.m. **Workshop Block 10**

91	LS	VALLEY BALLROOM B
When Disaster Strikes Are You/Are They Really Ready? DSCEJ Inc., and OAI, Inc.		
92	ST	MARYVALE B
Advances in Rigging Awareness Safety Training UAW Local 600 and UAW Local 974		
93	HW/ER • TA	LAVEEN B
Manual Material Handling CPWR - The Center for Construction Research and Training		
94	TA	AHWATUKEE B
Specific Hazards of Confined Spaces IBT Worker Training Program		

95	ID	VALLEY BALLROOM D
The Confident Trainer ICWUC CWHSE		
96	HW/ER	VALLEY BALLROOM A
Simple Chemical Properties Demo Alabama Fire College		
97	ID	LAVEEN A
Learning Retention Rewards From Adopting a Micro-Scale Approach to the Classroom Experience Nova Southeastern University Project SEAMIST		
98	ST	VALLEY BALLROOM E
Drone Small Unmanned Aerial Vehicle IUOE National Training Fund		
99	ID	MARYVALE A
Team Teaching – Advantages and Pitfalls IAFF - Campbell River, British Columbia and Vancouver, British Columbia		

3:15 – 3:30 p.m. **Break** **Break Stations**

3:30 – 5:00 p.m. **Closing Plenary Session** **Valley Ballroom C**

Voices of the Future

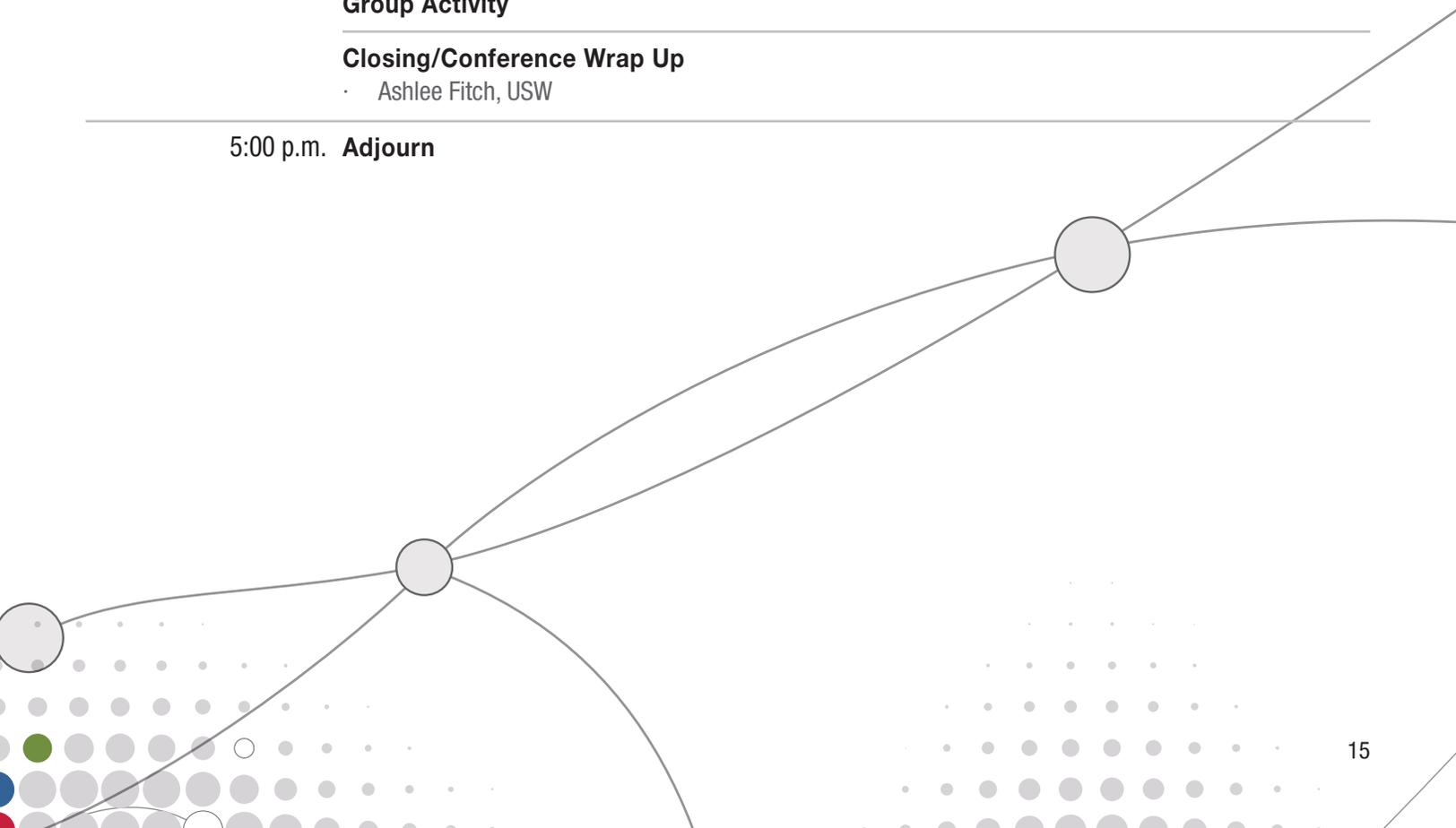
- Auturo Archila, USW/Labor Institute
- Marianela Acuña Arreaza, Executive Director, Fe Y Justicia Worker Center
- Eunice Salcedo, AFSCME

Group Activity

Closing/Conference Wrap Up

- Ashlee Fitch, USW

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



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Workshop Block 1

Thursday, May 10 | 10:15 - 11:00 a.m.

1

LS

Community Health Workers Helping Underserved Populations Learn About Infectious Diseases Transmission and Control

Luisa Arias, *USWTMC/Make the Road New York*

Community Health Workers (CHW) are respected members of communities that are trained to educate, guide, and act as a liaison to the community, including assistance in finding health care access. Due to the relationships they have with members of vulnerable communities, they are able to discuss sensitive topics including infectious disease in a supportive, open atmosphere. The CHW program at Make the Road New York is unique in that the training is geared to prepare individuals to support others with chronic health issues while simultaneously including a component of health and safety considerations and protocols for the workers themselves. This program has been instrumental in disseminating information on infectious disease. Additionally, most of the students in this course also have participated in other Steelworkers TMC and MRNY facilitated training programs including OSHA 10-hour Outreach training, disaster training and other topics. The facilitators gain experience and knowledge that allow them greater acceptance of participants who are from vulnerable communities. In turn, participants felt comfortable raising potentially sensitive issues related to infectious disease that they may not have otherwise presented.

2

ST

Electrocution Hazard: Properties of Electrical Gradients During Contact With Powerlines

Patrick Bell, *IUOE National Training Fund*

Contact with powerlines by equipment or vehicles create an invisible hazard that can lead to the electrocution of any workers within the vicinity of the incident. Electricity will energize the equipment or motor vehicle that has contacted the powerline and energize the ground, creating electrical gradients radiating outward. Workers within this area have a potential of being electrocuted when exiting the energized area if they do not properly use a safe exit strategy. If not in immediate danger, stay in place until power is disconnected. If in immediate danger, use the shuffle method with your feet, keeping them close together. The IUOE National Training Fund session will discuss basic electrical terminology, safe working practices and powerline safety. Using a visualization tool created by the NTF, a demonstration using an electrical gradient box will show the voltage and amperage that is incurred between any two contact points of an energized material.

3

ID

Incorporating History Into Our Refresher Training

Mark Catlin, *ICWUC CWHSE/SEIU*

This session is a skill building activity with the objective of encouraging the incorporation of occupational and environmental health and safety history into refresher training. We'll cover ways to include historical elements in trigger activities, as examples in case studies and in complete topic modules. During the session, refresher modules will be provided, demonstrated and discussed that use historical material to review common refresher training topics, including respirator use (during WWI), hazardous material emergency response (in the 1950s) and decontamination procedures (in the 1970s). To aid trainers and training programs, sources of occupational and environmental health and safety history material will be provided, including films, books and websites. The historical perspective can enrich understanding of the topic today through understanding its

past and check current knowledge by comparison to an unfamiliar historical setting. Adding historical elements can also enliven refresher training, which is often viewed as tedious by many participants. Many incidents and issues in our history have parallels with today, such as the fight to protect workers from silicosis in the 1930s and today, or oil spill cleanup worker protection in the 1980s and today. Making the connections between historical and today's events and topics can make history and our training come alive.

4

ID

Training the Millennial Generation

Elizabeth Harman, *IAFF*

Nicholas Del Re, *IAFF*

In this 45-minute talk, we will briefly discuss the characteristics of the Millennial Generation and explore in depth how these characteristics relate to their ability, or inability, to learn productively in a typical worker-trainer setting. This discussion will encompass both a review of the current literature and survey results from the students regarding techniques they find effective and engaging during large group educational sessions. The goal of this talk is to expand the arsenal of tools to use when designing and delivering large-group educational sessions to maximize the learning and retention of information for your students.

5

LS

Utilizing NABTU's Multi-Craft Core Curriculum (MC3) for Construction Apprenticeship Readiness Training

Howard Hipes, *CPWR/Michigan Bricklayers
Apprenticeship and Training*

Steve Surtees, *CPWR - The Center for Construction
Research and Training*

The NABTU Multi-Craft Core Curriculum (MC3) is a comprehensive apprenticeship readiness curriculum designed as a resource to aid in providing a path for local residents, particularly those from underserved communities, including people of color, women and

transitioning veterans, to gain access to Building Trades' registered apprenticeship programs in their areas. Developed by and for NABTU member organizations, this program provides the target population with industry and nationally recognized credentials to address critical workforce skill sets in order to prepare them for diverse career opportunities in construction. Participants will explore the core components of the MC3 curriculum and learn how to utilize this resource in partnership with a local Building Trades Council.

6

ID

Addressing Ethics in the NIEHS Minimum Criteria and our Daily Grind as Trainers

Bruce Lippy, *CPWR - The Center for Construction Research and Training*

Ethics training strikes most folks as a great idea that they hope they can avoid during their natural lifetimes. But many corporations and organizations, including the AIHA and ASSE, have codes of ethics that they require their employees and members to follow. Certified Industrial Hygienists have been stripped of their certifications for failing to do so. During the recent workshop in October 2017 to revise the NIEHS Minimum Criteria, the question was raised whether the document should include an ethical code for instructors and training directors funded by WTP. In this workshop, the facilitator, a former member of the AIHA Ethics Education Committee, will take 20 minutes to present the key elements of ethical thinking and provide participants with practical tools to evaluate whether an ethical challenge is being faced and how to handle it. The remainder of the session will be two participatory activities. First, participants working in groups will discuss ethical problems they have faced as trainers and then apply tools to these challenges to arrive at reasonable resolutions. The final section will be a general group discussion of how the Minimum Criteria could be revised to provide ethical guidance to trainers and directors.

7

EL

Computer Game Based Training for HAZMAT Workers

John Rolando, *Spectral Labs Incorporated*

Nick Vent, *Spectral Labs/San Diego County HAZMAT (Retired)*

* Additional software demonstration will take place on Friday May 11, from 8:00 a.m.-12:45 p.m. in Ahwatukee A

As part of an NIEHS SBIR grant in support of the Worker Training Program, Spectral Labs and Southwestern College's Environmental Hazardous Materials Technology Program developed and tested a first-person training video game using Spectral Labs' Realistic Adaptive Interactive Learning System (RAILS) to train students in both off-site pre-visit evaluation and on-site characterization procedures with realistic environments, equipment and tools. The software helps workers identify and prepare for possible hazards with a pre-planning site assessment module, and additionally an on-site assessment module to train concepts outlined in 29CFR1910.120(c). The training software was developed using the Unity5 engine with Spectral Labs proprietary code modules. Commonly used equipment for site characterization was accurately modeled enabling students to practice equipment operation. Faculty tested the video game in the classroom by simulating key operational tasks where students were performing tasks in the first person. The objective of this session is to demonstrate the RAILS training video game modules through audience participation, and to discuss the results of its application in the pilot study performed in the classroom. Results of the pilot will be presented to participants along with suggestions for how the training modules may be deployed and applied to training programs. Participants will work in groups testing the training video game to get a hands-on understanding and see if the software is applicable to their own training, and will have an opportunity to provide feedback and ask questions.

8

TA

Environmental Justice and Worker Health Equity

Yodit Semu, *WRUC/UCLA Labor Occupational Safety and Health Program*

This workshop explores popular education approaches to integrate environmental justice and worker health equity into training for workers and community members. Class, race/ethnicity, gender, age, education and language are all factors that affect workers' access to jobs, resources and exposure to job hazards. The workshop includes a case study and activities that instructors can adapt to a variety of

settings to ensure training is relevant to participants, stimulate critical analysis and provide tools to act to improve environmental conditions in the workplace and community. We will demonstrate how principles of environmental justice and worker health equity apply to a case study of the Exide battery recycling facility in Vernon, California, which exposed workers and community members to lead for decades. A community cleanup initiative (one of the largest of its kind) includes a local hire job creation provision and an opportunity to train workers, who are also members of the community. The workshop consists of three parts: 1) Overview of environmental justice and worker health equity, 2) Demonstrations and interactive discussions of an environmental justice case study focused on community cleanup of soil contaminated with lead generated by Exide, and 3) Discussion, feedback, and resource sharing. Handouts, tools and materials include: EJ lesson plan and case study, video, and mapping activity.

9

TA

Customization of Infectious Disease Training for Diverse Audiences

Hsiang-Ming Wang, *DIDRT/University of Chicago*

Infectious disease training for hospital staff presents a unique challenge due to the enormous knowledge gap between the target-audience groups, ranging from highly-educated physicians and nurses to housekeeping staff with limited formal education. It is crucial that training methodology is customized for each group to ensure effectiveness. For the former group, the focus is on pinpointing where clinicians may put themselves at risk when engaged in procedures with which they are already extremely proficient, especially when introducing the limitations posed by the use of additional personal protective equipment (PPE). For the latter group, the focus is on risk awareness using language appropriate for the audience and then to perform memorable exercises that help staff reduce their exposure risk when performing their everyday tasks. In this session, we will first discuss the common components in the development of these training sessions. The process begins with leadership engagement and must include site-specific customization based on the approved curriculum. Further, we will share with the group some of the challenges that we encountered and the approaches we took in overcoming those challenges. Lastly, using the two groups described earlier as case studies, we will present the activities that were developed to fit each target-audience group. A short video demonstrating the different activities conducted by physicians and nurses will be shared. We will also demonstrate the four exercises developed for the housekeeping group: glove removal, hot-spot identification, spill clean-up, and PPE selection.

Workshop Block 2

Thursday, May 10 | 11:15 a.m. - noon

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EL

Augmented Reality in HAZMAT Training

Cesar Bandera, *Cell Podium*

Mitch Rosen, *NJ-NY Center/Rutgers School of Public Health*

Peter Schmitt, *Cell Podium*

A goal of HAZMAT training exercises is presenting learners with realistic experiences involving PPE, tools, air monitoring instruments/sensors, and mock hazards. All are readily available to trainers, except sensors that operate with mock hazards, often requiring the instructor to provide verbal descriptions of hazard exposure to the learner, breaking the realism of the exercise. Because HAZMAT workers' real-time decisions are often dictated by sensors, making and interpreting sensor readings under realistic conditions are important skills to learn. Participants of this hands-on workshop will learn how to incorporate augmented reality in experiential HAZMAT training that cost-effectively supports the development and evaluation of these important skills. Specifically, participants will operate firsthand augmented reality for HAZMAT training exercises that integrate real PPE and tools with mock hazards and hand-held sensor simulators that behave as if they were actual air monitoring instruments and the hazards were real. The behavior is realistic both in terms of the exposure values displayed, themselves a function of the type of hazards in the exercise and their distance from the learner, and the response time to changes in the environment (e.g., if the instructor invokes a sudden chemical release, or if the learner quickly approaches or retreats from a hazard). At the workshop, we will discuss how this technology is used in field exercises by NIEHS WTP grantees, how augmented reality differs from virtual technology and other computer-based training paradigms, and the settings for which each is recommended in HAZMAT worker training.

Enhancing PowerPoint Presentations Through Personalization and Targeting

Robert Berry, *Alabama Fire College*

The objective of this brief presentation is to demonstrate how a standardized (canned) PowerPoint presentation can be enhanced to create a teaching environment which will motivate attendees and increase attention and participation. Personalizing what is usually a dry presentation topic, e.g. the Incident Command System series of courses mandated for all responders, by simply replacing some of the embedded images on the slides with targeted audience photos depicting local responders, equipment, or scenarios can result in greatly increased student interest and discussion. Experience has shown us that a little time spent researching the audience and locale prior to presentation and including local topics of interest relevant to the slide material greatly enhances the experience for the participant without changing the content of the standardized slideshow.

What's In Your Bag? "Go Bags" — Tools and Ideas for Being Prepared

David Coffey, *TNEC-CSEA/University of Massachusetts Lowell*

Most disasters and emergencies can come with little notice. Emergency responders, skilled support personnel, recovery workers, volunteers and the trainers that train them all need the right tools to do their job. Having the right tools can make the difference between success and failure.

One way to stay prepared during a sudden crisis is by packing a go-bag, an emergency carryall with just-in-case supplies.

This discussion will provide trainers with a fun and interactive process for helping their audience think about and develop a list of materials and supplies that can be used when escaping from an emergency or responding to one.

The session will include:

- What's a go bag?
- Conducting needs assessment; what tools and supplies do I really need to get the job done?
- Small group activity ideas for helping students develop their own custom go bags.
- Resource lists of useful materials.

Empowering Workers Through Involvement in Exercise Planning and Designing Protocols

Jocelyn Herstein, *BIDTI/University of Nebraska Medical Center*

Aurora Le, *BIDTI/Indiana University Bloomington*

Constructed in 2005, the Nebraska Biocontainment Unit (NBU) did not receive a single patient warranting high-level isolation until the fall of 2014, when the NBU treated three cases of Ebola virus disease. During the nearly ten years without patient admittance, partnerships with state and local agencies were developed and procedures refined in all areas of biocontainment care, including close collaboration with the Omaha Fire Department (OFD) EMS in preparing for highly infectious disease transport. The involvement of OFD in quarterly exercises, both in the years before the Ebola virus outbreak and since, has led to a strong partnership with the agency and ensured that the continuously refined procedures include input from NBU personnel, OFD leadership, and from EMS crews involved in suspected or confirmed patient transport. The objective of this roundtable discussion is to apply lessons learned from the Nebraska Biocontainment Unit partnership with OFD in discussing how to fully engage a partnering organization and empower workers by including them in exercise planning and post-action reporting. Topics will include how to develop and maintain partnerships with one committed organization; how to involve workers at all levels of the organization, from the supervisor level to those on the frontline, in planning exercises and designing/refining protocols designed for their workplace safety and health; and how to use feedback received from the partnering organization to expand and improve trainings and educations for other workers/organizations in the same sector.

Visualization Technologies in the Classroom

John Kovach, *IUOE National Training Fund*

Enhancing the training skills of Peer Trainers is a key emphasis of the IUOE National Training Fund (NTF) in delivering safety and health training to its members. The NTF develops tools to train its Peer Trainers, to more effectively accomplish the training and to improve their ability to present difficult to understand concepts. Many of the worker training courses (including HAZWOPER, respiratory protection, refreshers, industrial hygiene, and confined space) have a commonality of concepts that can be better conveyed through visualization. These are concepts such as ventilation, opacity, hazardous gases and vapor concentrations (PELs, RELs), and

measurement techniques and calibration. A quarter meter (1/4 meter cubed) visualization chamber constructed of plywood with Plexiglas faces in a precise cube is such a tool. Each face has access ports strategically placed and easily adapted to particle generation, opacity meters (laser systems) and monitoring instrumentation. Participants should gain a working knowledge of how to interpret this practical information in real time and solve problems in the classroom.

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HW/ER • TA

The Need for Emergency Preparedness Training: Volunteers, Community and Faith-Based Organizations (VCFOs)

Bruce McClue, *DSCEJ Inc.*

Kim Chapital, *DSCEJ Inc.*

The advent of natural disasters over the last decade has put a strain on our federal, state, and local government resources. The pressure of meeting the economic, structural, medical and emotional needs has caused them to become inefficient and slow to respond. This inefficiency has caused volunteer groups such as the Cajun Navy to try to fill the gaps. Having volunteer, community, and faith-based organizations responding in time of disasters to help is not the issue. Untrained or poorly trained individuals can cause additional safety issues. Volunteer, Community and Faith-based Organizations (VCFO) can provide resources that can help reduce the impact of a large-scale emergency. There are several reasons why it is important to train VCFOs: 1) They are already a big part of the community and have in place distribution networks, 2) they have the trust of the communities they serve, 3) They have a vested interest to see the communities restored physically and emotionally. This training is designed to help VCFOs properly prepare and respond to disasters. They can prepare the physical facilities in case an emergency takes place during a service; and prepare church leaders and volunteers to spread the word about disaster readiness among their congregation through information and readiness toolkits. VCFOs will provide church leaders and volunteers the training required to help the community during disaster response and recovery.

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TA

Dynamic Training Using a Systems Approach With Adult Learners

Bridget McGuiness, *TNEC-CSEA/University of Massachusetts Lowell*

Tom Estabrook, *TNEC-CSEA/University of Massachusetts Lowell*

This will be an opportunity for participants to review adult learning theory, learning styles, and Instructional Systems Design (ISD) approach to developing health and safety training for adult workers. The facilitators of this workshop will showcase a small group activity they developed which incorporates these design and delivery systems. Participants are invited to bring an example of an activity they have developed. Working in small groups, many the activities shared by participants will be reviewed for how they incorporated adult learning principals, learning theories and ISD elements, and whether group recommendations could be incorporated into the activities.

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TA

Wheels or Deals: Using Ergonomics in the Workplace

David Sherman, *Foxwood Casino*

James Jesselaitis, *UAW Local 652*

Kristy Kuzbiel, *UAW Local 652*

According to the Bureau of Labor Statistics (2013), musculoskeletal disorders (MSDs) account for over one third of all reported worker injury and illness. Whether a worker on the shop floor or a dealer at a casino, awkward postures and high repetition have led to high injury rates, many of which are not recognized as work related or compensable. This session will describe how training tools developed in the auto sector can be redesigned to fit the evaluation needs of a variety of workplaces. Trainers will discuss how, in one setting, these tools helped to identify ergonomic and safety issues separated by risk and body part and assigned champions using hierarchy of controls to eliminate or reduce risks. Participants will be introduced to checklists, symptom surveys, and various tools used to identify ergonomic issues and prioritize interventions to eliminate risk factors. The participants will also see how the tools used were able to help create a non-traditional rotation plan which reduced ergonomic exposures that were unable to be eliminated by other controls. By attending this presentation, you will have a better understanding of all the training elements needed and strategies to apply to address ergonomic hazards in your work place. The session will be facilitated by a Union ergonomics analyst from the auto sector and a world-class craps dealer.

ROUNDTABLE SESSIONS: Technology

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EL

21st Century Training With VR Simulators

Jennifer Lastra, *360 Immersive, LLC*

Lead a roundtable discussion that introduces how virtual reality (VR) technology is integrated and used to supplement traditional training methods. The discussion will focus on mobile-based VR apps and eLearning platforms as enhanced tools used to create more robust and effective safety and health training by combining the three domains of learning: cognitive, affective and psychomotor. The discussion will specifically identify how the use of VR simulators successfully engages all age groups, are cost efficient in development and updating, effective in classroom and remote delivery, multilingual, provide real time feedback to adult learners, promote peer discussion, and long-term retention rates. Emphasis will be placed on how trainers can acquire useful information through embedded assessments found within VR apps to create individualized curriculum and target skill gaps discovered during training sessions. Additional information will be provided about the role VR plays in workforce development to prepare for and prevent HAZMAT transportation accidents, minimize exposure to hazardous waste during emergency response operations, and general workplace safety best practices. Live demonstrations of existing WTP VR simulators will be provided for illustration purposes, beta testing, and feedback.

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HW/ER

Badges and Micro Credentialing for Skilled Workers and Volunteers

Henry Ryng, *inXsol, LLC*

Dan Suhr, *inXsol, LLC*

There is a growing technology of digital badges and a framework to establish the credibility of the issuing/certifying entities. In the technology field, Cisco Certification and A+ certifications have become standards that rival college degrees in the job market. In disaster response there is a need to provide just in time training which is both contextually relevant and practical within time constraints and limited duties of an individual. In this work shop, attendees will be introduced to the system and technologies to set up a badge and how a collection of badges equate to a certification. The group will participate in a facilitated exercise defining the credentials for 2-4 worker/responders. The group will discuss how this may map into or supplement OSHA training. The concept of peer (WTP organization) validation and support for badges and credentialing will be put on the table for discussion.

Workshop Block 3

Thursday, May 10 | 1:15 - 2:45 p.m.

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EL

Embracing Training Technology in Apprenticeship Readiness Programs

Eva Benoit-Ashford, *CPWR/Environmental and Construction Pre-Apprenticeship Program*

Jerry Repka, *CPWR/Environmental and Construction Pre-Apprenticeship Program*

Community-based workforce development programs are using new and innovative approaches to learning by integrating technology into their training to enhance their curricula, outcomes, and impact. This session will explore strategies and resources designed to improve and enhance learning outcomes through gamification, blended learning, online student assessments, and other digital tools. Presenters will share their best practices by demonstrating free online resources including Kahoot, Khan Academy, Socrative, and Google Translate among others to improve overall impact. Workshop attendees will have the opportunity to participate in a Kahoot game as well as create their own Kahoot game with their smartphones, tablets, or laptops.

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HW/ER

Construction Noise and Hearing Loss Prevention

Eileen Betit, *CPWR - The Center for Construction Research and Training*

Gary Gustafson, *CPWR - The Center for Construction Research and Training*

This presentation will introduce participants to CPWR's new Construction Noise and Hearing Loss Prevention training program. The Construction and Hearing Loss Prevention program provides the necessary training to identify a noise hazard, understand the risk for hearing loss, and know what steps should be taken to work safely to prevent hearing loss. The modules are designed to provide trainers options for conducting noise and hearing loss training depending on the time available. It is divided into three parts. The 1 Hour Module is designed to provide trainers with the information needed to use as a stand-alone training program or to successfully 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 an 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 programs. The exercises are short, and each one identifies the materials and related information a trainer will need to carry out the exercise.

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HW/ER

Mass Casualty Incident Triage Exercise

David Brazier, *Alabama Fire College*

This participatory exercise is the summation of an 8-hour Mass Casualty Incident Triage course. Both medical and chemical triage is taught to personnel who have a HAZMAT component. Medical triage is taught to all personnel that attend the class. A room is set up to be dark and have screaming, sirens and other sound effects to simulate chaos of an MCI. Stuffed teddy bears are placed in the area with tags listing injuries/symptoms represent victims. The class then organizes into a response team operating under the ICS. Entry teams in appropriate personal protective equipment enter the scene with the specific charge to find and triage victims according to guidelines learned earlier in the class. Actual triage tags are attached to the victims and the number and classification of victims is reported to the command post after entry. After all entries are completed, the reports are compared to the actual number and classification and discussed with the class. The objective for this exercise is to practice triage under stressful and chaotic conditions.

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ID

Commanding the Classroom, Essential Tips to Being an Effective Instructor

CJ Haberkorn, *IAFF - Denver Fire Department*

Dana Brown, *IAFF - Houston Fire Department*

In today's world with the advances in technology and generational differences in the workplace, Occupational Instructors often find it difficult to reach the spectrum of their adult learners. Commanding the Classroom, Essential Tips to Be an Effective Instructor, is a 90-minute, interactive journey into the world of Adult Occupational Instruction. This class, which is team taught by both a male and female, will help you develop and implement educational strategy and tactics that will make you successful in your classroom delivery. The class is designed as an informational session that will allow students to ask the instructors questions and gain valuable knowledge on how to achieve the trust and adoration of your adult learner audience. The content of this class is a quick moving interactive discussion that will allow the

students to look at training your peers, cherish life experience of the adult learner, and discuss inhibiting factors that you may encounter as an instructor. Additionally, the class will teach you how to develop a sound educational action plan. Lastly, there is a detailed, focused discussion on generational differences of the adult workforce. The instructional team for this class has a combined 25 years of professional instruction in the labor industry.

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TA

Tearing Down Walls and Building Foundations: Best Practices for Effective Health and Safety Trainings for Immigrant Workers

Marisela Lopez, *UAW*

Maria Enriquez, *UAW Local 6000*

Michael Lok, *OAI HWWT Consortium Partner*

Connie Tran, *OAI HWWT Consortium Partner*

This panel discussion will draw from UAW (United Workers Union) and The California Healthy Nail Salon Collaborative (Collaborative) experiences in conducting outreach and culturally competent trainings to immigrant populations and non-native speakers. The Collaborative has over a decade of experience working with nail salon workers who are majority low-income, immigrant Vietnamese women of reproductive age and lack access to health care while UAW has extensive experience conducting collaborative outreach and trainings for Latino Workers in Detroit, Southwest Michigan and Puerto Rico. The Collaborative and UAW will present on effective training strategies, successes, barriers and challenges to deliver relevant training to immigrant populations. We will also share how we developed diverse partnerships with organizations including various community groups and government agencies to leverage resources that are key to successful outreach efforts and implementation of culturally competent training strategies. The audience will gain an understanding on: 1) How to organize with diverse organizations, 2) Approaches for training workers using adaptable modules, 3) Effective needs assessment and evaluation techniques, 4) How to foster increased understanding and retention of training topics, and 5) How to cultivate the trust and confidence of key community leaders. Participants will leave the session with a new appreciation for what works, what improvements are needed and the knowledge gaps we need to fill to protect the lives and families of these diverse workers.

Creating Life Skills and Job Training at DOE Facilities

Marybeth Potter, *USWTMC*

Southern Ohio has an unemployment rate of 7.1 percent and a shortage of skilled workers to staff certain jobs at the Portsmouth Gaseous Diffusion Plant (PGDP). PGDP is part of a Department of Energy site that previously manufactured nuclear weapons. The site is currently being deactivated and the clean-up is expected to last 25 years. Radiation Control Technicians (RCTs) are entry-level workers that monitor radiation levels in the plant. They play a critical role in keeping both the workers and the community safe. The PGDP in Piketon is currently short approximately 40-60 people. There is also a need for RCTs at similar sites nationwide. RCTs earn \$22-\$24/hour to start. That wage jumps to \$38-\$42/hour in five years. The Steelworkers' Tony Mazzocchi Center in partnership with the USW Local 1-689, the Village of Piketon, and the Pike County Career Technical Center is offering a technically advanced RCT pre-employment training course to local community members. Classes are tuition-free and include all related materials due to the support of the NIEHS cooperative agreement. Classes are taught by USW/TMC Worker-Trainers from the site who are current or former RCT's and have been authorized to teach this course. The course has been designated as conforming with the conditions of reciprocity by DOE. The panel will discuss the challenges of establishing this program, the health and safety implications and the opportunities for long-term employment at Piketon and other DOE facilities. A representative training module will be conducted as part of the presentation.

Training Healthcare Workers About Aerosol Transmissible Diseases: Lessons From California

Kevin Riley, *WRUC/UCLA Labor Occupational Safety and Health Program*

This workshop will examine strategies developed by the Western Region Universities Consortium (WRUC) to train healthcare workers in California about aerosol transmissible disease (ATD) hazards and the Cal/OSHA ATD Standard. California is the only state in the country with an occupational standard to protect workers in specified healthcare and other settings from infectious pathogens, both known and novel, for which the CDC recommends airborne or droplet precautions. The standard covers both endemic diseases and those resulting in outbreaks. WRUC developed this initiative in response to an expressed need for awareness-level training and user-friendly materials to support recognition of the standard among nurses, environmental service workers, facility administrators, union stewards and worker-leaders. The workshop will comprise three parts. First, we will discuss the background and activities of this training initiative, including key partnerships with occupational health experts and healthcare worker representatives. Second, we will demonstrate methods and materials we have developed to teach various worker audiences about ATD hazards and the basic provisions of the Cal/OSHA standard. Participants will engage in activities designed to illustrate how ATDs spread, highlight occupational exposures and consider strategies for control and prevention of transmission. We will also review a case study exercise used to examine employer responsibilities in California. Finally, we will discuss how the curricula content and materials can be adapted to other training audiences, including those in states without a legally enforceable standard.

Using the Pathogen Safety Training Guide and Module to Prepare Workers to Research Occupational Infectious Disease Hazards and Controls

Jonathan Rosen, *National Clearinghouse for Worker Safety and Health Training*

Shawn Gibbs, *BIDTI/Indiana University Bloomington*

Workshop participants will review the Pathogen Safety Data Guide (PSD) and Training Module and discuss their experiences and ideas on using PSD training materials. In response to the Ebola crisis, the

NIEHS WTP conducted a gap analysis that identified the need to train workers on how to use existing pathogen safety data resources. It also identified that most existing training focused on a single infectious agent, rather than an all hazards approach encompassing a broad range of organisms and instilling the skills to access resources on multiple platforms to access knowledge for a yet unknown organism. The assumption of the PSD Training Module is that by training workers to use existing PSD resources they will more likely contribute to the development and implementation of infectious disease prevention and control activities, understand the logic for the control measures implemented in their workplaces, and identify gaps in prevention programs. They will also be able to search for information on organisms they had not planned for, once they are identified, during a just-in-time situation. The curriculum uses interactive training techniques to teach workers how to research the characteristics of infectious pathogens that they may be exposed to and how that information may be used to develop site specific risk assessment and worker protection programs, including but not limited to personal protective equipment and decontamination. The PSD module can be conducted as a standalone 4-hour program or integrated into existing programs.

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ID

Exploring Interactive Classroom Techniques

Joan Staunton, *NJ-NY Center/ NYC District Council of Carpenters Training Center*

Lisa Bethea, *NJ-NY Center, NYC District Council of Carpenters Training Center*

As adult educators, we know that adults need to be actively engaged in the learning process (Malcolm Knowles, *Principles of Adult Learning*). Traditional teaching methods, such as a lecture format, are not always as effective as more interactive methods. This workshop will explore various interactive classroom techniques that encourage more student involvement. Popular formats such as think-pair-share and jigsaw learning groups will be included. These and other activities will allow workshop participants to work on their own, in pairs, small groups and in whole group discussions giving them experience with a variety of instructional methods.

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HW/ER • TA

Disaster Rapid Response: The Experience of ICWUC, NIOSH, and Fe y Justicia in Houston, TX

Luis Vazquez, *ICWUC CWHSE*

By the end of this session, participants will be able to list at least 3 elements to rapidly conduct a bi-lingual Hurricane Response Train-the-Trainer (TTT) program shortly after a storm. As Hurricane Harvey approached the Texas coast, the International Chemical Workers Union Council (ICWUC) contacted Consortium partners at National COSH, and affiliate organization Fe y Justicia Workers Center in Houston, offering to train workers, volunteers, and community members participating in recovery efforts. A core principle of ICWUC is to develop training skills of members, utilizing a TTT model, so a bi-lingual English/Spanish TTT program was proposed. Hurricane Harvey provided National COSH an opportunity to build organizational capacity within Fe y Justicia and helped coordinate with ICWUC on the numerous logistical elements required to conduct the TTT. Fe y Justicia recruited trainees, identified a training location and lodging, identified English/Spanish translators, and conducted a community needs assessment survey. National COSH Instructors who had participated and lead an ICWUC Spanish language Disaster TTT program a few months prior to Hurricane Harvey were identified to deliver the TTT. ICWUC provided the program agenda, bi-lingual training materials, PPE, and other coordination through their NIEHS disaster grant. The three-day bi-lingual TTT prepared trainers to independently conduct training, delivering the ICWUC Disaster Awareness Programs and using the Spanish and English NIEHS-produced booklets on hurricane, flood, and mold response/ remediation. Breakout groups of mono-lingual Spanish and English speakers were utilized, and a few joint sessions were conducted using simultaneous translation. Within days of the Houston Harvey disaster TTT program, Fe y Justicia trainers began conducting Disaster response and mold awareness workshops in the Houston area.

ROUNDTABLE SESSIONS:

Biosafety and Infectious Disease

30

ID

Biosafety and Infectious Disease Training Initiative (BIDTI) Challenges and Lessons Learned From Training Older Populations

Aurora Le, *BIDTI/Indiana University Bloomington*

Jocelyn Herstein, *BIDTI/University of Nebraska Medical Center*

Objective: The Biosafety and Infectious Disease Training Initiative (BIDTI) is an awardee of the Infectious Disease Response (IDR) program whose target populations include: waste handlers, first responders, the death care sector, occupational safety and health practitioners, custodial and environmental service workers, transport workers and vulnerable populations. Generally, these populations tend to be older, working class individuals who are not extremely tech savvy or comfortable using advanced technologies (i.e. online platforms) as part of the training, despite increased emphasis on use of interactive technologies for education. This session will discuss the best mediums and strategies to deliver training and education when working with populations of these demographics. Moreover, it will discuss how trainers can gain buy-in and trust when conducting these trainings, especially when the trainer is a young professional, not affiliated with the organization receiving the training in any way, and is coming there for the first and maybe only time. Discussion topics: What are the best strategies you have found to train an aging worker population? What strategies do you utilize to conduct trainings when the organization's facility is resource limited in technologies (i.e. no projector or computer)?

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TA

Infectious Disease Response Training for Nursing Staff

William Severson, *DIDRT/University of Louisville Center for Predictive Medicine*

Diane Riff, *DIDRT/University of Louisville School of Nursing*

The University of Louisville (UofL) is a member of The Duke Infectious Disease Response Training (DIDRT) Consortium with the objective to train first responders, healthcare/laboratory professionals, custodial workers and air transport personnel. An Operations-level DIDRT curriculum was designed to prepare Nurses and Nursing Students for safe work in infectious agent exposure settings. The four-hour course promotes worker understanding and knowledge of hazard recognition, potential exposure risks and proper precautions for avoiding exposure, as well as safety standards and guidelines. We established a collaboration between the DIDRT consortium and the UofL School of Nursing in May 2017. Nursing faculty successfully completed this Operations level training in September 2017, earning continuing education credits through the American Nurses Credentialing Center. In October 2017, over 100 School of Nursing Junior Undergraduates utilized the DIDRT Learning Management System (LMS) and DIDRT hands-on training as preparation to be frontline responders in epidemics. The students were required to demonstrate their ability to execute necessary work practices through clinical sample collection from SIMS manikins using both airborne respirator and contact enteric precautions. For the hands-on training, four sessions of five groups of five or six students were partnered with a Nursing instructor and a UofL DIDRT team member. The participants were evaluated in three exercises beginning with a new way to doff gloves, followed by two different clinical sample collection scenarios. To document participant's improved understanding of the subject matter over the course of the training, we used pre- and post-course assessments in the DIDRT LMS. At the conclusion of this course, nursing students received a certificate of completion to add to their nursing portfolio. The objectives of this session are to demonstrate, through audience participation, showing the nursing staff worker population: 1) a new way to doff gloves using GloGerm to simulate the presence of infectious agents, 2) how to choose and don the appropriate personal protective equipment (PPE) and collect clinical samples from a SIMS manikin using both airborne respirator and contact enteric precautions, and 3) don and doff the required PPE for entering the room of a suspected or confirmed patient with Ebola. This didactic and hands on content and approach was specifically designed for nurses and incorporates advanced learning techniques and adult learning approaches.

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ID

Customizing Operations Level Training for Multiple Target Audiences

Diann Stedman, *DIDRT/George Mason University*

Julie Zobel, *DIDRT/George Mason University*

When rolling out a new training program, it is difficult for trainers to know how the program will be received and whether or not they have accurately gauged the needs of the intended audience. Course evaluations, student feedback (both during and after the course), and informal conversations with the trainees' leadership team provide essential information for adapting and optimizing a course for a specific or targeted audience. This information, along with the instructor's observations, can be used to significantly refine and strengthen course content and delivery in a few training cycles. This workshop will discuss techniques and strategies for adapting operations level training to a new target audience, and the challenges presented by multiple target audiences with divergent backgrounds, experience levels, and job duties. The impact of agency leadership, limitations of the training facility, class size, and feedback from trainees will be discussed. The presenters will share training strategies and lessons learned, and lead an interactive group discussion.

Workshop Block 4

Thursday, May 10 | 3:00 - 3:45 p.m.

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HW/ER • TA

Workplace Violence: Utilizing Response Clickers in Resilience Training

Mike Fray, *UAW*

Sherry Kraft, *UAW Local 245*

A System Safety training module was developed by the UAW which uses root cause analysis, case studies and small group activities to reduce risk. Participants in the class gain an understanding of the hierarchy of controls and methods to perform accident investigations. This training was initially focused on mechanical physical hazards in an industrial setting but was modified to encompass work place violence scenarios and fatalities suffered by UAW members in the service sector. The training module will be described in detail and evaluation results from multiple session will be presented. Audience response clickers were used to provide real time feedback to presenters and show post training knowledge gains. UAW will present plans to incorporate resiliency modules into this training. This will deepen participants understanding of the role stress plays in work place violence and give insights into prevention methods.

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EL

Classroom Applications of E-Quiz Software

Richard Lindsay, *IBT Worker Training Program*

William Botos, *IBT Worker Training Program*

Evaluation of student comprehension is an important part of any training. The IBT Worker Training Program has experimented with using Kahoot, an online quiz program, in some NIEHS classes. This program allows students to use their smartphones as buzzers and compete against other students in the class for review questions. This program also allows jumble, discussion, and instant surveys of participants. This program is used in classes taught by the IBT Worker Training Program to help engage students, as well as provide the instructor the opportunity to review the course material and identify any learning deficiencies during class. This program allows for instructors to create their own questions, so can be modified to apply to any curriculum.

Using Brain Science to Present Better Training

Barbara McCabe, *IUOE National Training Fund*

Tim Manning, *IUOE National Training Fund*

Regardless of the method used; classroom lecture, webinar, e-learning, blended learning, and so on, and no matter what the topic, the goal of training is to communicate a message that engages the students, makes it stick in their minds, and persuades them to take action (hopefully the correct one). To help trainers create presentations that can accomplish this, it is helpful to understand how their students' brains work. If you want to be more persuasive, memorable, and engaging presenter/instructor, you need to take advantage of understanding how the brain learns and how it applies to workplace learning. This session will discuss the most important aspects of the science of how the brain works in relation to adult learning and how you can apply this understanding when developing your classroom presentations, hands-on activities, and some e-learning methodologies.

Donning and Doffing Personal Protective Equipment Using an Approved Low-Output Ebola Checklist: A Simulation Experience

Lisa McCormick, *Deep South Consortium/University of Alabama at Birmingham*

Andres Viles, *Deep South Consortium/University of Alabama at Birmingham*

In 2015, six first responders in Birmingham, Alabama were exposed to an individual exhibiting signs and symptoms of the Ebola virus disease (EVD). Although the Centers for Disease Control and Prevention (CDC) revised recommendations for hospitalized patients under investigation for EVD in July 2014, a need exists to extend recommendations to non-hospital workers and disseminate information to individuals with limited access to training. The Deep South Biosafety Worker Training Program (WTP) partnered with the University of Alabama at Birmingham Summer Health Professions Education Program (SHPEP) to train future health professionals to safely respond to infectious disease threats in a simulated environment. SHPEP is a free summer enrichment program focused on improving access

to information and resources for individuals interested in the health professions. Many SHPEP program participants come from racially/ethnically underrepresented group in health professions, disadvantaged backgrounds, or have a strong interest in working with an underserved population or community. Participants in the SHPEP program also intend to enter various health care professions including nursing, physician's assistant, dentistry, medicine, occupational therapy, and optometry. Through this experience, participants received hands-on experience donning and doffing low output personal protective equipment (PPE) using a UAB Hospital approved checklist while receiving coaching and feedback from experienced health care professionals. This simulation also allowed participants to work in inter-professional teams to develop effective teamwork and communication strategies. This presentation reviews how simulation was used to train future health care workers on proper PPE protocols and benefits of inter-professional training.

Fluid Training Methods

Lisa Orloff, *NJ-NY Center/World Cares Center*

The goal of this session is to encourage fluid thinking and delivery that meets the need of our ever-changing training environment. The session will start with an introduction of participants and their current training methods and the "pain points" associated with them. We will transition into a presentation of various training methods and tools including self-directed learning, experiential learning, and transformational learning. Participants will engage in a discussion on applicability, efficacy, ease of use and affordability of each approach. World Cares Center will present the various training methods it utilizes and will encourage participants to discuss their successes and challenges in disaster training. The session will end in a group evaluation which will be aggregated and shared via social media.

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LS

Strategies for First Source Hiring Agreements

Art Taylor, CPWR/JobTrain

First source agreements have been a common strategy of public policy for decades. These agreements were designed primarily to connect dislocated workers and individuals with barriers to employment to opportunities to access entry-level jobs on projects in their communities and in some instances region-wide. While many cities and communities have rebranded the First Source policy practice with terms like: Priority Hiring, Workforce Participation Requirements, and Community Benefits, new strategies to achieve that end have changed. This workshop will address strategies for how workforce development programs can engage business owners and stakeholders involved in these agreements, strategies for structuring agreements, and the relationships required to successfully implement these agreements. Participants will also explore best practices and strategies to utilize in partnering with union pre-apprentices and apprenticeship programs in the development of hiring agreements, and how best to position their organization/programs as a source for hiring needs.

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HW/ER • EL

Interactive Games and Group Activity Scenarios

Larry Wong, WRUC/University of California, Berkeley Labor Occupational Health Program

Eric Brocales, WRUC/University of California, Berkeley Labor Occupational Health Program

David Moore, WRUC/University of California, Berkeley, Labor Occupational Health Program

Nina Townsend, WRUC, University of California, Berkeley, Labor Occupational Health Program

Learning retention is vastly improved by up to 90 percent if students immediately apply the recently learned concepts. For UC Berkeley LOHP Hazwoper training classes we use competitive interactive games and afternoon group activity scenarios to tie together health and safety concepts. Competitive interactive games are used to review health and safety terminology and general safety concepts. Scenarios are assigned to groups of 4 or 5 students. Each group is requested to address the health and safety issues which are outlined in the scenario and at the end of the activity each group presents their collaborative efforts to the entire class. The group activity encourages all member of the group to participate in the presentation. Using scenarios which are relevant to the students' job assignments also allow more experienced students to use their knowledge and share their many years of on-the-job experience to address real world health and safety issues.

Workshop Block 5

Thursday, May 10 | 4:00 - 5:30 p.m.

40

TA

Falls - Let's Stand Down!

Tina Crum, IUOE National Training Fund

Ronald Place, IUOE National Training Fund

As part of the 2018 National Safety Stand-Down fifth annual event the week of May 7-11, the IUOE National Training Fund is presenting a session on Falls in Construction. In spite of the media and OSHA's focus on preventing falls, falling remains No. 1 on OSHA's Top 10 most frequently-cited workplace safety violations and continues to be one of Construction's Fatal Four. The NTF will focus on suspension trauma and falls from heavy equipment and vehicles. It will demonstrate personal fall arrest systems (PFAS) with suspension trauma straps, and users will have the opportunity to inspect various PFAS components. Workers need to understand that, if they do fall, they could experience orthostatic intolerance, venous pooling, loss of consciousness or mobility, shock, or other injuries; all of which could lead to death. Through training, appropriate PFAS, and a proper PFAS fit, workers can protect themselves from these consequences. Fall protection and fall protection training are important, because falls from construction equipment can cause serious injuries. The larger the equipment, the greater the fall distance, and the more severe the injuries. Many falls occur because of oil and mud accumulation, ice and snow in cold weather, and human tendencies to jump or step long reaches. The NTF will conduct a toolbox talk on the safe procedures for getting on and off equipment.

41

HW/ER

Mindfulness Based Stressed Reduction (MSBR) Techniques for Disaster Responders

Judy Daltuva, UAW/University of Michigan School of Public Health

Katherine King, UAW/University of Michigan School of Public Health

Mindfulness Based Stressed Reduction (MSBR) techniques have been used in a variety of settings with groups as diverse as military veterans, first responders and nurses to improve resiliency, help with stress reduction, and generally increase the sense of well-being in individuals. Work can be stressful and disaster work can be very stressful. When working in stressful situations we often don't take care of ourselves, not only physically, but also mentally. Our schedules are altered, and we may not have time to get enough sleep, may not have access to healthy food and our immune system may become

compromised. Our bodies and our minds suffer. We cannot help others if we are unhealthy, if we are stressed out. This session will explore techniques used to assist with stress reduction with emphasis on mindfulness meditation. Attendees will participate in a guided meditation and learn the importance of holding space in their lives for themselves, so they can better care for those in need. Lessons learned from deploying these techniques during a UAW training will be described and future plans for using web based meditations and self-care prompts delivered by text messaging will be described.

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EL

Expanding Infectious Disease Outreach and Training

Jason DeSilva, *LIUNA Training and Education Fund*

Dan Brearley, *LIUNA Training and Education Fund*

Workers in a broad range of industries face potential risks of contracting infectious diseases. Health care workers possibly encounter the greatest risk, but others can be infected by pathogens through common tasks such as cleaning public areas and restrooms, stripping and cleaning linens, trash disposal, and handling mail or packages. This workshop looks at ways to reach diverse worker populations who may face infectious disease risks and means to provide them with information to help them protect against such hazards. Workshop participants will identify different industries and workers who face infectious disease risks. In small groups participants will consider barriers to training these at-risk workers and develop potential opportunities and actions to overcome those risks. Workshop leaders will demonstrate two tools that LIUNA Training has used to reach out to different worker populations: marketing through worker trusted affiliations and e-learning to overcome barriers. Finally, participants will discuss the role of leadership and how to maximize their involvement to promote worker training. By the end of the workshop participants should be able to: identify underserved and hard to reach workers with job tasks that put them at risk of contracting infectious diseases, describe barriers to reaching and training at-risk workers, participate in demonstrations of two ways to reach underserved, at-risk workers, develop ideas on how to engage trusted leadership in efforts to reach and train different at-risk populations.

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HW/ER

Safety Planning Training: Empowering Workers and Building Management Support

Thomas Estabrook, *TNEC-CSEA/University of Massachusetts Lowell*

Bridget McGuiness, *TNEC-CSEA/University of Massachusetts Lowell*

Empowering workers in workplace safety involves engaging them and supervisors in assessing the hazards in their workplaces and planning ways to control those hazards to prevent injury and exposure to harmful substances. Gaining management backing is a vital component of the worker empowerment process, as supervisors and managers are at the interface between upper management and workers in hazardous situations. Trainings on the safety planning process are a way of building worker participation and management commitment. In this workshop, participants, working in small groups, will: 1) examine the components of building an effective safety program (including worker participation, management commitment, worksite hazard mapping, Job Hazard Analysis, incident investigation, etc.); 2) share experiences and insights from training supervisors and managers, and reflect on the importance of these experiences for empowering workers; and 3) present findings to the larger group. This workshop draws from experience we have gained delivering specialized safety planning trainings for supervisors and managers, as well as routine trainings on HAZWOPER, OSHA-10, confined space entry, and disaster preparedness.

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HW/ER • ID • ST

RF Radiation Awareness Training

Gary Gustafson, *CPWR - The Center for Construction*

Research and Training

Eileen Betit, *CPWR - The Center for Construction*

Research and Training

This presentation will introduce participants to CPWR's training program designed to reduce the risk for occupational exposure associated with working near RF radiation emitting devices in construction. Workers who perform tasks on rooftops, sides of buildings, news gathering trucks, and other structures where cellular antennas and other RF (radiofrequency) generating devices are present may be at risk of exposure to hazardous levels of RF radiation. The RF Radiation training is intended to raise construction contractors' and workers' awareness of the potential risk, how to identify the hazard, and steps to work safely. Participants will not only learn about the RF Radiation training materials but will be exposed to all the social marketing elements designed to raise awareness to this hazard.

45

ST

Bakken Oil Emergency Response Training

John Malool, *NJ-NY Center/Rutgers School of Public Health*

This session will provide attendees with an understanding of the hazards of Bakken crude oil and the emerging issues dealing with crude oil train emergencies. Utilizing case studies of various emergencies in North America attendees will learn the hazards of crude oil, difficulties in transportation, and the importance of emergency planning. Participants will engage in the exercises that are presented in the class, and will be able to understand how to include these important case studies into existing or new curricula. The Bakken Oil curriculum includes: Introduction to Crude Oil Emergencies Preparing for Crude Oil Emergencies Rail Cars and Crude Oil Emergencies Chemical and Physical Properties of Crude Oil Air Monitoring at Crude Oil Emergencies Emergency Scene Assessment Strategy and Tactics for Crude Oil Emergencies Fire Suppression Considerations The Bakken Oil Emergency Response class is an 8-hour program.

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ID

Break The Ice and Energize Your Classes

Lula Odom, *ICWUC CWHSE*

Objectives: Discuss and discover how to effectively use ice breakers, share and collect ice-breaker ideas to use for small to large meetings, and create a collection of best ice-breaker ideas that anyone can use. Have you ever started a class by using an ice-breaker that falls flat and leaves you scrambling to find a way to redeem your failure to connect with your audience? If you have, then you know how difficult it may be to overcome the setback and move your meeting forward. Ice breakers are excellent tools that can be used in a variety of ways such as jump starting a meeting, introducing people to each other, stimulating conversation and creative thinking and setting the tone for the meeting. There are other times when the energy must be pumped up in the middle of your meeting and you need to have a way to reenergize the participants. However, the right ice-breaker and energizer is critical to its success. It is important to have an arsenal of ice breakers and energizers in your trainer tool-kit to add excitement and desire for the participants to want stay to the end of your sessions. Attend this interactive workshop to gain new experiences in using ice breakers and don't forget to bring some of your own to share with the other participants. Learning can be fun and filled with energy. Warm up your next teaching experience by starting with a great ice-breaker to BREAK THE ICE.

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ID

Effective Communication Tips and Techniques for the Trainer and Strategies to Deal with Students Who Know-It-All and Need to Prove It

Aaron Ondo, *West Virginia University - Institute for Labor Studies and Research*

A trainer's ability to effectively deliver knowledge and information to students is not what separates good and bad trainers, rather it is the student's perspective of that ability, as evidenced by favorable evaluations that makes a trainer—a good trainer. Applying key effective communication concepts as part of various teaching techniques helps students connect and learn. Highly rated trainers connect and relate with their students, or at least make them feel connected and part of classroom discussions. In the age of Google and other Internet search engines, students have immediate access to a world of information and as a trainer everything you say can—and will—be factually checked in minutes, or even seconds. The need for accuracy of facts, classroom calculations, compliance standard references, and even experiential stories is paramount. All it takes is one seemingly false or imprecise statement and a trainer's credibility can be quickly lost. Despite a trainers' best intentions to connect with students, some students have a need to prove their worth by trying to answer every question or explain their perspective during classroom discussions. Such students can be difficult to deal with for both the trainer and for the other students with differing perspectives. This interactive workshop will incorporate effective communication tips and techniques; provide specific examples of how to integrate Google searches and cellphone applications into existing training; and describe various methods a trainer can use to appropriately and professionally deal with problematic know-it-all or 'been there, done that' students.

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LS

Evaluation and Selection of Suitable Training Candidates

Montgomery Proffit, *OAI, Inc.*

Cleophus Lee, *OAI, Inc.*

One of the most challenging aspects to any workforce training program is the identification of suitable candidates for both training and employment. Without suitable candidates, workforce training success is virtually impossible. Thus, the need for a trainee pre-screening process through Try-outs. Try-Outs is a competitive two-day intensive workshop during which candidates are evaluated to determine who is committed to meeting the challenges of growing

their skills and entering full-time employment. A team of evaluators comprised of staff and volunteers from CBOs, social service agencies, employers and former graduates will jointly choose trainees from the pool of Try-Out candidates. During Try-Outs, candidates are evaluated for punctuality, physical fitness, problem solving and critical thinking, writing, math, work ethic, positive attitude, leadership, and teamwork. The purpose of this workshop is to show the value of an evaluation process in identifying suitable training candidates before granting program admission. This workshop will: introduce participants to the concept of a trainee pre-screening process, explain the benefits of workforce training programs incorporating a trainee pre-screening process, outline activities to be used during pre-screening process, and involve participant hands-on demonstration of Tryout group exercises.

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HW/ER • TA

Effective Safety and Health Training for Workers and Communities Involved in Storm Recovery

Mitchel Rosen, *NJ-NY Center/Rutgers School of Public Health*

Jonathan Rosen, *National Clearinghouse for Worker Safety and Health Training*

It is important for the NIEHS WTP community to build on its experience in responding to Irene, Katrina, Sandy, Harvey, Maria, and other flooding events. Protecting workers, volunteers, and community members from injury and illness related to gutting, mucking, and mold removal is a crucial task. Some of the challenges include: 1) lack of national standards, 2) access to the people doing the work, and 3) ability to deliver effective training to large numbers of workers, homeowners, and volunteers. Exposures may include unsafe buildings, live electricity, gas, and oil spills, hazardous materials such as carbon monoxide, asbestos, lead, black water, and mold. Safety hazards may include trips, slips, and falls, injury from misuse of tools and equipment, being struck by vehicles, and others. Some volunteers work for only one day which makes providing proper training especially difficult. In this workshop we will review strategies used by the New Jersey/New York Consortium to provide real time training with support from the Clearinghouse. Participants will have an opportunity to share their own experiences and ideas on how to confront these challenges in their communities and also learn about the existing resources from the Clearinghouse and NIEHS grantees.

ROUNDTABLE SESSIONS: Refreshers

50

ID

Rewriting the Annual Hanford 8-Hour HAZWOPER Refreshers

Michael Crockett, *ICWUC DOE Hanford*

Terry Whitcomb, *ICWUC DOE Hanford*

By the end of this Roundtable discussion, participants will be able to list at least 3 elements to rewrite annual refresher curriculum. The Department of Energy refresher modules are rewritten annually using the NIEHS minimum criteria document, OSHA/DOE Objectives and ISMS system. Past refreshers are critiqued for what was successful and material to be refreshed. Our goal is to challenge the students' knowledge about safe work practices when working in a very hazardous environment and write modules for these hazards. The Hanford trainers discuss and write new modules to meet these requirements. Modules are chosen that are interactive, challenge the students' knowledge, identify hazards, enforce good work practices, use students' past experiences, lesson learned and bring in new ways to control hazards. Classroom techniques include limited power point, videos and other visual aids. Feedback is included to evaluate how the work was performed and covered as a group report back. Hands on activities use the HAMMER facility's 43 acres of props. Students are divided into 4 groups and visit a prop. Students are given a set questions on each scenario that they keep until the end of the module followed by a group report back to reinforce good practices. The first time we use the new curriculum is considered pre-testing and allows further adjustments done during practice on a setup day before the next class. Trainer questions include how do we: Get the students to know where the module is going? Create activities that attain the performance objectives? Create activities that refresh safe work practices? Evaluate the student performance? Provide feedback to let the students know they got it right?

Development and Implementation of Modular Refresher Programming

Christopher Hanson, *Midwest Consortium/University of Illinois*

A summary of feedback at refresher training showed that participants wanted more content directly relevant to specific workplace hazards. In response to this feedback for more tailored refresher programming, the Midwest Consortium has developed guidance on using reconnaissance and needs assessment that provides the basis to design a program by selecting topics from a flexible menu to better meet the needs of trainees. **Workshop Objectives:** Participants will learn about the process of using evaluation feedback to identify module topics, and development of evaluation instruments for a flexible program. **Structure:** Small groups will review participant and facilitator material for frequently used modules. Usage experience will be shared and comments from participants will be encouraged. The evaluation approach will be critiqued. **Discussion topics:** What are the challenges to constructing tailored refresher program content? What are efficient approaches to document content selected and delivered? How can hours of training completed before classroom training be documented? Is quality assurance guidance needed for training conducted at the worksite using site-specific drills or exercises?

Keeping Hazardous Waste Refresher Training Fresh

Eugene Sabitoni, *LIUNA Training and Education Fund*

The Minimum Criteria Document requires annual hazardous waste instructor refreshers. New information on hazardous waste worker training is needed to keep instructors up-to-date and to offer them ideas and options for training. A key question that many instructors face is how to make Refresher training interesting yet meet the requirements of CFR 1910.20. This workshop considers how grantees can provide hazardous waste instructors with training and information that they can use to keep their HW Refresher courses fresh. One approach, without having to revise curricula on an annual basis, is to incorporate ideas into Instructor Refresher Training. In roundtable discussions, participants will share what they have done to bring instructors up to date and techniques that instructors use to incorporate the new information into their HW Worker Refresher courses. Roundtables will first identify instructor refresher training topics and activities. Then participants will consider how these, or similar topics, can be integrated into the worker refresher courses. Each roundtable will share their ideas and the whole group will offer feedback. By the end of the Roundtable, participants will be able to: identify topics to include in HW Instructor Refresher training, suggest ways to teach instructors about the new topics, identify new topics that instructors can address in HW Worker Refresher courses, discuss how new topics can fit into existing Refresher training, and suggest training activities that incorporate new information, but also address critical information and skills that workers need to review.

Workshop Block 6

Friday, May 11 | 8:00 - 9:30 a.m.

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TA

Worker Empowerment and Site Control Plans

Richard Crowe, *IBT Worker Training Program*

This presentation is designed to provide students an in-depth understanding of a site control plan, while also integrating all of the topics covered in the HAZWOPER course. Participants are given information about a chemical, and develop their own scenario. They use the information provided to identify the substance(s) present, and determine the appropriate response procedures – PPE required, evacuation distances, and other precautions that need to be taken. This exercise gives the participants the opportunity to integrate all the topics they have studied in a HAZWOPER class in a low-tech, interactive environment, while empowering workers with a deeper understanding of the planning that goes in to hazardous materials cleanup response operations. During this presentation, the instructor will explain the concept of this exercise, with emphasis on how it relates to worker empowerment and all topics covered in the HAZWOPER course. Afterwards, the participants will break into small groups and perform the activity.

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TA

Chemical Resistant Glove Training Techniques for Spanish and English Speakers

Marisela Lopez, *UAW*

Brian Wiggins, *UAW Local 2367*

Chris Lutz, *UAW Local 699*

Grant Grace, *UAW*

To address exposures among pesticide applicators in Puerto Rico, the UAW developed a hands-on Spanish Language exercise in personal protective clothing. The training module was adapted to the Industrial Emergency Response training setting and has been useful in hazard communication classes among industrial workers, where often time the one-size-fits-all mantra is common place. UAW members in the auto parts sector have experienced excessive hand/dermal exposure from isocyanates, methacrylates, and epoxies. A recent study of a UAW cohort (Pinkerton 2016) demonstrates the need for increased protection to prevent rashes, asthma and cancer. This session will include a discussion of industrial workers experience with sub-par PPE and demonstrate the hands-on exercises used for training worker on the concepts of permeation and degradation and the proper selection of chemical resistant gloves. An e-learning component (Internet resources for glove selection guides) will be included in the class.

55

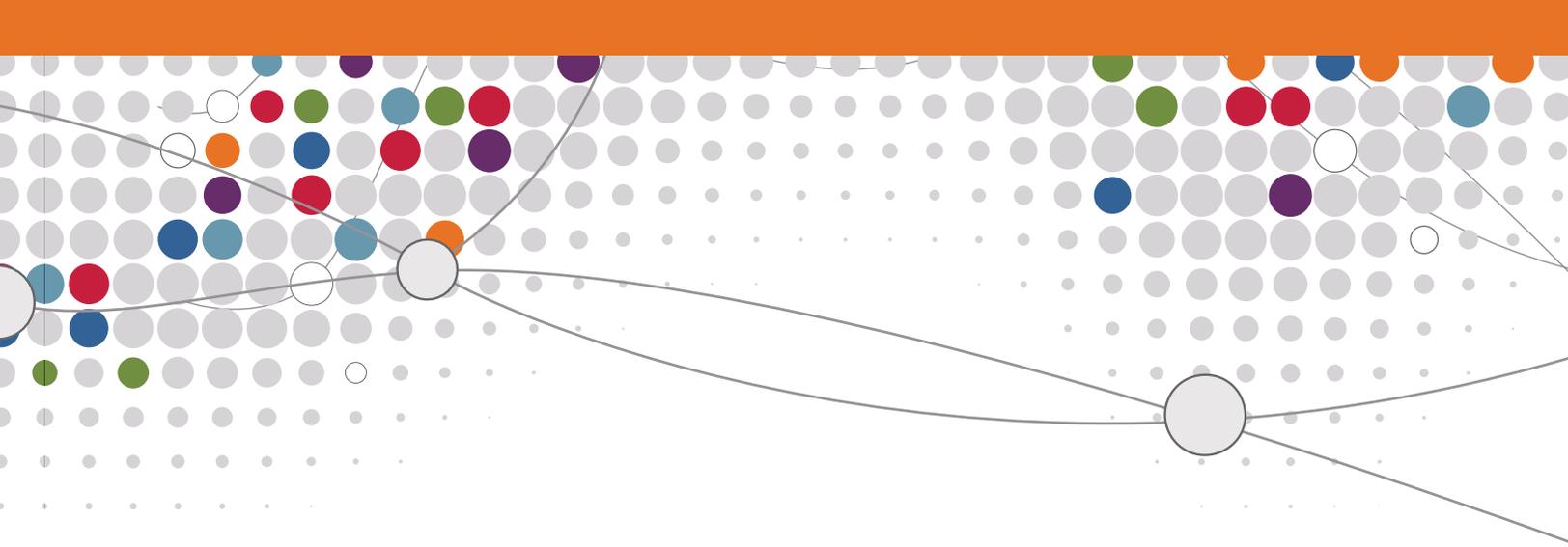
TA

Foundations for Safety Leadership for DOE (FSL4DOE)

Gary Gustafson, *CPWR - The Center for Construction Research and Training*

Steve Surtees, *CPWR - The Center for Construction Research and Training*

The CPWR Foundations for Safety Leadership (FSL) for DOE training course introduces workers at DOE facilities, particularly those with supervisory responsibilities, to critical safety leadership skills and provides specific actions they can take to be an effective safety leader and improve jobsite safety climate. The training was developed by



construction industry experts, including experienced OSHA outreach trainers, construction workers, safety and health professionals and leadership specialists. Participants will explore foundational material on what safety leadership is and why it's critical to improving jobsite safety climate. In addition to learning the foundational material, participants will have the opportunity to apply their new safety leadership skills to real-world work site scenarios found at DOE facilities.

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HW/ER

Air Monitoring Training Workshop

Kenneth Oldfield, *Alabama Fire College*

David Moore, *WRUC/University of California Berkley/Entrinziic Global Solutions LLC*

The Air Monitoring Training Workshop includes discussion and hands-on exercise that can aid in teaching the use of air monitoring equipment in hazardous waste, emergency response, and confined space work situations. There will be a brief presentation which describes the basic operation of common direct-reading instruments like the multi-gas meter, the photoionization detector, and colorimetric tubes. Instrument calibration and the use of relative response factors when measuring gases other than the calibration gas will be demonstrated. We will discuss application of Protective Action Criteria in the interpretation of readings for the protection of responders, workers, and the community. A hands-on exercise will let the participants see the principles in action.

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LS • ID

Microlearning Delivering Delightful and Delectable; Bite Sized Chunks of Learning

Sean Phillips, *OAI, Inc.*

Microlearning is a piece of learning content that can be consumed in no more than five minutes and is designed to meet a specific learning outcome. It can be presented over multiple media (text, infographic, mini e-learning, video) that specialize in creating experiences to help trainees retain learning content. Studies show that typically, people will forget half of what they learned in class within the first 24 hours and almost everything in a matter of days. The problem of forgetting is disrupted when trainers implement spaced learning and nearly obliterated when moments of repetition are added. Microlearning allows trainers to create both spaced learning and moments of repetition to realize effective learning that sticks. ECWT Chicago has designed and implemented microlearning content to augment its Blended Learning program for power skills/soft skills instruction. The flexibility of microlearning has allowed ECWT trainees to access short burst of learning content in their moment of need. The presenter will define microlearning using examples, discuss how microlearning lends itself to an increase in learner retention, and demonstrate how to develop microlearning content for learning programs.

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ID

Providing Instructor Feedback

Bernadette Rivera, *LIUNA Training and Education Fund*

Cindy Herleikson, *LIUNA Training and Education Fund*

Quality feedback plays a key role in the development of instructors' skills at all stages of their careers. It accelerates the effectiveness of new instructors and has a direct correlation to the ongoing success of more experienced professionals.

This workshop will help instructors learn how to provide constructive and meaningful feedback to their peers. Participants will practice teaching observation, notetaking and offering targeted, constructive feedback. Participants will consider what to observe, identifying the most important points, and describing and interpreting actions and behaviors and their impact on student learning. Participants will practice how to use that information to provide peer-to-peer feedback in a way that supports the ongoing professional growth of their fellow trainers.

This interactive workshop will use group discussion, demonstration, observation, and practice to build feedback skills. Participants will engage in think-pair-share activities, small group activities, and role playing.

By the end of the workshop participants should be able to:

- Identify instructor observation criteria
- Learn note taking skills
- Identify key points based on observation and interpretation
- Identify and practice appropriate feedback techniques

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ST

The Rise of Energy Storage Systems (ESS)

Paul Rogers, *IAFF - FDNY*

The rise of green energy is resulting in increased demand for electrical power. This increase in electrical power demand is requiring alternative methods of electrical generation and storage. Energy storage systems (ESS) are proving to be an economical method of storing power. These systems can now be found in residential, commercial and industrial applications. At the same time, firefighters and other first responders need to be prepared to respond to fires and other emergencies involving ESS. This presentation will discuss and examine concepts and considerations for the workers and responders who are called to an ESS incident, and how these can be incorporated into an ESS training program.

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HW/ER • TA

Integrating the NIEHS Disaster Worker Resiliency Training Program Into Disaster Preparedness and Response

Jonathan Rosen, *National Clearinghouse for Worker Safety and Health Training*

Arturo Archila, *USW/Labor Institute*

NIEHS WTP grantees have been active in multiple disasters including 9/11, Deepwater Horizon, Katrina, Sandy and in 2017 Harvey, Irma, and Maria. Research has documented mental health effects including major depression, generalized anxiety, and post-traumatic stress disorder impacting as many as 40 percent of disaster workers, volunteers, and home owners. Mental health effects can be disabling and impact workers' families. NIEHS and SAMHSA received funding from the BP Deepwater Horizon settlement to develop a DWRT. Sister programs were developed for Supervisors and Care Providers. The goal of the four-hour DWRT program is to prepare disaster workers to recognize the signs and symptoms of disaster work related stress and trauma, avoid post-traumatic stress disorder, make use of organizational and community support resources, and build resilience. The training materials are in English and Spanish and include a participant and instructor guide and a PPT set. There are 8 activities, mainly employing the small group activity method. We will also discuss the importance of maintaining a safe and healthy work environment, organizational responsibilities, and approaches to countering blame the worker, behavior based safety programs. Trainers will also discuss how to use the resiliency training materials in their programs.



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HW/ER

Constructing Models as a Communications Exercise in ICS, Hazardous Materials Operations, and Emergency Response Trainings

Ron Schuetz, *WRUC/S&S Safety*

Thomas Estabrook, *TNEC-CSEA/University of Massachusetts Lowell*

Roy Stover, *Alabama Fire College*

This workshop considers the critical role of communication during hazardous waste operations and emergency response activities, and the Incident Command System. In any good safety management system, the way tasks are communicated between team members is critical. Breakdowns in communication could have catastrophic results. Communication challenges can arise from the physical limitations of communication equipment or PPE, as well as from language, educational or cultural barriers, among other things. In this workshop, participants will construct/reconstruct models, such as Legos and Tinkertoys, using direct communication or walkie-talkies, to experience first-hand some of the challenges inherent in communicating information during a response activity. Participants will then share ideas about how to improve communication systems in real-life hazmat and emergency response situations, as well as where and how trainers might use these model construction activities in trainings.

ROUNDTABLE SESSIONS:

Program Development/ Processes

62

ID

Tools and Tips for Proficiency Assessment of Trainees in WTP Program Courses

Salvatore Cali, *OAI, Inc.*

The purpose of this workshop is to exchange practical methods for observation and tracking of trainee proficiency in skills that we teach. Most trainers find proficiency assessment of trainees both rewarding and challenging. Many of the best assessment techniques, such as direct observation of demonstrable skills, present challenges in terms of time and record-keeping. During the Fall 2017 WTP Awardee meeting, we reviewed various sections of the NIEHS Minimum Health & Safety Training Criteria document for purposes of updating. During our Proficiency Assessment Work Group discussions, it became apparent that we (participant training providers) are independently developing and using a number of tools and tips that facilitate the proficiency assessment of trainees, especially in regard to demonstrable skills. We discussed and exchanged some ideas about a variety of assessment approaches, including both traditional and enhanced technology tools. These approaches vary from simple checklists to cell phone applications and digital recording technology. This workshop will build on that discussion. It will include presentations, by participants, of selected tools used to facilitate observation and tracking of trainees. The success of this session will rely on the participation of training providers who are willing to share and/or demonstrate some of their tools. Discussion will include time-saving ideas and tips so that the labor-intensive process of trainee evaluation is more efficient and interesting. We will also discuss the advantages and drawbacks of some techniques. Please contact the workshop organizer, Salvatore Cali, at scali@oaiinc.org, if you have tools and ideas to share.

Proper Instructor Selection, Development, and Mentoring

Jason Frosch, *Nova Southeastern University Project SEAMIST*

Sean Brady, *Nova Southeastern University Project SEAMIST*

In order to maintain a stable and progressive safety program, there should be a system to select, develop, and enhance the trainers and their abilities. There are several parts that come together to make a successful safety training program; the material, the classroom, the support staff, and the trainers. In order to maintain a stable and progressive safety program, there should be a system to select, develop, and enhance the trainers and their abilities. By focusing on these three areas, the experience of the program's attendees can be elevated, and the foundation of the program can be solidified. Proper selection of the trainer makes development and enhancement easier, as well as determining the needed qualifications and requiring a resume. Setting these minimum requirements should not be taken lightly. Look at the material and determine the fields of expertise needed. The development phase of this triumvirate starts with informing the trainer of the method of instruction and the material used by the program. Next, assess the new trainer by allowing them to present a portion of the material they are comfortable with and evaluate them. A few words of constructive criticism can make a good trainer great. Finally, each instructor should have an active mentor that can continue guiding them and who they can go to for advice. In any field, it is important to continue to improve. Instructing is no exception. Some trainers will need help in finding continuing education opportunities and overcoming issues in the classroom. A mentor can assist in bridging the gap of trainer issues. While most programs focus their attention on the participants, it is also important put a sizable emphasis on the trainers. This action will in turn improve the presentation of the program material. Additionally, as trainers increase their knowledge through advanced training, they can bring the most up to date information and tactics to the program.

Customizing Trainings for Maximizing Organizations' Use of Time

Aurora Le, *Indiana University Bloomington*

Jocelyn Herstein, *University of Nebraska Medical Center*

Objective: With decreasing national attention on highly infectious diseases and disease mitigation and management, the amount of time and interest organizations are willing to devote to necessary but non-mandatory safety and health trainings is dwindling. Therefore, it is critical to keep the training curriculum dynamic and customized for each organization, to develop a catered learning environment. This is especially true since exposures and organizational concerns will vary by industry, so a one-size-fits-all approach should not be the default. Additionally, strategies on how to recruit organizations and individuals for trainings, when not part of a union, will be discussed. Topics discussed can be applied to other awardees outside of the IDR program as well. **Structure:** Roundtable discussion with examples of customized training and recruitment materials. **Discussion topic:** How much of your curriculum do you customize per training event and/or how regularly do you regularly revise your curriculum materials? What feedback have you received from organizations or trainees on how to improve your curriculum?

Workshop Block 7

Friday, May 11 | 9:45 - 10:30 a.m.

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HW/ER • ID • ST

A Glow in the Night: The Risks Associated With Transporting Hazardous Materials by Rail

Carl Fields, *IBT/Rail Worker Hazmat Training Program*

Greg Petkosh, *IBT/Rail Worker Hazmat Training Program*

Safely transporting hazardous materials by rail in North America is essential to the welfare of the general public as well as the environment. We will explore the specific dangers of two of the most commonly transported hazardous materials. Shipments of these commodities have increased significantly since 2012. Compounding the concern is the volatile nature of these highly flammable hazardous material unit trains. The ongoing concern over rail tank cars releasing their product and the resulting impact on the environment continues to be a problem. This presentation will delve into the resources available to train crews and first responders in the event a release were to occur. It will look at major releases, causes, and resulting regulations imposed in order to deter these incidents in the future. Significant design flaws in tank car design as well as the alarmingly severe lack of upgrades to North America's infrastructure contribute to the severity of incidents involving the release of hazardous materials. Using the knowledge obtained from past incidents to make the appropriate changes in the handling of these materials is essential in protecting the welfare of the public and the environment.

66

EL

Respiratory Selection Logic App

Robert Harrold, *IUOE National Training Fund*

The IUOE National Training Fund developed an online application based on the 2004 NIOSH Respirator Selection Logic document, available in Android, Apple, and web-based formats. This session allows users to download the app onto their smart phones and a Peer Trainer will introduce a scenario that allows users to interactively figure out the correct respirator using the app for the task. While employers are responsible for having a Respiratory Protection Program, fit testing and selecting respirators with the proper cartridges for their employees, this app empowers workers to understand the requirements and regulations when choosing the

right respiratory protection. Workers can also use it for projects or hobbies they are doing at home. As many people continue to face cleanup and restoration in Texas, Louisiana, Florida, Puerto Rico, and the Virgin Islands among others from hurricanes, floods and storms, people in these communities (volunteers and workers) can use the Respirator Selection Logic App to learn how to protect themselves from airborne hazards such as mold. In California, airborne hazards from the Wildfires include lead, asbestos, arsenic, antimony, cadmium, copper, and zinc in the ash as well as household chemicals and many unknowns that await the workers, community members and volunteers performing cleanup, restoration and rebuilding of whole towns/cities. This app can help them protect themselves while they accomplish this work.

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HW/ER

Emergency Management Planning: Laboratories

Shalaka Kotkar, *Texas-Utah Consortium/The University of Texas Health Science Center at Houston*

Disasters such as hurricanes, floods or fires, can pose challenges to the safe operations of research, diagnostic and other laboratories that contain materials that, uncontrolled, are a hazard to human health and the environment. Securing and protecting research materials, products, and critical equipment is important in the event of such an emergency. Also important is preventing the release of chemicals, radiation sources, infectious agents or other hazardous materials. If the appropriate measures are not taken, invaluable data, samples and equipment may be lost or compromised. Worse, cleanup workers or the nearby community could be exposed to health hazards. Therefore, we strongly support the development of emergency management plans for laboratories. In this workshop, we propose using the train-the-trainer model to develop a cadre of new trainers with the expertise to teach laboratory personnel how to develop, maintain and update an emergency management plan. Workshop participants will receive training materials, emergency shutdown checklists and other resources to teach others to develop actionable site-specific plans

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TA

Utilizing Course Evaluations and Developing an Annual Post-Impact Survey to Provide Effective Trainings

Aurora Le, *BIDTI/Indiana University Bloomington*

Jocelyn Herstein, *BIDTI/University of Nebraska Medical Center*

Objective: Evaluations are critical in the process of examining a program by allowing for the analyses of a program's activities and content to provide information on potential areas in which a program's effectiveness can be improved and suggestions on how to keep the courses dynamic. This session will discuss the evaluation process the Biosafety and Infectious Disease Training Initiative (BIDTI) utilizes to continually improve the effectiveness of the training program, using a hybrid paper/digital evaluation method, that is easy for the trainer to administer. Additionally, although it is not required, BIDTI conducts an annual post-impact survey that is administered to trainees of that training year to determine the training program's effect, if any, on long-term behavior and safety changes. There will be a demonstration on how to develop this utilizing online survey development software, like Qualtrics. **Discussion topics:** What evaluation methods and/or tools do you use to make sure your program is effective and relevant to worker needs?

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EL

Building Peer Trainer Technology Competency

Kimberly O'Dell, *IUOE National Training Fund*

Amanda Petry, *IUOE National Training Fund*

With IUOE Peer Trainers at a median age of 51 years old, many find it difficult to go beyond lecture and PowerPoints. Technology fears stop many trainers from even trying something new. Realizing this, the IUOE National Training Fund (NTF) began building technology into its instructional design for trainer classes. Trainer courses are designed to use many hands-on and participatory exercises using various technologies, so they become the default delivery method to their members. In this session the IUOE NTF will demonstrate a brief overview of the online technologies being taught to Peer Trainers using Microsoft Surface Pros. This includes several online applications (apps) developed by the NTF, a draft virtual HAZWOPER world in development by the NTF, OSHA standards, WISER, and other programs.

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HW/ER • TA

Using Data to Fill Gaps in Preparedness

Vittorio Sbrocca, *Midwest Consortium/Citizens Environmental Alliance*

Preparedness at the personal and community level is a first line of dealing with releases of toxic chemicals that may result from intentional or unintentional acts, extreme weather events or natural disasters. Citizens Environment Alliance is using data from a questionnaire to identify gaps in preparedness. For instance, 88 percent of participants are aware of hazardous chemicals in their homes, but only 41 percent are aware of hazardous chemicals in their communities. Training, typically utilizing a Toxic Release Inventory exercise, is then provided to remediate identified preparedness gaps. Participants will review the content of the questionnaire and the results collected over two years, learn how decisions were made based on the data to select target topics for new training and examine the feedback methods used to gauge impact. Small groups will review the questionnaire and results. The training materials used to fill the gaps will be provided. This course will discuss topics like: What are the challenges to obtaining self-assessments from community residents? What data analysis support is needed to summarize the data and identify gaps? How can new topics be integrated into existing programming to fill gaps? How can feedback to evaluate impact of the additional training be collected efficiently in short programs?

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HW/ER

Using Procedural Simulation for Infectious Disease Response Training for Health Care Workers

Andres Viles, *Deep South Consortium/University of Alabama at Birmingham*

Elena Kidd, *Deep South Consortium/University of Alabama at Birmingham*

The 2014 Ebola Virus Disease (EVD) outbreak brought the topic of biosafety and infection control practices for healthcare workers to the forefront. As the EVD outbreak evolved, the Centers for Disease Control and Prevention (CDC) updated their guidance on personal protective equipment (PPE) used by healthcare workers when caring for confirmed or suspected Ebola patients. The University of Alabama at Birmingham (UAB) Hospital uses simulation as a tool to provide opportunities for healthcare workers to receive hands-on practice and safety training in donning and doffing PPE with a trained observer to ensure proper protocol adherence during an EVD or other infectious disease response. The purpose of this presentation is to highlight key elements used in biosafety and infectious disease response awareness and operations level training sponsored by the

UAB Office of Inter-Professional Simulation for Innovative Clinical Practice. Various infectious disease resources will be introduced and a demonstration of the recommended process for donning and doffing PPE for a suspected EVD patient will be provided. Other resources will be made available to participants including the rubric and checklists used by the doffing expert and observers in evaluating adherence to the donning/doffing procedures. At the end of the demonstration, participants will be encouraged to ask questions and review the PPE kits used in the demonstration. Additional kits will be available for viewing.

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EL

Building Innovative Industry Partnership Through Digital Learning

Elton Butcher, *CCHST/Amarillo College*

Jeff Wallick, *CCHST/Amarillo College*

Terrel Chambers, *PANTEX DOE*

Amarillo College Safety and Environmental Technology program has been working with Department of Energy PANTEX Plant for many years through the National PETE Grant to provide hazardous related training. By working together, we have been able to push down the training costs per student, increase the grant training dollars, opening up the channels of communication between plant departments and helping PANTEX save US tax dollars by reducing bureaucracy within PANTEX. PANTEX and Amarillo College are working together on a shared 5-year training plan on certification needs to ensure that employees do not fall out of compliance. Local industry has also benefited by the Amarillo College/PANTEX relationship by getting access to the same high-quality training that previous required them to travel to distant cities, which in turn helps reduce the cost to PANTEX employees training by additional students. Amarillo College has gone to a majority course material digital classroom format for most classes we teach. By working in a digital medium, we are able to respond very quickly to changes in regulations and industry trends. One particular area that we have completely revamped is our HAZWOPER refresher class. We spend the first half day doing an interactive online training that is self-paced on training modules. This format allows students who are knowledgeable in an area to move onto other areas where they may not be proficient. After lunch students demonstrate knowledge/skills by performing a hands-on performance evaluation. By working closely with PANTEX, we know the training areas to focus on and which areas that need to be improved. Every year we change up the HAZWOPER refresher class to keep student engagement high.

ROUNDTABLE SESSIONS:

Enhancing Programs with Partnerships and Laws

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HW/ER

Practical Understanding of OSHA, EPA Laws and Acronyms With Interactive Atmospheric Metering Explanation and Techniques

Bill Bennett, *IAFF – Local 2800 Arlington County, Virginia*

Everyday workers across the nation perform tasks because that's what they were told to do. Ask yourself this question: do you know why you have to do it? Back in the 1960's we had very few regulations on safety and employees working with chemicals. Current regulations require a great deal of training for the employee. I discuss the WHY and highlight the importance of WHAT the employee really needs to know and understand. One of the most misunderstood topics amongst any work force is the use of metering and what it is really telling us. OSHA and EPA give guidelines on working in flammable, toxic, corrosive, oxygen deficient and other IDLH atmospheres. Employers are required to provide training on this equipment, but can you really explain what all that means?

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TA

How to Extend and Enhance Online HAZWOPER Through Collaboration With Community Colleges, Universities, and Community Organizations

Sheila Webster, *CCHST/The University of Tennessee*

Rex Short, *CCHST/University of Tennessee*

The goal of this effort is to better serve the needs of the Department of Energy (DOE) by increasing the number of workers prepared for employment by completing HAZWOPER training, developed by PETE/CCCHST Consortium, a NIEHS Awardee. The objectives will be to describe techniques for working with community colleges, universities, and community organizations to facilitate delivery of ONLINE HAZWOPER (Hazardous Waste Operations Emergency Response). This project provides new insights into collaboration with institutions ranging from mainstream education in community colleges to private sector small businesses serving DOE communities. Collaboration resulted in increased numbers of participants in online training, establishment of ongoing HAZWOPER in both online training and in the classroom, integration of HAZWOPER in curricula for colleges and universities, increased membership in CCCHST, reciprocal agreements with DOE contractors, and a sustainable framework that will continue to extend and enhance HAZWOPER training.

Workshop Block 8

Friday, May 11 | 10:45 - 11:30 a.m.

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HW/ER

Conducting Monthly Drills for Emergency Responders

Bill Parsons, *Midwest Consortium/ERS International*

Scott Tobey, *Midwest Consortium/ERS International*

As part of a demonstration project initiated in 2014 by Midwest Consortium training center Emergency Response Solutions International (ERSI), and supported by data from participants requesting more frequent worksite drills, ERSI has developed a spaced-learning initiative for emergency response refresher training. This initiative instituted monthly drills throughout the year to strengthen and frequently refresh necessary skills rather than having a single, 8-hour annual refresher. Instructions and video drill templates were developed for use at Ford plants by the Emergency Response Team (ERT) members. Workshop Objective: Participants will identify how to use monthly drills to improve the retention of the knowledge and skills required for safe and effective response to emergencies involving hazardous materials. Structure: Demonstration and round table discussion of website developed to provide turn key access to monthly drills, designed for emergency response to hazardous materials. Discussion Topics: How can the use of drills enhance the retention of learning for emergency responders? What are the barriers to implementing drills for emergency responders? How can emergency responders overcome these barriers to ensure continued use of knowledge in the practice of life-saving skills?

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TA

A Partnership to Increase Rail Safety Preparedness in an Urban Area

Lois Harrison, *Midwest Consortium/University of Minnesota*

Claire Ruebeck, *Midwest Consortium/Citizens Acting for Rail Safety in the Twin Cities*

The University of Minnesota training center partnered with Citizens Acting for Rail Safety in the Twin Cities (CARS-TC) to build community resilience to prepare for recovery in the event of a rail disaster impacting Twin Cities communities. CARS-TC was established in February 2015 in response to a dramatic increase in the volume of Bakken crude oil shipped by rail through Minnesota. This collaboration between the Midwest Consortium training center and CARS-TC has resulted in the presentation of awareness and emergency response training courses, as well as the sharing of resilience resources to help meet needs identified by the partners. Workshop Objectives: Participants will learn about our experience in this developing partnership and identify tools and resources that might be applied to high hazard transport risks in their locale. Structure: The partnership development process and upcoming plans will be reviewed. Interactive hands-on training materials to meet needs will be shared and metrics to chart community resiliency will be discussed in small groups. Discussion topics: What are the challenges to developing trust? Are there concerns for a local affiliate working with local partners? What are useful metrics for charting partnerships in community resiliency building?

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EL

Virtual Reality in Training

Anthony Jimenez, *HAMMER Federal Training Center*

Carol Lorenzen, *HAMMER Federal Training Center*

As a new generation of students enters the workplace, the training environment must evolve to meet ever-changing student needs. At the HAMMER Federal Training Center in Richland, WA, the International Brotherhood of Teamsters are adapting to these new needs by integrating Augmented Reality into our Load Securement training. This technology allows the student to immerse themselves in the training environment while remaining in the comfort of the classroom. The technology will be used prior to hands-on performance with actual equipment, allowing the students to gain a general understanding of the objective and a feel of what is expected. After a short presentation on the benefits of new technology in the classroom, we would like to allow you the chance to see what our students see. The International Brotherhood of Teamsters will be demonstrating the technology and

the two presentation methods we effectively used in the classroom. The session will be 70% PowerPoint with visual aids and 30% will be an Augmented Reality demonstration. The PowerPoint will consist of how technology assist with today's learners, the best way to implement into a lesson, and some of the hurdles that may arise in presenting with the technology. The presentation will conclude with a short demo on what it may look like in the classroom.

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ID

Designing and Delivering Effective Training

Kirk Laflin, *CCHST/PETE*

Charles (Rick) Richardson, *CCHST/National Environmental, Safety and Health Training Association*

National Partnership for Environmental Technology Education (PETE) are collaborating with the National Environmental, Safety and Health Training Association (NESHTA) in offering PETE's Community College Consortium for Health and Safety (CCCHST) members a 3-5-day training workshop based on NESHTA's Designing & Delivering Effective Training workshop. This workshop is based on its newly updated Designing & Delivering Effective Training Manual that is a nationally recognized ANSI Z490.1 & Board of Certified Environmental, Safety & Health Trainer (CET) exam blueprint conforming workshop.

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HW/ER

It Takes a Village: Benefits of Cross-Sector Planning and Training for an Infectious Disease Response

Lisa McCormick, *Deep South Consortium/University of Alabama at Birmingham*

Matt Fifolt, *Deep South Consortium/University of Alabama at Birmingham*

In 2015, six first responders in Birmingham, Alabama were exposed to an individual exhibiting signs and symptoms of the Ebola virus disease. Although the patient later tested negative for Ebola, this situation reinforced the importance of planning and training for an infectious disease response across multiple emergency response sectors including public health, emergency management, law enforcement, firefighters, emergency medicine, environmental, and media relations. In order to reach these populations, the Deep South Biosafety Worker Training Program (WTP) developed a multi-state partnership between the University of Alabama at Birmingham (UAB) School of Public Health, UAB School of Medicine, the University of Mississippi Medical Center, and the Alabama Fire College's Workplace Safety Training Program to provide biosafety and infectious disease training to individuals working in these sectors. Through this strategic

partnership, including its multisector advisory board, the Deep South Biosafety WTP leverages existing resources to deliver trainings to wide audiences across the Southeast. All trainings conducted by the WTP are available to professionals who are involved in responding to infectious disease outbreaks, including individuals from different departments as well as various emergency response sectors within the geographical area of the training. Trainings have been conducted within ESF-8 regions and at professional association meetings for nurses and other hospital workers, allowing health care professionals to network with others working in similar positions at other institutions. This session discusses the importance of cross-sector planning and training prior to an infectious disease outbreak. Information will be available regarding future locations and topics for WTP trainings.

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HW/ER

Chemical Identification in Emergency Response Situations

Richard Patterson, *IBT Worker Training Program*

Shane Waskom, *Teamsters Local 519*

One of the major hazards facing workers on hazardous materials sites or in emergency response is a lack of knowledge of the materials they are handling. Participants will learn how to use the information available on SDS's, ERG's, and other sources to identify the hazards posed by an unknown chemical. Additionally, students will participate in an activity to calculate the Time Weighted Average exposure limit for the chemical, given the component chemicals and their concentration. This activity will use the Kingston dam failure of 2008 as a case study.

Web-Based Training Versus Human Interaction: THE BATTLE

Sara Willis, *UAW Local 1700*

Grant Grace, *UAW*

Web-based training allows a facilitator to upload a video and walk away without any real value to participants. It actively limits participants ability in the learning process. Mandatory trainings for most employers are inconvenient. Presenters will share data from years of experience that demonstrate Web-based programs allow for compliance but do not provide value-added information. Retention of this valuable information is important and available using personal, face-to-face, hands-on and group learning. Facilitators do provide personal Active Learning. Active Learners need information to be relevant to them on their job. When adult Learners are actively participating in their own learning they retain more than what a video has to offer. Face-to-face facilitation of a learning guides participants to see, hear, do and virtually own the knowledge. This occurs through active participation, loaded questions, hands-on and ownership of useful information. Participants have a natural need for information that's valuable to them personally. This personal facilitation allows for learning through all participants experiences. This training is geared to provide data on the way adult Learners learn, how they retain and use information for personal development, and adding value to themselves as employees and to the company. Presenters have over 30 years combined training experience using knowledge gained from the shop floor in the auto sector and 25 years of experience in the NIEHS WETP.

Implementing Affordable Virtual Reality and 360 Degree Photography Into Disaster Preparedness Training

Janet Womachka, *TNEC-CSEA*

This hands-on workshop will give participants an opportunity to experience immersion into a hazardous scenario with the use of virtual reality and 360 photography. We will discuss how to find/use cost effective equipment and best practices in finding and taking 360-degree photos and videos. Peer Trainers from the Town of Brookhaven, NY will discuss how they have successfully integrated this technology into their safety training and how workers have responded to the new activities. The workshop will also discuss how this technology has been used as an integral part of emergency response and preparing first responders before they enter a disaster site.

Opioid Abuse Creates Safety Hazards on the Work Site

Ashley Dwyer, *IUOE National Training Fund*

Barbara McCabe, *IUOE National Training Fund*

There is no argument that first responders and first receivers face numerous safety hazards because of the opioid epidemic along with other drug abuse issues. What about ordinary workers on the job site? What if the person working next to you was addicted to an opioid or had progressed to heroin because he/she could not afford the prescription drug any longer? That person could be a safety hazard to you and the rest of the crew and to his/herself. What do you do to help, how do you handle this, how do you protect yourself? You wear your hardhat to protect yourself from falling objects but what do you wear to protect yourself when your coworker is in an altered state? This session will present information on the magnitude of the problem and how the International Union of Operating Engineers Members Assistance Program (MAP) is an innovative solution to tackle the current opioid crisis and help members who are struggling with lifestyle issues. The Members Assistance Program trains staff, union members and contractors as peer counselors to help members and their families who need assistance. MAP's success rate is around 80 percent of those who recover from substance abuse or other disorders, and do not relapse; much higher than the national average. Recently, the issue of substance abuse and suicide correlation has been a discussion point, and MAP is working closely with suicide awareness groups and devising a plan to battle the issue. The goal is to help the worker and make him/her a productive member of the workforce again and have them not be the safety hazard on the job site.

Workshop Block 9

Friday, May 11 | 12:45 - 1:30 p.m.

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TA

Mobilizing UAW Members in Response to Hurricane Maria

Andrew Comai, *UAW*

Judy Daltuva, *UAW/University of Michigan School of Public Health*

In the wake of hurricane Maria, the UAW mobilized skilled tradespeople and nurses to assist in disaster response (cohort 1; n=18). The UAW Health and Safety Department also began the process of deploying workers experienced in industrial emergency response and adult learning techniques. These worker trainers participated in a trainer development program in October 2017 (cohort 2; n=30) which introduced them to the mucking and gutting, infectious disease and resiliency curriculum developed by NIH. We will describe both the on-the ground-response team's experiences as well as the impact of disaster response training on cohort 2. A team of worker evaluators in collaboration with University of Michigan researchers will conduct interviews and surveys with responders (cohort 1) to answer the questions: What safety training and job skills were useful in the response activities? What hazards were encountered that went beyond their training or life experience? What gaps in training did they perceive to be most important? What training is essential for disaster responders' pre-deployment? Cohort 2 will also be surveyed 90 days post-training to determine the impact of the NIH programs delivered in October. Surveys will be conducted to answer the question: How have they used the resiliency training they experienced? How have they adapted the resiliency 4-hour long program into other core curricula (i.e. workplace violence, ergonomics, industrial emergency response 24 hour 40 hour and refresher training).

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HW/ER • ID

Fentanyl-Occupational Exposures and How to Prevent Them

Richard Harrison, *OAI, Inc.*

Participants of this class will receive the latest information regarding occupational exposures to fentanyl and its analogs, in addition to carfentanyl. With the increase in over-doses of heroin and fentanyl laced heroin, responders are facing more risks than ever before. The class focuses on the relevant hazards associated with law enforcement, fire, and EMS response. The implementation of this topic into the 40-Hour Hazmat Technician training will facilitate discussion about how to prevent or significantly reduce the occupational exposures experienced by many. Participants will also receive information on how to keep materials current based on intelligence and incidents investigated by Federal, State and Local authorities throughout the U.S. and its territories. Course material includes references to resources for the latest information on how to develop and implement safety procedures for responders as they perform responses to illicit drugs. Relevant decontamination options are presented as part of the implementation into a 40-Hour Hazmat Technician training course, as well as a demonstration of how to avoid exposures while mitigating a clandestine lab. Early recognition and identification of symptomology to exposures will be discussed, as well as developing policies and protocols for administering Naloxone (Narcan) to un-responsive responders, and proper monitoring of those exposed. It will cover identifying risk factors for responders and the debate over what level of response is required or desired. Many jurisdictions have preempted their administration to the victims creating conflict and public criticism. Discussion will focus on needed policies and the development, as well as implementation, of best practices to protect the first responder.

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EL

Online E-Learning and In-Class Training: A Blended Learning Approach

Becky McGirr, *DIDRT/Duke University*

Comprehensive, in-class infectious disease response training can provide a challenge to both instructors and trainees due to the amount of material that needs to be covered to meet course objectives, the time restrictions inherent to certain worker populations (which can make scheduling longer in-class sessions difficult) and the diversity of base knowledge in any given trainee group. Utilizing online e-learning in combination with in-class sessions can help to provide a comprehensive blended learning approach, which ensures all required material is covered, while allowing flexibility for the learners. Shorter in-class sessions can also be accommodated, which can expand in-class training offerings to those worker groups which have limited or inflexible time available for learning. In this session, we will discuss the approach the Duke Infectious Disease Response Training (DIDRT) consortium has taken to incorporate e-learning courses as prerequisites for in-class training, allowing learners from various educational backgrounds to learn the prerequisite material needed to fully benefit from in-class, hands-on sessions. This approach also reduces in-class time spent on lecture-style teaching, and provides flexibility to the learner, who can complete the e-learning courses at their own pace and on their own time. We will present examples of blended learning sessions delivered through DIDRT and will provide a demonstration of our learning management system, showing how our e-learning offerings can be paired with different in-class sessions to customize the learning experience for different worker populations and their specific infectious disease response training needs.

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HW/ER • LS

Job Stress and the HAZWOPER Worker-Training to Build Worker Health and Safety

Bridget McGuinness, *TNEC-CSEA/University of Massachusetts Lowell*

Tom Estabrook, *TNEC-CSEA/University of Massachusetts Lowell*

In a dynamic activity, participants will answer the question: Is Stress Good or Bad? They will then complete a personal quiz to evaluate their stress index. Working in small groups participants will review what contributes to workplace stress and strategies for reducing both work related and personal stress that we often bring to the workplace. Finally, small groups will discuss the value in addressing workplace stress in any or all of their course offerings and the impact on worker health and safety.

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ID

Activities to Enhance Student Learning and Participation

John Morgan, *CCCHST/PETE and Eastern Iowa Community Colleges*

Ron Snyder, *CCCHST/PETE*

Emergency Response Guidebook Activity: Demonstrate the ability to locate chemical information when technology is not available. Equipment Assembly Exercise: The purpose of this exercise is to build communication skills during operations. The goal is to follow directions to complete the task using radio communications. Build a mechanism from the provided materials using verbal communication to convey the assembly instructions. When assembly is completed the operator will accurately direct the determined number of projectiles to the target. Tower of Nuts Exercise: With the materials provided perform the task using verbal communication to convey the assembly instructions and direct the team. When assembly is completed the team will announce "DONE," the completed assembly must stand on its own for 10 second, after the 10 seconds the time of completion will be recorded.

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HW/ER

Job Hazard Analysis - Utilizing FACE Reports in the Classroom

Simon Sage, *WRUC/UCLA Labor Occupational Safety and Health Program*

The California Fatality Assessment and Control Evaluation (FACE) program identifies and studies workplace deaths throughout the state and provides prevention recommendations that can be implemented in the workplace. CA/FACE is funded by the Nation Institute for Occupational Safety and health (NIOSH) and is one of seven FACE states across the country. This workshop will explore the use of FACE factsheets, videos and investigative reports when introducing the Job Hazard Analysis concept in HAZWOPER and other courses. Working in small groups, students are given the opportunity to consider actual fatality incidents and the importance of the JHA process. Developing awareness of hazard identification and risk assessment enhances students' ability to determine appropriate control measure and is the primary goal of health and safety training. Workshop participants will examine FACE materials from California and participate in a small group activity using these materials.

A Bi-Modal Approach to Experiential Learning and Simulation in the Health Care Environment

Andres Viles, *Deep South Consortium/University of Alabama at Birmingham*

Lisa McCormick, *Deep South Consortium/University of Alabama at Birmingham*

The University of Alabama at Birmingham (UAB) Rapid Infectious Outbreak Team (RIOT) is an inter-professional team of UAB Health Systems employees who are prepared to care for patients with potentially contagious infectious diseases. As a result of the 2014 Ebola Virus Disease outbreak, the Centers for Disease Control and Prevention updated their guidance to include training be provided using various modalities and must include an opportunity to drill the actual process of donning and doffing personal protective equipment (PPE). As part of their training, UAB RIOT members participate in two types of simulation, immersive and procedural. Immersive simulation, which involves using a manikin or standardized patient to portray a confirmed Ebola patient, encourages learners to immerse themselves in the task of caring for the simulated patient. This type of simulation provides a unique opportunity for the team to test the system for gaps in processes, equipment needs, and potential risk points for PPE breaches and contamination. Procedural simulation involves a skills-based approach. Team members rotate among different stations to practice and refine the skills needed to safely care and transport a patient with a potentially contagious infectious disease. This method of simulation training allows learners to gain in-depth knowledge of the skills, equipment, and procedures to be used during an infectious disease response while receiving tight coaching and feedback. Both approaches focus on building, maintaining, and mastering the skills needed to safely care for patients while wearing PPE. This presentation describes best practices of simulation training and lessons learned.

Workshop Block 10

Friday, May 11 | 1:45 - 3:15 p.m.

When Disaster Strikes Are You/Are They Really Ready?

Kim Dunn Chapital, *DSCEJ Inc.*

Jamar Sullivan, *OAI, Inc.*

Bruce McClue, *DSCEJ Inc.*

A disaster hits in your area and there is an opportunity to place trainees in jobs that will provide much needed income, work experience, and an overall better quality of life. The organization is ready to place workers who are eager and ready to work. Are you/they really READY? There are issues i.e., loss of communication and documentation, the need for additional and refresher training, staffing agency requirements, trainee personal situations, etc., that make it difficult to place trainees with prospective employers. Moreover, those responding to disasters can also be emotionally affected by the tragedies around them. Although first responders and disaster site workers are consistently exposed to tragic events, they are not immune to their own problems in the workplace or at home. Behavioral resiliency refers to one's ability to recover from disturbing or tragic events. Behavioral resiliency training offers tools to help one strive through adversity following such events, and accept that change is inevitable. Understanding and applying resiliency can greatly reduce the impact of stress and tension that emergency response workers may experience in their daily lives. This workshop will review some of the challenges and obstacles encountered by trainees and responders, as well as explore the concept of behavioral resiliency and how to incorporate resiliency in the curriculum.

Advances in Rigging Awareness Safety Training

Pete Gentles, *UAW Local 600*

Ross Baize, *UAW Local 974*

UAW members have experienced severe injuries and fatalities from crane related operations. Information from six fatality investigations will be relayed to underscore the need for improved training and identify specific learning objectives. One goal was to demonstrate hazardous conditions in a classroom setting as opposed to a hazardous environment on the shop floor. A second goal was to use hands on adult learning techniques to cement knowledge of safe processes with both new hires and a high seniority work force steeped in unsafe tribal knowledge. The table top model was developed to

demonstrate over 70 rigging lessons and lifting processes including spreader bars, snatch blocks, cribbing, shock loading, chain shorteners, angle stress and determining center of gravity. The table top based training was successfully deployed at a large machine manufacturer in Wisconsin, a steel mill in Detroit, and an agricultural implement manufacturer in Illinois. Worker trainers from these facilities will use the small group activity method to lead participants through various lifting scenarios and hands-on classroom lifting device inspection methods. Blue prints for the table top model, all training written materials and an online video library will be available to all participants.

93

HW/ER • TA

Manual Material Handling

Gary Gustafson, *CPWR - The Center for Construction Research and Training*

Eileen Betit, *CPWR - The Center for Construction Research and Training*

Manual materials handling injuries are among the most frequently reported and expensive injuries. This presentation will introduce participants to CPWR's latest social marketing and training program designed to reduce the risk for occupational injuries associated with manual materials handling in construction. Social marketing involves steps to make sure the solution is packaged to meet different needs, is readily available to those it's being promoted with, and offers something for each person or organization depending on where they are on the stages of change spectrum. The interactive training reinforces the role workers and employers have in planning for the safe lifting and moving of materials, including delivering materials close to where they'll be used, storing them off the ground, providing lifting equipment for heavy materials, and engaging in good housekeeping by ensuring pathways are clear when materials have to be moved. Participants will be able to play the two microgames developed to raise awareness and reinforce learning objectives taught during the Manual Material Handling training.

94

TA

Specific Hazards of Confined Spaces

Francisco Martinez, *IBT Worker Training Program*

Ricardo Lopez, *IBT Worker Training Program*

Confined Spaces pose specific hazards to workers. This presentation using branching to discuss to a bilingual audience how decision making in confined spaces can help mitigate these hazards. By using very common household goods, participants will be able to demonstrate the most common hazards posed by confined spaces, fire, behavior of gases based on density, and oxygen deficiency, as well as how ventilation works. This lesson has many applications, therefore allowing the Instructor to be creative in what topics are covered when demonstrating this lesson. By implementing each of the special hazard topics into this activity, the instructor can clearly communicate the lesson using visual, hands-on and demonstrative techniques. The activity will show the participant how a chemical reaction manifests itself, how ignition of a combustible occurs, how fire is achieved and sustained, how oxygen deficiency can extinguish a fire, and how ventilation can purge a space of a potential hazard. Participants will be divided into small groups and given the opportunity to perform the demonstration themselves.

95

ID

The Confident Trainer

Lula Odom, *ICWUC CWHSE*

Objectives: At the end of this session participants will discover hidden reasons why trainers lack self-confidence, analyze findings discovered from small group discussions, and participate in confidence building exercises. It is not uncommon to find that most new trainers entering the world of health and safety training may initially lack confidence that they will be able to teach others on how to be safe at work. At times, even the experienced trainers may have some of the same feelings which accompany lack of confidence. This work shop will engage participants in exercises that will build self-confidence in new and experienced trainers. The participants will work in teams to evaluate where they are currently, related to confidence as trainers and where they think they would like to be, and build confidence that a change can occur for them. The information collected will then be discussed as a group and explore possible solutions. Afterwards, participants will engage in confidence building exercises. The session will end with questions and answers. The results will be a more confident and persuasive trainer that is ready to leave their mark in the field of health and safety training.

96

HW/ER

Simple Chemical Properties Demo

Kenneth Oldfield, *Alabama Fire College*

This module combines a brief introduction of chemical properties that are available from common references, like the Safety Data Sheet or NIOSH Pocket Guide, followed by safe classroom demonstrations using small quantities of accessible chemicals or products, pH paper, and food coloring to illustrate behavior. Trainees predict behavior or results based on properties (vapor pressure and density, specific gravity, solubility, etc) that they look up, and then observe the results with pH paper and colored liquids. Safe for hands-on activity in groups.

97

ID

Learning Retention Rewards From Adopting a Micro-Scale Approach to the Classroom Experience

Louis Andre Roy, *Nova Southeastern University Project SEAMIST*

The presentation will provide evidenced-based examples and incorporate my twenty years as a U.S. government affiliate industrial compliance training contractor. Initially, the presentation will address aspects of classroom delivery with the precept of no one left behind. Recognition of student and classroom anticipated, and unanticipated, learning environment challenges will be discussed with examples. Although beneficial for the trainers' baseline delivery, the ultimate rewards are realized during the capstone team exercise. Ideally, a minimum of six to a maximum of twelve participants working in three-person teams is best suited to achieving the desired outcome. Added to the equation is advanced preparation and an appropriate classroom setting. In order to better express the merits of this approach, the breakout experience will require volunteers to participate in a role-playing mini team building exercise. The intent is to convey the critical importance of meaningful verbal team interface through attentive listening; use of smartphone technology to better navigate the evolution; justifying selected solutions; and fielding questions, all intended to elevate self-confidence. This structure of classroom team building is better adapted to the refresher training experience when field activities aren't practical. By completing this course, training professionals will more effectively embrace the trainer/participant relationship. In this regard, the boundless limits of stimulating emergency/disaster response professionals will ultimately strengthen health and safety programs.

98

ST

Drone Small Unmanned Aerial Vehicle

Robert Seman, *IUOE National Training Fund*

An unmanned aerial vehicle (UAV), commonly known as a drone, is an aircraft without a human pilot aboard. Drones are quickly becoming useful tools across all industries. Drones are used to survey and monitor construction sites, land, inspect buildings and bridges, inspect cranes, assist farmers with crop health evaluations, deliver products, video and model crime scenes. They also assist Industrial Hygienists with sampling and characterization of worksites, hazardous and non-hazardous alike. The only limitation for drone technology is an imagination, and the money required to purchase and develop it. Recognizing the potential for drones and utilizing them for these purposes and more, is only one piece of the equation. The NTF will demonstrate various drone models, drone software and its capabilities, and final demographics of a site survey conducted for IUOE Local 18's training site in Miamisburg, OH. There are also a number of FAA regulations and requirements to become a licensed drone pilot which will be presented during the session; however, students will get the full effect of what it is like to operate drones for the purposes discussed by having the opportunity for hands-on with miniature drones that do not require a drone pilot license to operate.

99

ID

Team Teaching – Advantages and Pitfalls

Reid Wharton, *IAFF - Campbell River, British Columbia*

Brent Cowx, *IAFF - Vancouver, British Columbia*

With the surge in web based training in recent years and the fact that many instructors teach alone, this session will focus mostly on the advantages of team teaching techniques in relation to improved learning outcomes. Team Teaching –Advantages and Pitfalls, is a 90-minute, interactive presentation which will review some basic do's and don'ts of team teaching. The session is designed to define, (a) the roles of both instructors in the classroom, (b) how to properly interact as duo instructors, (c) how to play off each other to create humor in the learning environment and (d) how two instructors' different presentation styles can assist in the learning outcomes. The session will also briefly touch on some examples of common pitfalls made by co-instructing. The session will conclude with an open discussion forum to share some team teaching experiences to further enhance our instruction ability and make us all better educators.

Plenary Sessions – Speaker Biographies

Arturo Archila

The Labor Institute

Arturo Archila is the project director at the Labor Institute. He is a master trainer in the construction and general industry field; a health and safety, infectious disease, resiliency, and environment bilingual training coordinator for the NIEHS grant; and an authorized OSHA outreach trainer/coordinator in general industry and in construction. He was recently the NIEHS health and safety liaison between the United Steelworkers (USW)¹ and Wind of the Spirit, Worker Justice Project, New Immigrant Community Empowerment, El Centro, Workplace Project, Center for Popular Democracy, La Colmena, New Labor², Make The Road³, and National Day Laborers Network⁴. The project has provided support for worker centers in capacity building and developing a cadre of authorized outreach trainers who can reach out to immigrant workers and provide access to health and safety training in a language local communities understand. Similar efforts are being replicated in Washington state with the Yakima Nation.

As part of the collaboration with the Steelworkers, Arturo is part of the Specialized Emergency Response Trainer (SERT) team. Through the project, strong connections have been created between USW and grassroots organizations to respond to local disasters such as hurricanes Harvey, Irma, and Maria in Houston and Puerto Rico.

Marianela Acuña Arreaza

Fe Y Justicia Worker Center

Marianela Acuña Arreaza is a Venezuelan immigrant who has dedicated herself to social change in Houston for almost a decade. Her roles in social justice have always involved facilitating participatory decision-making, designing educational curriculum, and moving networks and groups into action.

While studying sociology and arts at the University of Houston, she organized with United Students Against Sweatshops and Student Farmworker Alliance and volunteered as a case manager and research coordinator with Fe y Justicia Worker Center, the organization for which she now serves as the executive director.

Fe y Justicia has been the premier worker center in Houston for 11 years, with a multilayered social change strategy that includes services, education, advocacy, and organizing. Since Harvey flooded the city in late August of last year, Marianela and her team have led the post-disaster occupational safety and health response through outreach and training.

Marianela is the recipient of the Houston Peace and Justice Center 2014 Peacemaker Award and the Highlander Education and Research Center's 2015 Greensboro Justice Fellowship.

Sharon Beard

NIEHS Worker Training Program

Sharon Beard is an industrial hygienist with the NIEHS Worker Training Program. She is primarily responsible for coordinating, evaluating, and improving the Environmental Career Worker Training Program (ECWTP), formerly known as the Minority Worker Training Program (MWTP). She uses her background in industrial hygiene to provide expert review, guidance, and leadership in managing a multimillion portfolio of worker training grants in the areas of hazardous waste, emergency response, and nuclear weapons/radiation, reaching communities all over the U.S. Sharon also assists with efforts to facilitate and coordinate translational research through the NIEHS Partnerships for Environmental Public Health (PEPH) program. The PEPH program is an umbrella program that brings together scientists, community members, educators, health care providers, public health officials, and policymakers in the shared goal of advancing the impact of environmental public health research at local, regional, and national levels.

Sharon holds an M.S. in environmental science and management from Tufts University, where she received the prestigious Environmental Science and Management Fellowship from National Urban Fellows, Inc.

1 <http://www.usw.org/>

2 <http://newlabor.org/>

3 <http://www.maketheroad.org/>

4 <http://www.ndlon.org/en/>

Linda Delp

UCLA Labor Occupational Safety and Health Program

Linda Delp, Ph.D., M.P.H., is the director of the UCLA Labor Occupational Safety and Health Program (UCLA-LOSH). She earned her master's and doctoral degrees from the UCLA School of Public Health, where she researched job stressors and satisfaction among home care workers and initiated the California Home Care Research Working Group.

Linda is principal investigator of numerous contracts and grants, including the four-member Western Region Universities Consortium HazWaste/HazMat and Environmental Career Worker Training Program, reaching workers and communities with education programs, workforce development, and policy initiatives from Alaska to Mexico. She teaches and mentors students in the UCLA School of Public Health and the national Occupational Health Internship Program⁵, and is a lead curriculum developer of the "Work and Health Equity"⁶ module, created to address disparities in work exposures and health outcomes. She is past chair of the Occupational Health and Safety Section of the American Public Health Association and recipient of the section's Alice Hamilton Award.

Donald Elisburg

National Clearinghouse for Worker Safety and Health Training

Donald Elisburg has spent more than 50 years working on various labor and human resource issues. From 1981 to 2009 he was in private practice in Washington, D.C., representing organizations on environmental and occupational health issues that included cleanup training for hazardous waste, emergency, and disaster response workers; worker disability and labor standards issues; and legislative and regulatory matters. Prior to that, he held a variety of positions within the U.S. government.

Donald continues to serve as a consultant to various nonprofit organizations, labor-management organizations, and government agencies on these matters.

Ashlee Fitch

USW Health, Safety and Environment Department

Ashlee Fitch is a technician within the USW Health, Safety and Environment Department, providing health and safety assistance to workers across the U.S. and Canada. She serves as co-principal investigator on cooperative grant programs for the Steelworkers Charitable and Educational Organization's Tony Mazzocchi Center for Health, Safety and Environmental Education.

Before joining the department, Ashlee served as a safety committeeman for USW Local 5668, representing workers at Constellium Rolled Products in Ravenswood, West Virginia, where she worked as a machine operator. She holds a B.S. in natural resource and environmental economics and an M.S. in safety, both from West Virginia University. She is a certified occupational health and safety technician and a graduate safety professional through the Board of Certified Safety Professionals.

⁵ <http://ohip.aoec.org/>

⁶ <http://losh.ucla.edu/resources-2/work-health-equity-module/>

Joseph Hughes, Jr.

NIEHS Worker Training Program

Joseph “Chip” Hughes is program director of the NIEHS Worker Training Program (WTP). For the past 20 years, Chip has worked in both the private and public sectors developing environmental and occupational health education programs for workers and citizens in high-risk occupations and communities. As a part of this work, he has pioneered efforts to create new methods and approaches for conducting needs assessments, reaching underserved populations, developing training partnerships, and creating innovative program evaluation and assessment measures.

Chip has received numerous awards for his role in responding to disasters such as the World Trade Center attacks, Hurricane Katrina, and the Deepwater Horizon Oil Spill. In November 2011, he received the Tony Mazzocchi Award for Lifetime Achievement from the National Council for Occupational Safety and Health.

Under Chip’s leadership, \$40 million in NIEHS grant support is annually committed for the development and administration of model worker health and safety training programs. These programs consist of classroom, hands-on, online, computer-based, and practical health and safety training of workers and supervisors who are engaged in activities related to hazardous materials and emergency response.

Aurora Le

Indiana University Bloomington

Aurora Le, M.P.H., CPH, is the project coordinator of the Biosafety and Infectious Disease Training Initiative (BIDTI)—one of the WTP Infectious Disease Response awardees—and serves as an academic specialist in the Department of Environmental and Occupational Health at Indiana University School of Public Health-Bloomington. Previously, she supported the research activities of the Nebraska Biocontainment Unit and was part of the exercise design team for the National Ebola Training and Education Center. Aurora, with their entire research group, is the 2018 American Industrial Hygiene Association’s recipient of the Edward J. Baier Technical Achievement Award.

In addition to having a role as education specialist and trainer and serving as the program evaluator of BIDTI, Aurora has a passion for conducting research in the areas of highly infectious diseases and occupational safety and health, with a focus on training and education. Since 2016, she has 11 peer-reviewed publications in the aforementioned areas, six manuscripts in development, and several non-peer reviewed published items. Aurora is a part-time doctoral student in health behavior at the Indiana University School of Public Health, with a focus on its intersection with occupational safety and health.

Pam Tau Lee

Chinese Progressive Association

Pam Tau Lee has been working to address issues of environmental and occupational racism for 28 years as a contributor to the First National People of Color Environmental Leadership Summit and the crafting of the Principles of Environmental Justice; a founder of grassroots-based organizations, including the Asian Pacific Environmental Network, the Just Transition Alliance, and the International Coalition for Human Rights in the Philippines - U.S.; and a professional in occupational and environmental health at the Labor Occupational Health Program, UC Berkeley, School of Public Health.

Pam has an extensive history in labor and community organizing. Her personal roots growing up in San Francisco Chinatown led her to community organizing. As a student in 1972, she helped found the Chinese Progressive Association, where she is currently the board chair. Her roots also led her to pursue a career in the labor movement, specifically with low income immigrant workers and workers of color in the hotel and restaurant industry.

With 20 years of experience in community and labor organizing, Pam joined the staff at the Labor Occupational Health Program at UC Berkeley where she developed programs to empower workers and communities to speak and act for themselves where they and their families live, work, and go to school.

Bruce Lippy

CPWR - The Center for Construction Research and Training

Bruce E. Lippy, Ph.D., CIH, CSP, FAIHA, is the director of safety research at CPWR, The Center for Construction Research and Training. Bruce has a long association with the NIEHS Worker Training Program, serving as the director of the National Clearinghouse from 2002 to 2005. Worker training has been a central focus of his career since he began working as training manager for Maryland Occupational Safety and Health in 1978. He has a Ph.D. in policy from the University of Maryland Baltimore County. He is a certified industrial hygienist and a certified safety professional and was recently designated a fellow of the American Industrial Hygiene Association.

As an associate at the Johns Hopkins Bloomberg School of Public Health, Bruce teaches a graduate course on occupational injury prevention. He has recently performed safety culture audits for large construction projects, including the first nuclear power unit to be built in the U.S. in decades. He also serves on a National Academies of Science committee on the use of elastomeric respirators in health care.

Larry Olson

Arizona State University - Polytechnic School, Ira A. Fulton Schools of Engineering

Larry Olson, Ph.D., is an associate professor and program chair of Environmental and Resource Management in the Polytechnic School, one of the Ira A. Fulton Schools of Engineering at the Arizona State University Polytechnic campus. He holds a Ph.D. in chemistry from the University of Pennsylvania and a B.S. in chemistry from Baylor University. He was a post-doctoral fellow at the University of Illinois and has been a member of the Arizona State University faculty since 1989.

Larry has been a visiting professor at the Vrije Universiteit Brussel in Brussels, Belgium; the University of Houston; Rice University; and Baylor University.

Eunice Salcedo

AFSCME

Eunice H. Salcedo is a health and safety specialist at the American Federation of State, County and Municipal Employees (AFSCME). She works on health and safety topics including workplace violence, disaster training and education, and the reformed Toxic Substance Control Act. She is a committee member for the ANSI Z10 Occupational Health and Safety Systems standard.

Before joining AFSCME, Eunice was a safety and health fellow at the AFL-CIO. She holds a master's degree in public health specialized in occupational health and safety from the California State University of Fullerton. Her graduate project focused on the pesticide exposure and the dermal effects among farmworkers in the San Joaquin Valley, California.

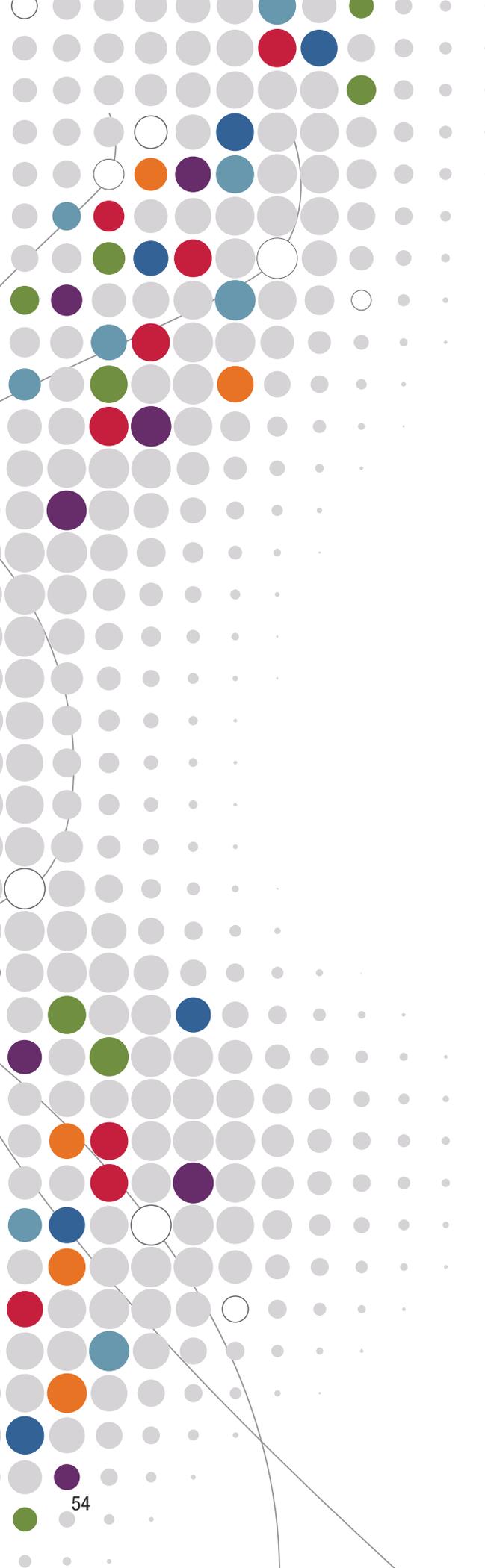
Craig Slatin

The New England Consortium-Civil Service Employees Association

Craig Slatin, Sc.D., M.P.H., is professor emeritus in the Department of Public Health, College of Health Sciences, University of Massachusetts Lowell. He retired from teaching and, so far, has no regrets about that. He is the principal investigator and director of The New England Consortium-Civil Service Employees Association of New York, an NIEHS Worker Training Program awardee.

Craig's research has addressed health and safety training evaluation, occupational health disparities, health care worker health and safety, and the political economy of the work environment. His research interests address the global need to make a transition to sustainable modes of production and consumption. Craig seems to be in that limbo land wondering what's next now that he is retired. To help stay young, he just participated in the Boston March for Our Lives. He also just participated as a retiree delegate at the annual meeting of his union, the Massachusetts Teachers Association (NEA), the largest labor union in the state of Massachusetts.

Craig has published research articles, editorials and commentaries, book chapters, and a book, "Environmental Unions: Labor and the Superfund" (2009, Baywood Publishing Company, Inc.). He is the editor of *New Solutions: A Journal of Environmental and Occupational Health Policy* (SAGE Publications).



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 flyers on the following pages.

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

CAPESYM, INC.

Simulators for HAZMAT & Emergency Response Training



RadSym Smartphone Simulators bring situational realism to Radiation Detection Training without endangering the trainee.

RadSym Smartphone Simulators enable new paradigms in training methodology and course material for **Fire Fighters, Hazmat and Emergency Response Personnel**

RadSym Smartphone Simulators include

- Robust physics-based model of activity of radiation sources
- Effect of shielding
- Source-detector distance
- Response of commercial radiation detectors



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NIEHS SBIR Contract
2R44ES026826-02

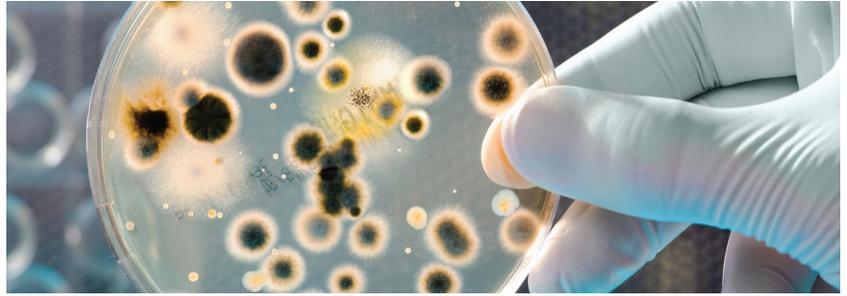
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1.508.653.7100



GRYPHON SCIENTIFIC



Tailored Training Solutions

Gryphon Scientific is a small business based in Takoma Park, MD. We have created training programs for a variety of audiences, including skilled support workers, research scientists, and Fortune 500 corporations. Our team of experts can create research-based, interactive training materials on platforms ranging from paper-and-pencil classroom events up to 3D virtual world simulations. Check out our previous NIEHS SBIR projects on this flyer!

Biohazard Training for Construction Workers

Do your workers know how to protect themselves from exposure to infectious disease or biohazards when they respond to a natural disaster, a major accident, an infectious disease outbreak, or a bioterror event? Gryphon Scientific has prepared a package of two products, backed up by scientists and disaster response experts, that will teach your team how to operate safely in work sites contaminated with biological agents.



BioDisaster Response



For more information visit: www.biodisaster.com




Contact Us to Learn More

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 240-485-1041

Funding

1R43ES020140-01
 2R44ES020140-02
 5R44ES020140-03
 1R43ES025448-01

Interactive Training in Emergency Operations

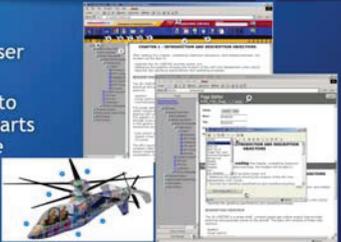
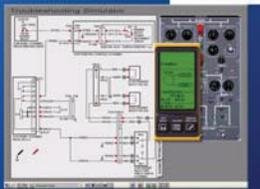
'Citizen responders' – including Community Emergency Response Teams (CERT) and the Medical Reserve Corps (MRC) – provide critical emergency support functions, however continuing education opportunities and ongoing skills assessments are limited for these communities. To maximize the efficacy and safety of these responders, we are developing a free mobile training platform that can be used by citizen responders to regularly refresh their skills.

See the Phase I prototype in action:
<https://youtu.be/-AqYDXy8irw>




Capabilities Snapshot

inXsol is a Phoenix AZ based small business in the eLearning space with 20+ years in operation. We develop award winning courseware, performance support tools, training simulations, IoT integrations, learning management system portals, courseware authoring tools and related enterprise applications/integrations. We are multiple awardees for innovation under SBIR grants.

<h3>HazReady - LMS/LCMS</h3>  <ul style="list-style-type: none"> • Learning Management • eLearning/ Instructor Led and Blended Learning • Online Assessments and Surveys  <p>NIH, Department of Homeland Security, ETH, University of Arizona, United States</p>	<h3>HazPrep - Health and Safety Community of Practice/Social Learning</h3>  <ul style="list-style-type: none"> • Large Dynamic Library of OSHA Incidents • Localized mapping and site view • Discussion threads with conversation starters • Relevant resources (videos) for incident • Social share links, PPE selections, Assessment items, Leaderboard ... <p>"It's like LinkedIn or Facebook except for training."</p>
<h3>Device Development R&D "ExposureTrack"</h3> <ul style="list-style-type: none"> • Design and prototype an exposure tracking device for first responders • Work with ASU researchers on nano technology sensors • Develop cloud based data and visualization tools  <p>Commercial-off-the-Shelf Sensor Integration</p> <p>GoPro, ASU</p>	<h3>BlueCard Incident Command Certification Program</h3> <ul style="list-style-type: none"> • 41 thousand students who have completed the 50 hours of online training • 25 thousand users who have been certified • ACE accredited curriculum 
<h3>CommandPlan Online Simulation</h3> <h4>Trainee Environment - User Interface</h4>  <h4>Authoring Environment (Sample 1)</h4>  <p>Authorable, Cloud Based, Google Maps, Speech Synthesis, AI engine</p>	<h3>Capabilities Examples - IETUM Comanche</h3> <ul style="list-style-type: none"> • Develop Interactive Electronic Technical User Manuals (IETUM) • Draw from Cad/CATIA to web ready navigable parts breakout or explorable models. 
<h3>Capabilities Examples - Honeywell</h3> <ul style="list-style-type: none"> • Honeywell Aerospace - create a library of eLearning for a product line of Engines, Auxiliary Power Units and Environmental Control Systems. • Create a suite of lab/instructor led simulations to illustrate the theory of operations or allow for training on control panels and diagnostic equipment.  <p>Honeywell</p>	<h3>Capabilities Examples - SimuFlite</h3> <ul style="list-style-type: none"> • Create a library of computer aircraft training simulations • Develop a gaming architecture which accumulates time and costs as LRU's are replaced or diagnostic procedures done  <p>SimuFlite</p>

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NIEHS SBIR Contract Numbers:
ExposureTrack : 1R43ES022919-01A1
HazPrep: 1R43ES028145-01
HazReady: 2R44ES021640-02
CommandPlan: 2R44ES015697-02



The Realistic Adaptive Interactive Learning System (RAILS) is a computer-based suite of training tools that allows HAZMAT workers, first responders, and other professionals to **train and practice in realistic virtual hazardous materials scenarios.**



Leveraging off of Spectral Labs' experience developing, manufacturing, and delivering detection equipment for hazardous materials, RAILS provides the trainee with accurate virtual instrument indications from **simulated radiological, chemical, and explosives threats.**

In addition to the instrument-based training, RAILS supports other aspects of operations such as general hazard awareness, documentation and records search, and site control. Can be used as independent study, in conjunction with other course work or in classroom settings to provide comprehensive Hazardous Waste and Emergency Response (HAZWOPER) training.

RAILS optionally includes a complete Learning Management System to administer and track training.

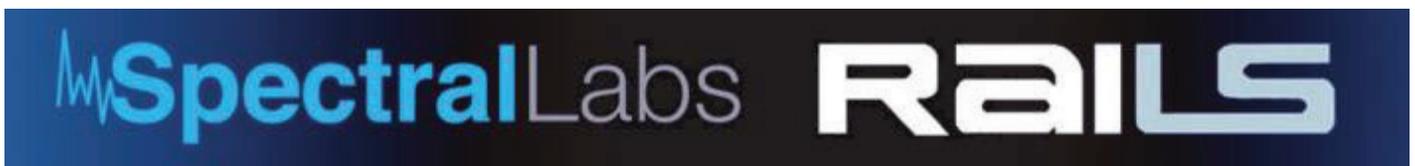
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NIEHS WTP SBIR Contract:

Realistic Adaptive Immersive Learning System (RAILS) for HAZMAT Site Monitoring Characterization and Remediation Training
 Grant Number: 1R43ES028143-01





Augmented Reality for HAZMAT Field Exercises

In partnership with the Rutgers Center for Public Health Workforce Development

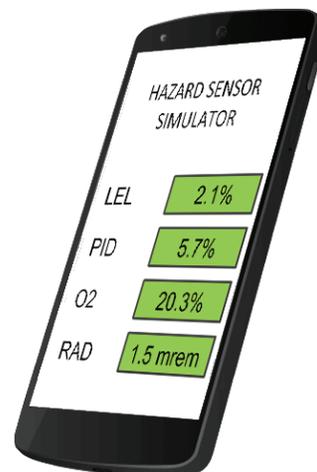
Complete your field training exercises with handheld sensors that interact realistically with your mock hazards

- Learners perfect hazard detection and classification skills.
- Instructors focus on assessment, not dictating exposure levels from the sidelines
- Realistic training exercises with multiple simultaneous teams, hazards, and sensors.



Low cost, easy to use, and configurable

- The HAZMAT Augmented Reality App converts any Android cell phone into a handheld sensor.
- Place a Bluetooth beacon on each hazard (waterproof, 5-year battery).
- Each beacon has its own programmable hazard type, leakage rate, and radiation level.
- No limit on the number of hazards or sensors at the training exercise.



Contact:

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973-718-2450 <http://cellpodium.com>

211 Warren Street, New Jersey Institute of Technology, Newark, NJ 07103-3568

NIEHS SBIR Award:

1R43ES028142-01

2R44ES028142-02

DETech

specializes in a wide range of training and consulting services in science, technology, and emergency management and planning. DETech provides services to federal, state, and local governments, as well as corporate customers.

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- Web & Video Training Development
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DETech has used NIEHS SBIR grants to develop blended learning training. A completed course was developed to provide HAZWOPER training for Death Investigators. (1R43ES019006-01A1 & 2R44ES019006-02). In progress is training for oil spill response workers who are using in-situ burning as a response mechanism (1R43ES028147-01).

Training of Death Investigators for Operating at Chemical, Radiological and Biological Events

Coroners, Medical Examiners, Homicide Detectives and their staffs who investigate deaths in hazardous materials environments are at risk of harm unless appropriately trained. This course is designed to provide practical training relevant to the job tasks of death investigators.



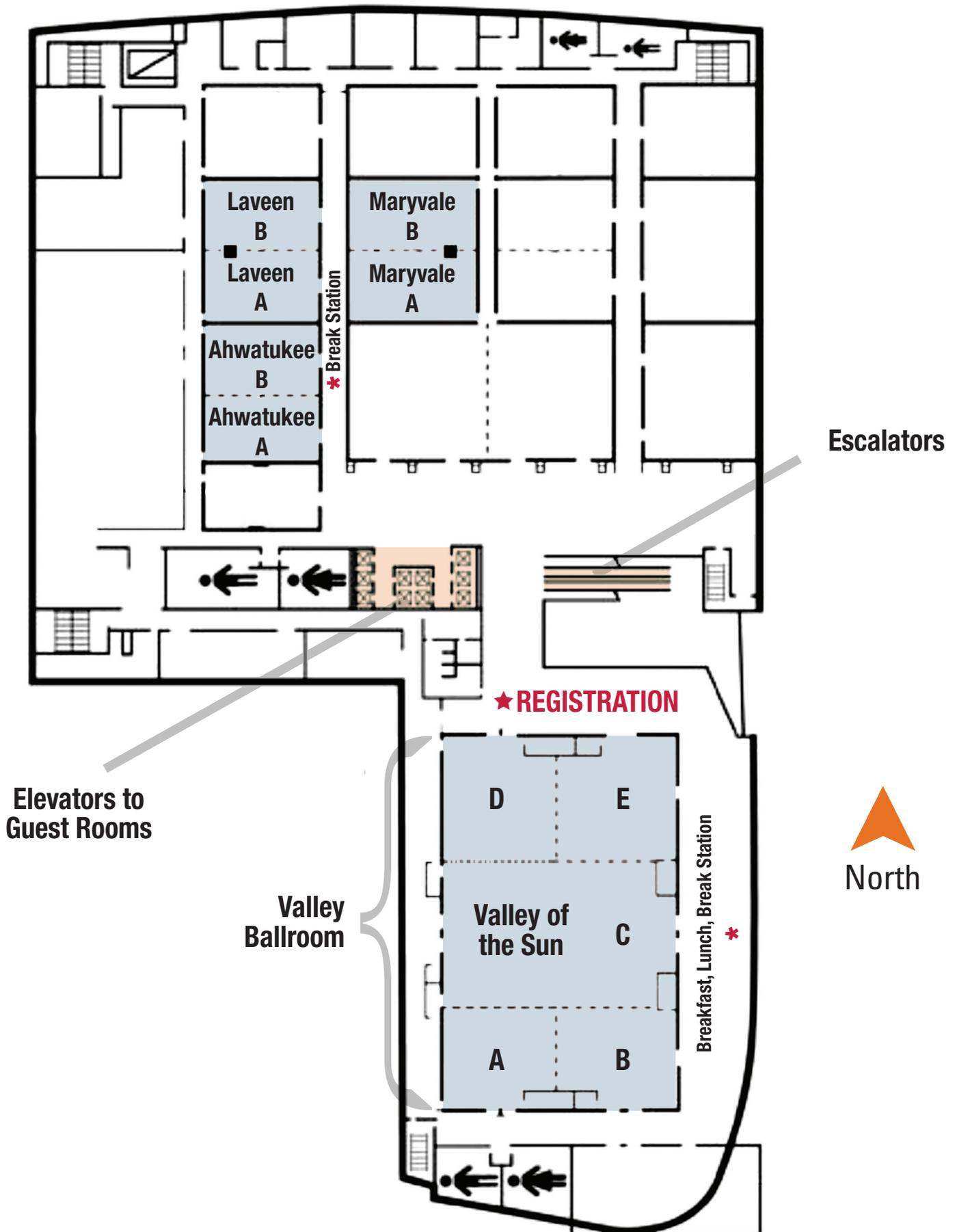
This blended learning course consists of two parts.

First, an on-line part consisting of traditional directed learning that is self-paced by the learner.

It is followed by 16-hours of in-person training in a group setting for development of hands-on skills and an opportunity to use all the knowledge acquired on the course to address a realistic training scenario.



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