Billy Bullock, DIHSc, MSPH, CIH, CSP, FAIHA - Preparing for the Black Swan - Strategies for Effective Risk Communication Following an Emergency Event or Disaster

Abstract

The science of emergency response preparedness has advanced over the past 30 years, but the human brain has not fundamentally changed in thousands of years. Communicating OEHS concepts is a priority for all occupational hygienists – but how can you help workers, management, and the community better understand the importance of these concepts?

Effective communication is a learned skill. Building trust and empathy are critical in any two-way conversation, and listening is often the most crucial aspect in effective communication. Having a well laid out plan is a critical element for any successful emergency response. Once the bad thing happens, it is difficult, if not impossible to earn trust within the community. Trust must be earned and part of your preplanning efforts. Preplanning must include elements aimed at developing a solid reputation and building trust within communities and/or among stakeholders. This talk will focus on the following elements of communication after an emergency event has occurred (using first-hand experience from train derailments in the U.S.):

- the importance of effective communication and the relationship between engagement and outrage,
- the importance of preparing a communication plan for when (not if) an emergency event occurs,
- how companies / organization can build trust and develop positive relationships before the emergency event occurs.

Speaker Bio

Dr. Bullock has practiced professionally and held academic and instructional positions for 38-years. His breadth of education, experience, and professional certifications have served the public, industrial, and commercial sectors, in the health, safety, exposure assessment science, and emergency response disciplines.

Dr. Bullock is currently the Principal Industrial Hygienist at Environmental & Industrial Hygiene Services, and was formally the Director of Industrial Hygiene for CSX Transportation. While serving as the Director of Industrial Hygiene included, he was responsible for the oversight of industrial hygiene programs, medical surveillance, and worker training for CSX operations within the U.S. and Canada. His previous positions included Global Manager of Health & Safety for the Arizona Chemical, and Sr. Process Industrial Hygienist for International Paper. Dr. Bullock is a past chair of the AIHA Exposure Assessment Strategies Committee and co-editor of the 3rd & 4th editions of the text (A Strategy for Assessing and Managing Occupational Exposures). Dr. Bullock holds adjunct appointments at Emory University's Rollins School of Public Health; Columbia Southern University; the University of West Florida's School of Public Health, and Tulane University Center for Applied Envi-ronmental Public Health.

Dr. Bullock is a board Certified Industrial Hygienist and a Fellow of the American Industrial Hygiene Association. Dr. Bullock served as an elected member of the Board of Directors for the American Industrial Hygiene Association. He is also a board Certified Safety Professional.

Steven Merritt, MHP, CIH, REHS - Region 8 EPA – Federal Response to Rail Incidents

Abstract
This presentation will contain an overview of EPA's Emergency Response Program and the National Response System, as outlined in the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300). It will also highlight EPA's response authorities/assets for petroleum/oil spills under the Clean Water Act, as amended by the Oil Pollution Act of 1990 (CWA/OPA), using the Stillwater, MT train derailment case study and hazardous substance response authorities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), using the East Palestine, OH train derailment case study.
Speaker Bio
Steven Merritt is the supervisor of the Preparedness and Site Assessment Section of the US EPA Region 8; and a lieutenant commander in the US Public Health Service. He is responsible for managing a team of 14 scientists and engineers charged with environmental compliance assistance to industrial facilities subject to preparedness provisions within the Clean Air Act and Clean Water Act/Oil Pollution Act, oil spill prevention and spill response capacity building, conducting outreach to build response capacity, providing contracting support and site assessment services to the Response Section, and performing contingency planning for the Emergency Management Branch and the Regional Response Team. The Preparedness and Site Assessment Section conducts inspections and response drills at petroleum storage facilities, works closely with hazardous chemical facilities to address process vulnerabilities and potential release scenarios, works closely to ensure facilities conduct proper notifications to local stakeholders, that local first responders and emergency managers have adequate response plans, and that the community has sufficient response capabilities to prevent harmful exposures to the public during a spill or chemical release.

Tim Mueller, CSP, CHMM - Integrated Missile System Manufacturing & Test Safety and Health

Abstract
Inadvertent activation of missile ordnance components or other unplanned high energy releases in the factory or at the test range yields a very bad day. Avoiding such occurrences while managing contractual, compliance, and safety risk management aspects is most effectively accomplished through integrating industrial safety & health requirements and controls throughout the missile system program's lifecycle. Methods for protecting personnel and facilities overlap with a parallel product system safety process. Closely coordinating like elements of industrial safety and missile system safety allows for a symbiotic focus on like operational safety elements. This presentation describes how operational safety and health management system elements can be efficiently integrated into missile system programs from the proposal stage through design, manufacturing, test, deployment, and close-out in a manner that supports program management in achieving cost, schedule, performance, and risk management objectives
Speaker Bio
Tim is the Principal Environment, Safety and Health Engineer for Lockheed Martin Space, and an LM Associate Fellow. He holds CSP and CHMM certifications and is a Lean Six Sigma Black Belt. He has supported LM Space's NASA and DOD programs and Facility operations across the country for 37 years.

Shawn Vecellio - Always Moving Forward

Abstract
This presentation will give an overview of railroad safety and training issues, with case studies. Additionally, it will cover the history and on training opportunities at the SECURITY AND EMERGENCY RESPONSE TRAINING CENTER (SERTC), a world-renowned program for surface transportation hazmat emergency response.

Speaker Bio
Shawn is the Senior AVP of Operations and Safety at MxV Rail. Because Shawn believes that understanding each other's professional journeys can help us collaborate more effectively and leverage diverse expertise, here is a bit more about his experience prior to joining MxV Rail in 2021. Before joining MxV Rail, Shawn served as the Assistant Vice President of Engineering for Kansas City Southern, Kansas City De Mexico, and Panama Canal Railway. In this role, he was responsible for overseeing capital programs, track maintenance, testing, and standards for the U.S., Mexico, and territories. It was an enriching experience that allowed him to gain valuable insights into the complexities of managing railway operations across different regions. His career in the railway industry began with the Santa Fe railroad, which later merged into the BNSF. During his tenure there, he had the opportunity to develop a strong foundation in the field. He then went on to hold leadership positions with CSX and OmniTRAX, where he further honed his skills and contributed to the growth and success of these organizations. Having just celebrated his 28th year in the industry, he has had the privilege of witnessing and adapting to the various transformations and advancements that have shaped the field. The rich experiences and knowledge he has accumulated throughout his journey have equipped his with a comprehensive understanding of the railway industry's intricacies. On a personal note, Shawn grew up in Trinidad, Colorado, a place that holds a special place in his heart. The small-town atmosphere instilled in him a strong work ethic, a sense of community, and a passion for making a positive impact in the railway industry.

Rob Strode, MS, CIH, FAIHA - A BIOAEROSOLS PRIMER

Abstract
This presentation seeks to provide the audience with an understanding of what constitutes a bioaerosol, and introduces the source, pathway, receptor paradigm of bioaerosol exposures, hazards, and risks. The presentation will assist the attendees in understanding how bioaerosols differ from other aerosols and present unique challenges in comparison to inanimate bioaerosols (e.g., chemicals and minerals). Characteristics of bioaerosols will be presented along with the determinants of exposure that contribute ultimately to bioaerosol health risks. The presentation will describe how bioaerosols present unique challenges in their anticipation, recognition, evaluation and control. While infectious bioaerosols are the major focus of the presentation, non-infectious bioaerosols also will be discussed. Presentation topics will include an introduction to basic definitions and properties, the cascade of infection, methods of transmission, the use of predictive models, and common controls. Finally, the precautionary principle concept will be discussed as it relates to bioaerosol assessment and response actions.

Speaker Bio
Rob is currently an Associate Scientist Chemistry & Industrial Hygiene, Inc. and owner of Summit Exposure and Risk Sciences, LLC. He has Bachelors and Masters degrees in Microbiology. His current area of practice focuses on workplace and environmental exposure assessment and risk characterization. He provides both retrospective and prospective exposure and risk assessment analyses, data interpretation, and report review for chemical, physical, and biological agents using state-of-the-art practices and methods. He has authored and/or provided publications and presentations in the fields of chemistry, industrial hygiene, exposure assessment, and microbiology. Rob has over 40 years of laboratory and consulting experience in the areas of microbiology, chemistry, industrial hygiene, and environmental investigations and remediation.

Michele Twilley, DrPH, CIH - Emergency Response Planning Guidelines

Abstract

Emergency Response Planning Guidelines (ERPGs) save lives. These are values developed by AIHA volunteers for chemicals with high potential for uncontrolled releases or pose hazards due to their volatility or toxicity. The values are used to assist OEHS professionals in the development of emergency response strategies for protecting workers, emergency responders, and the public from a catastrophic chemical release. The highly valued ERPGs are used by the US Federal government (ex., EPA, DOT, DOE, NOAA), foreign governments, private industry, and emergency responders.

Speaker Bio

Dr. Twilley is the resident Certified Industrial Hygienist with the American Industrial Hygiene Association. She has over 35 years of experience in providing emergency spill response, environmental health hazard investigations, environmental remedial investigations and feasibility studies, risk assessments, indoor environmental quality and occupational hygiene consultation. Her work has been performed on military installations in industrial facilities, housing, research laboratories, government, healthcare, and educational buildings throughout the northeast and mid-Atlantic United States.

Beside the CIH, she has training in and has held licenses and certifications for asbestos, lead paint, drinking water, and hazardous waste operations and emergency response. She received her Bachelors of Science degree from Towson State University in Natural Science with an Environmental Science Concentration in 1988, her Masters of Health Science in Environmental Health Science, Industrial Hygiene and Safety from Johns Hopkins School of Hygiene and Public Health in 1998, and her Doctor of Public Health degree from Johns Hopkins University, Bloomberg School of Public Health in 2008. She also earned a Certificate in Risk Science and Public Policy from Johns Hopkins in 2002.

At AIHA, Dr. Twilley serves as a technical resource to staff and supports a global committee of volunteers comprised of industrial hygienists, inhalation toxicologists and physicians who produce the AIHA Emergency Response Planning Guide (ERPG). The guide is intended to assist emergency response personnel in planning for accidental or intentional catastrophic chemical releases to the community.

Cynthia Ellwood, PhD, CIH, FAIHA and Suzanne Blevins, BS, SM (ASCP) - Evaluating the Patient Environment as a Targeted Bioaerosol Surveillance in Health Care

Abstract

This presentation will outline bioaerosol surveillance in the healthcare environment, having the perspective of both an in-house hospital IH and IH healthcare consultant. Topics covered include discussion of important microbial species in the healthcare environment; differentiating between the various accrediting bodies in healthcare; how to prepare a sampling strategy, which involves decisions regarding when/where to sample for bioaerosols, selection of the proper media and instrumentation, lab analysis (with insight from an EMLAP-certified lab director), interpreting sampling results; and developing a sampling program for healthcare areas. There will also be a case study presented that encompasses these topics.

Speaker Bios

Suzanne Blevins, founder of Aerobiology Laboratory in 1997, and Laboratory Director, is a graduate of Virginia Tech. She has forty-seven years of experience in areas of clinical, environmental and healthcare microbiology, building science microbiology and industrial microbiology. Aerobiology, now in its 26th year is a business unit under Pace Analytical Services. Aerobiology has a national presence with accreditations and certifications by organizations AIHA, NVLAP and state ELAP agencies for environmental microbiology and asbestos testing. Locations include the Washington DC area, Cherry Hill, New Jersey, Boston, Atlanta, Fort Lauderdale, Chicago, Denver, Phoenix, Huntington Beach, CA, Dallas and Seattle. Suzanne is also an owner of Apheresis Associates of Northern Virginia which is a collection clinic for donors of stem cells for patients with leukemia, lymphoma and multiple myeloma through the National Marrow Donor Program.

Cynthia is the owner and Principal Industrial Hygienist at Associates in Occupational + Environmental Health, an industrial hygiene and safety consulting firm. She received her B.S. from Ohio University and Ph.D. from Colorado State University. Cynthia has provided consulting services for over 35 years in the fields of healthcare infection control, employee exposure assessments, retrospective occupational disease investigations, indoor air quality, local exhaust ventilation system evaluation, development of comprehensive safety and health programs, and academic and professional education. She has served as adjunct faculty for Ohio University and is currently an affiliate faculty member at Colorado State University.

Cynthia has been a Certified Industrial Hygienist, comprehensive practice, by the American Board of Industrial Hygiene since 1993. In 2007, Cynthia was a recipient of the American Industrial Hygiene Association Fellow Award.

Mike Rose, CIH, CSP, CHMM - How To Drive Cultural Change Through Effective Training

Abstract
I've attended and presented too many to count (likely over a thousand) EHS trainings. Some have been great, some, not so much. One of the most important touches an EHS professional can make is through training. Both formal training and individual moments with employees have the opportunity to drive the change we all desire in our safety culture. If the methods used are not appropriate for the audience or the subject, or the presenter is ill-prepared, you may be wasting valuable resources (time and money) and worse, damaging the culture you have worked to hard to build. I plan to share the best practices I've learned as a consultant as well as several cringe worthy moments to help everyone find their voice and move towards becoming a great trainer.
Speaker Bio
Mike Rose has nearly 20 years of environmental, health and safety experience in construction, manufacturing, and mining operations for both private industry and government clients. Most of his career has been as an EHS consultant based out of Denver Colorado.

Jim Dennison, CIH, PhD - Beyond Meth: What's Next (Fentanyl and Analogs)?

Abstract
There are growing instances of alleged fentanyl use in Colorado and some buildings come back positive to fentanyl. One way to look at this problem is until they regulate fentanyl, we can't do anything. However, some stakeholders will want to consider taking action. This talk will review the Fentanyl situation, regulations/lack thereof, sampling methods, and analytical methods. What are fentanyl analogs? How can fentanyl remediation be done, with and without meth? What about Cleanup Standards? What about other drugs like heroin?
Speaker Bio
Jim Dennison is a Certified Industrial Hygienist and holds a Ph.D. in Environmental Health (Toxicology) from CSU. He is a Project Manager at Century Environmental in Fort Collins and regularly performs meth assessments along with other IH projects.

Rachel Romero, PE and Otto VanGeet, PE - Smart Labs: Ushering in the New Age of Laboratories

Abstract

Ventilation is a defense mechanism to mitigate airborne hazards produced during research activities in laboratories. Yet as a vital component to maintaining healthy, safe, indoor air quality, laboratory ventilation systems can fall victim to ineffective operation, posing a risk to researchers.

This presentation outlines how laboratory professionals can employ a Smart Labs program to plan, assess, optimize, and manage high-performance laboratories through a combination of physical, administrative, and management techniques geared towards improving ventilation system performance. This includes piloting a laboratory ventilation risk assessment, a systematic process for identifying risk from airborne hazards and informing dynamic demand-based ventilation to enhance laboratory safety and energy efficiency.

Structured as a choose-your-own-adventure presentation, audience members will be walked through how to conduct a laboratory ventilation risk assessment, such as learning how to perform a series of laboratory surveys and how to assign each laboratory characteristic with a risk control band. Audience members will also receive a demonstration on how to use the Laboratory Ventilation Risk Assessment Tool, available under the Smart Labs Toolkit. This tool guides users through the steps of a laboratory ventilation risk assessment and provides ASHRAE laboratory ventilation design levels to calculate recommended air change rates based on the laboratory's overall risk assessment.

Speaker Bios

Rachel Romero, PE, is a senior engineer and project leader at the National Renewable Energy Laboratory (NREL). Rachel obtained her Bachelor of Science in Mechanical Engineering from Hope College and then received her master's degree in Building Systems Engineering at the University of Colorado Boulder. She received her PE in 2014. Rachel is an active member of ASHRAE, currently serving on the Residential Buildings Committee.

At NREL, Rachel provides technical assistance to the to the Department of Energy's Smart Labs program, which provides technical assistance to university and national laboratory partners across the United States. She was a main author of the Smart Labs Toolkit, which describes a systematic process to achieve safe, efficient, and sustainable laboratories. Rachel is also the project manager for the U.S. Department of Energy Solar Decathlon, which has inspired tens of thousands of students to be the next generation of zero energy buildings professionals.

Otto VanGeet is a Principal Engineer at NREL. Otto has been involved in the design, construction, and operation of energy-efficient research facilities such as laboratories and data centers, office and general use facilities, and low-energy-use campus and community design. He was one of the founding members of the Laboratories for the 21st Century (Labs21) program, an early version of Smart Labs, and continues to provide technical guidance for the Smart Labs program. His experience also includes renewables screening and assessment, PV system design for on- and off-grid applications, energy audits, and minimizing energy use. Otto has authored many technical reports and conference papers and been recognized with many awards from professional associations, including the 2007 Presidential Award for Leadership in Federal Energy Management and the 2011 GreenGov Green Innovation Presidential Award for the NREL Research Support Facility data center. He lives with his family in a zero electrical energy off-grid passive solar house with a 2 kW PV/hybrid power system and solar water heating that he designed and built 25 years ago.

Brandy Howard, PE, CIH, CSP, Paulette Reading, Mark Nelson, and Katie Ross - Museum Poisons Test Kit: Project Update

Abstract

The presence of potentially hazardous artifacts in cultural institutions presents a long-standing problem that poses significant health risks to museum workers. Contaminated collections endanger not only staff, but students, interns, volunteers, researchers, consulting Native American tribal members, and visitors. Furthermore, direct handling of the artifacts is not required to present risk of exposure. Artifacts treated with pesticides or manufactured with toxic chemicals leave hazardous residue on storage or exhibit surfaces due to degradation over time. This presents a universal problem. Cultural institutions of all types and sizes, from cities to remote locations, with historical objects representing all cultures, can find hazardous artifacts in their collections.

Chemicals including mercury and arsenic were applied to artifacts from the late 1800s well into the twentieth century as pesticides. The passing of NAGPRA in 1990 has brought this issue to the attention of institutions addressing repatriation of human remains, funerary objects, sacred objects, and cultural patrimony. In addition to applied pesticides, many artifacts contain harmful chemicals as part of their manufacture, such as natural history specimens or textiles containing toxic dyes.

While this issue is not new, museum workers show differing levels of knowledge as to the presence of hazards. Museum personnel who may be aware of potential hazards often lack the knowledge and resources to address the problem. In this presentation, we will present a project that aims to close this knowledge gap, and to provide accessible and affordable solutions to address this widespread risk.

The authors, representing a collaboration between conservation and industrial hygiene, were awarded a research grant through the CDC NIOSH Mountain and Plains Education and Research Center to support their project, “Museum Poisons Test Kit”. The only way to know with any certainty if hazardous materials are present is by chemical analysis. Elemental analysis using handheld x-ray fluorescence spectroscopy (pXRF) has become the go-to technique to identify the presence of inorganic metals/pesticides by the conservation community. Access to this technology remains largely inaccessible to the wider cultural heritage population. Institutions with limited budgets to obtain instrumentation, and lacking conservation departments (most institutions), face multiple barriers including lack of staff training to perform tests and interpret results, and access to a safety professional with expertise in hazard identification and control. Mishandling of hazardous collections not only puts people at risk but poses an environmental hazard.

The grant period ended on June 30, 2023. The research group previously presented the aims of the research last year and seeks to provide an update on the findings of the study at this years conference. This presentation will include a description of the study, share some of the key findings, and will include a panel of some of the participants to share their experiences with working as part of this research project.

The panel will include two research partners: one conservator, and one industrial hygienist. It will also include two members of the collection staff of participating museums.

Speaker Bios

Brandy Howard, PE, CIH, CSP is the Group Manager of Industrial Hygiene and Asbestos at Terracon's Denver Office. Ms. Howard holds a BS in Engineering and a MS in Environmental Science and Engineering from the Colorado School of Mines. Ms. Howard has over 12 years of diversified professional experience in the EHS field. Brandy was the former Membership Director and Website Director for the Rocky Mountain Location Section of the AIHA and currently serves as a steering committee member for the National AIHA Museums and Cultural Heritage Working Group.

Paulette Reading has worked as a textile conservator in private practice for seventeen years. Clients include museums, historic houses, and private clients. She has presented workshops and lectures for museum staff in health and safety practices with a focus on artifact contamination. She is a professional associate of the American Institute for Conservation (AIC) and has held a leadership role with the AIC Health and Safety Network since 2019, and serves on the newly formed Contamination & Pesticides Repatriation Working Group. She has an M.A. in Art Conservation.

Mark Nelson is the Head of Collections Management and Registration at History Colorado. He has been with the organization for 4 years and is based out of Denver at the History Colorado Center. Mark has his Master's degree in Anthropology from George Washington University. Prior to moving to Colorado he has worked with other cultural organizations such as George Washington's Mount Vernon and the National Park Service.

Katie Ross is the Curator of Collections of the City of Greeley Museums. She has been in this position for 3 years and held other positions within the Museums Collections Department since 2012. She is also the Museums lead staff member on emergency preparedness and planning. Katie holds a Master's degree in Anthropology and a Certificate in Museum Studies from the University of Wisconsin-Milwaukee.

Dina Siegel, CIH, CsP, CBSP, DABT - An Update from AIHA National

Abstract
This presentation will provide an AIHA National update, with an emphasis on the grand challenges and AIHA pipeline initiatives.
Speaker Bio
Dina Siegal is currently providing program management in chemical safety (Chemical Hygiene Officer), biosafety (Biosafety Officer), exposure assessment, and glovebox safety at Los Alamos National Laboratory. As a member (and former chair) of the Energy Facilities Contractors Group (current Vice Chair of the Worker Safety and Health Subgroup), and Industrial Hygiene, Safety, and Chemical Management Task Team, she led numerous projects such as exposure assessment applications for real time monitoring, training for the revised Hazards Communication Standard/GHS, Performance Improvement Tools, chemical management issues, and chemical safety trend analysis. As one of the DOE representatives to the Federal Experts Security Advisory Panel, she helped create nation-wide guidance for implementation of revised select agent requirements. As a deployed industrial hygienist at LANL, she supported research and operations, and provided DOE complex-wide expertise in engineered nanoparticle safety. Previous employment included Group Leader of the LANL Industrial Hygiene and Safety Group, regional manager for health and safety for Foster Wheeler Environmental Corporation, IH Program Administrator at Rocky Flats Plant, and Industrial Hygienist for the Department of Army. She has chaired or been a member of numerous AIHA Volunteer Groups and the AIHA Board of Directors (BoD) and is the current President Elect of the AIHA (BoD).

Jenn Sahmel, PhD, CIH, CSP - The Totals: What are Total Worker Health, Total Exposure Health, and Total Worker Exposure, and How Do They Relate to Each Other and the Role of the OEHS Professional?

Abstract
As working and work environments change, comprehensive approaches are needed to address complex questions related to human health and well-being. The scope of worker exposure and risk assessment has expanded to include physiological stressors, psychological stressors, behavioral stressors, and economic stressors. Evidence suggests these stressors create complex psychosocial and socioeconomic issues and significant health effects. Worker exposures are recognized to have considerable potential impact outside of the workplace, which in turn can directly affect the individual, community, and public health overall. There are several approaches that have been proposed to address these concerns in different ways, including Total Worker Health® from NIOSH, Total Exposure Health, and Total Worker Exposure, sometimes referred to as The Totals. There has been some confusion on the part of OEHS professionals regarding both the overlap and distinctions between these approaches. This session will discuss these similarities and differences in greater detail, as well as practical application considerations for the practicing professional.

Speaker Bio
Dr. Jennifer Sahmel is a Managing Principal Scientist with Insight Exposure and Risk Sciences in Boulder, Colorado, where she works on a wide range of projects related to human health exposure and risk assessment. She is a Certified Industrial Hygienist and a Certified Safety Professional with over 25 years of experience in exposure assessment science and workplace health and safety. Her areas of expertise and research include risk assessment and exposure assessment and reconstruction, and she has co-authored over 30 peer-reviewed papers and 9 book chapters in these areas. Prior to Insight, she worked at Cardno ChemRisk, the U.S. EPA's Office of Pollution Prevention and Toxics, the National Park Service, Comprehensive Health Services at NASA's Goddard Space Flight Center, and FMC Corporation. Jennifer earned her MPH degree in Environmental Health and Industrial Hygiene from the University of California at Berkeley and her PhD in Environmental Health at the University of Minnesota. She is a Research Fellow and Affiliate Assistant Professor with the University of Minnesota School of Public Health and their Exposure Science and Sustainability Institute. She is also active in the American Industrial Hygiene Association and is a past member of their national board of directors.

Derek Drechsel, PhD, CIH, DABT - Mercury Spill Case Study: The Elements of a Successful Response

Abstract
Elemental mercury is used in a variety of daily applications and spills of the liquid material can present hazards to workers and communities. Mercury responses can be particularly challenging to responders due to volatilization of the liquid at room temperature, accumulation of high vapor levels in indoor air, and tracking of spilled liquid across multiple locations. This presentation details a recent case study involving a spill from a mailed package that affected locations across three southwestern US states. The first step of any investigation into spilled mercury is to delineate the potential impact to occupational and residential environments using appropriate equipment ranging from real-time air monitoring to wipe sampling. Based on the initial investigation, action levels, additional screening, and remediation plans can be developed for various scenarios such as testing of packages, personal belongings, workers vehicles and residences as necessary. Health protective action levels are established or purposes of preventing adverse health effects in workers and communities and to identify when precautions (e.g. PPE, discarding of items, evacuation) are necessary to prevent adverse health effects in remediation workers and impacted individuals. Finally, considerations for remediation and re-occupancy are dependent upon the environment and priority goals of the response. Each of these steps will be presented in the context of the case study, allowing for consideration and discussion of unique scenarios. This presentation will also discuss guidance put forth by the USEPA and ATSDR for residential mercury spills and how they can be adapted for multiple scenarios. From this presentation, the audience will gain an understanding of the important considerations when faced with an elemental mercury spill and strategies for successful remediation and health protection of all impacted parties.
Speaker Bio
Dr. Drechsel works in the Golden office of CTEH, an environmental consulting firm specializing in human health risk assessment and emergency response. Dr. Drechsel has a PhD in toxicology from the University of Colorado and is a certified industrial hygienist. He has experience in responding to chemical releases affecting the workplace, community, and environment.

John Wagle - Intelligent hazard modeling and Hazmat response

Abstract
An integrated hazard modeling platform allows users to twin hazardous gas detectors in a cloud-based platform while also running realistic models of a hazardous event (fire, explosion, chemical plume, and more.). The data from these detectors can be used to guide the models to provide best in class predictive models. These models are overlain on live maps to predict impact to facilities, workers, and communities. Using a web based platform as a common operating picture enables constant communication of the hazardous gas detection devices with a central platform (and each other) which allows us to keep workers and emergency responders away from the evolving hazards. We can also ensure the community is kept informed and safe by coordinating with various agencies and guiding critical response decisions, such as when to issue a shelter in place order or evacuate.
Speaker Bio
John Wagle is the regional business manager for SAFER North America. He has 15 years experience in the oil and gas industry, with an emphasis on enhancing workflows and optimizing results. He holds a master degree in Geology from Illinois State University.

Melissa Blevens, MS - Occupational Noise Exposure and Hearing Assessment of Fracing (aka "Fracking") Workers

Abstract
Oil and gas extraction (OGE) companies are exempt from implementing hearing conservation programs and noise monitoring according to the OSHA noise standard. There are no known peer-reviewed studies on OGE worker occupational noise exposure and hearing status before the current study. We partnered with a subcontractor that allowed us to sample at both conventional and quiet hydraulic fracturing fleets. Quiet fleets use engineering controls to lower noise levels while conventional fleets do not. For both fleets, we conducted personal noise dosimetry, equipment noise measurements, and pure tone audiometry pre- and post-work shift to determine if there were temporary threshold shifts (TTS) in hearing. Dosimetry results indicated that 84% (42/50) of the quiet fleet samples and all 100% (34/34) of the conventional fleet workers sampled exceeded the ACGIH noise threshold limit value. Both fleets experienced TTS, but preliminary analysis has indicated no significant difference between the fleet workers. Most equipment of both fleets exceeded 85 decibels, but the pumps of the quiet fleet were ~14 dB lower than the conventional fleet. While this company has engineered the pumps to attenuate noise in the quiet fleet, these workers are still at risk of hearing loss and further controls are recommended. We recommend implementing a hearing conservation program despite exemption to protect worker health.

Speaker Bio
Melissa Blevens, industrial hygiene Ph.D. candidate and former MAP ERC trainee at Colorado State University (CSU). During her Master of Science in industrial hygiene at CSU, Melissa's research focused on nanoparticles, aerosols, and cloth face masks. Her current research focuses on hearing loss risk and occupational noise exposure of hydraulic fracturing workers in the oil and gas extraction sector

James Lieberman, CIH - Evaluating Residences Impacted by Smoke and Products of Combustion

Abstract

Explain why a residence should be evaluated by a professional knowledgeable in the art and science of recognizing chemical and physical hazards when the residence is suspected of having been impacted by smoke and products of combustion from a fire; before damages are calculated.

Describe the evaluation method; the investigation should identify the type of fire (either exterior wildfire or interior house fire); the associated combustion material such as natural organic materials, man-made materials or a combination of both; the location of the fire; the expected characteristics of the smoke produced; and the layout of the residence. The report should describe the nature and location of the contamination found (both chemical and physical), visual observations, and textural characteristics such as oily soot and odor characteristics.

The investigation should provide a characterization of contamination, which should include an opinion from the investigation whether the smoke resulted from oxygen-rich fires (dry) that burned fuel more efficiently and completely, or smoke from slower burning oxygen-starved fires (wet).

The investigator should have formed a hypothesis for what potential impact category the subject property should fit in, ranging from unaffected to severely impacted by conducting offsite research and onsite inspections.

Speaker Bio

James Lieberman has a B.S. degree in chemistry from the University of Richmond and an M.B.A. from the University of Colorado. He is certified by the American Board of Industrial Hygiene for the comprehensive practice of industrial hygiene. He founded and leads Environmental Information Services, Inc a Boulder Colorado based environmental, health and safety consulting firm.

He is the author of A Practical Guide for Hazardous Waste Management, Administration and Compliance and the Business of Environmental Health & Safety Management. He has over 30 years of experience as a practicing industrial hygienist. He has served as an expert witness in cases involving fire and smoke impacted residences and chemical exposure.

He was honored by Colorado Mountain College in 1984 with an award for instructor of the year and in 2009 he was honored by AIHA's Rocky Mountain Section as Industrial Hygienist of the year.

Eva Glosson, MS - Last Day on the Job: Occupational Homicide and Workplace Violence

Abstract
Workplace violence has become an exposure that workers and employers are struggling to cope with as violence finds its way onto the work floor through multiple routes. This presentation will discuss the four types of violence, high risk scenarios through case studies, the key criminological and psychological theories behind aggression and violence, and tools and strategies to reduce workplace violence.
Speaker Bio
Eva Glosson is a researcher and industrial hygienist with project management, consultation, and regulatory compliance experience across the United States and internationally. Eva has worked in a broad range of industries including high technology, warehousing, food and beverage, chemical manufacturing, primary metals smelting, facilities management, death care, adult entertainment, health care, laboratory services, agribusiness, automotive, and construction. Over their career Eva has gravitated towards industries where there are under served and under represented workers, and has focused their career on the ever prevalent hazard of workplace violence and how it is an occupational exposure. Eva has a BS in Geoscience, a MS in Engineering with a concentration in occupational safety and health, and is going back to school to study psychology to better understand workplace violence. Eva is a frequent author in the Synergist and has presented often at AIHce (now AIHA Connect) and would like to share the 2023 presentation from Phoenix about Occupational Homicide and Workplace Violence with the Rocky Mountain Chapter.

Jason Demo – OSHA Region VIII Updates

Abstract
This presentation will highlight current areas of emphasis and updates within OSHA Region VIII.

Speaker Bio
Jason Demo is currently a Compliance Safety & Health Officer with the Occupational Safety & Health Administration (OSHA) serving Region VIII out of the Denver Area Office. Jason has been with OSHA since 2019 and covers many different industries for both safety & health. Prior to OSHA Jason spent 10 years active duty in the United States Air Force serving in multiple roles. Jason has helped OSHA develop training material for both office and field duties for General Industry, Construction, and fatality inspections. While serving in the military, Jason served as a Trainer, Weapons Safety, Ground Safety and Nuclear Weapons Specialist. Jason's academic achievements further underscore his commitment to his practical approach to hazard abatement and safety challenges. Jason holds two Associates degrees in Criminal Justice and Munitions System Technology, a bachelors in Operations Management and is currently working towards a Masters in Occupational Safety & Health. Beyond his professional roles, Jason continues to exemplify his dedication to service by actively participating in the Air National Guard and has done so for the previous five years. His steadfast commitment to both his military responsibilities and his role as an OSHA Compliance Officer showcases his unwavering dedication to safeguarding others. In all his endeavors, Jason Demo remains a driving force in upholding safety standards, both in the realm of military operations and civilian workplaces. His multifaceted background, exceptional skills and common-sense approach makes him an asset in promoting a culture of safety and excellence.

Arlen Siert, PhD, CIH, CSP - Managing Confined Space Hazardous Atmospheres in DIA Underground Electrical Vaults

Abstract
Airport underground electrical vaults are confined space that may contain flammable, toxic, and oxygen deficient atmospheres. Under wet conditions, anaerobic bacteria feed on organic materials/chemicals, generating methane and hydrogen sulfide. Similarly, aerobic bacteria may generate carbon dioxide. Airport vaults may contain organic chemical deicer, jet fuel, and solvents infiltrate the vaults via contaminated subsurface water. Vaults must be entered by trained and equipped workers to perform electrical work, and also to periodically remove accumulated toxic sludge that is corrosive to electrical components and vault structure. This presentation covers the step-by-step precautions to: 1) train and protect entry workers, and 2) identify and control hazardous atmospheres generated in the presence of organic material/chemicals and bacteria.

Speaker Bio
Arlen Siert received from Colorado State University his BS and PhD in Environmental Health with a specialization in Industrial Hygiene, and MS in Industrial Safety. He is a CIH and CSP. He was a Navy Industrial Hygienist working at Naval Air Station Fallon, and later as a programs manager at Mare Island Naval Shipyard working in nuclear submarines and aircraft carriers. For a time he worked under the supervision the Navy's board certified Marine Chemist, and was trained by him in Gas Free Engineering. Marine Chemists are a small group of elite professions considered most knowledgeable in confined and enclosed spaces. He has worked at Xcel Energy for 32 years, and is their Principal Industrial Hygienist and confined spaces subject matter expert.

Brian Oberbeck - Interesting OSHA Cases: Denver Railyard Fatality

Abstract
On June 4, 2020, at a switchyard in Denver, CO, an employee died while moving rail cars into position for unloading soda ash. Each of the four rail cars involved in the accident weighed approximately 286,000 pounds. The employer did not utilize a locomotive or other vehicle to move rail cars. The employer utilized "gravity rolling" to move rail cars, utilizing gravity and the sloping grade of the switchyard to enable the rail cars to roll down the slope controlled only by a single rail car's hand brake. The employee, who moved the rail cars by himself and prior to other workers arriving each day, was found by co-workers crushed between the concrete and earth end of track barrier and the undercarriage of a rail car. This presentation will detail the OSHA investigation, cause of the fatality, violation and citation, industry practice, and the abatement of the hazard.

Speaker Bio
Brian is the OSHA Region VIII state plan monitor. Brian has been in that position for nearly two years. Prior to becoming the state plan monitor, Brian was an Assistant Area Director for the Denver Area Office. Brian began his career with OSHA as a Compliance Safety and Health Officer with the OSHA Denver Area Office. He was a compliance officer for nineteen years. Prior to OSHA, Brian was a Safety Specialist with the University of Wisconsin. He is a graduate of the University of Wisconsin-Stevens Point and Colorado State University. He has a bachelor's degree in Chemistry and a master's degree in Environmental Health (Industrial Hygiene).

Renee Hartsook, PhD, DABT - Occupational Exposure Banding Basics

Abstract
Occupational Exposure Banding (OEB) is a qualitative means to identify the appropriate handling and controls for chemicals for which sufficient data are not available to derive a quantitative limit (i.e., OEL). The purpose of this introductory presentation is to identify the authoritative OEB banding scheme developed by NIOSH and through the use of case studies illustrate the process. This session is intended for EHS individuals who are conversant with occupational exposure banding terminology but who do not have experience in developing or applying banding schemes. As such, this session will place emphasis on the conceptual basis for banding and review relevant terminology
Speaker Bio
Renee Hartsook PhD DABT is a consulting occupational toxicologist with more than 20 years of professional experience. Her focus is on clear communication and process improvement.

David Shapiro - Psychosocial Risk Factors and Musculoskeletal Disorders

Abstract
This presentation aims to explore the significant impact of psychosocial risk factors (e.g., heavy workloads; high work pace, high time pressures; continual and short deadlines; understaffing) on the development and progression of musculoskeletal disorders (MSDs) in the workplace. MSDs are prevalent occupational health issues affecting millions of workers worldwide, leading to significant economic and personal burdens. While physical factors have traditionally been attributed to MSDs, emerging evidence highlights the crucial role of psychosocial factors in their etiology. By understanding and addressing these psychosocial risk factors, employers and health professionals can effectively prevent and manage MSDs, and utilize a Total Worker Health approach to promote healthier and more productive work environments. By the end of this presentation, participants will have gained a comprehensive understanding of the impact of psychosocial risk factors on musculoskeletal disorders in the workplace. They will be equipped with knowledge and tools to identify, address, and prevent these risk factors, thereby enhancing worker well-being, reducing the burden of MSDs, and promoting healthier and more productive work environments.
Speaker Bio
David Shapiro is senior manager of programs and partnerships at the Center for Health, Work & Environment (CHWE) and manages day-to-day operations of CHWE's signature public health outreach program, Health Links. In this role, he consults with organizations in the Health Links Healthy Workplace Network, sharing resources and recommendations to help them implement a Total Worker Health approach and support the health and safety of their teams. Prior to joining the center, David served as the business relations manager for EPIC (Executives Partnering to Invest in Children) where he helped the organization grow from 10 founding members to over 75 executives focused on Colorado's investment in early childhood. David's past work experience also includes a successful sales career in Colorado's ski industry and leading a fatherhood initiative in Summit County (Colorado) Government's Youth & Family Services division. A proud husband and father of three, David is a lifelong learner and relationship builder. His hobbies include tennis, hiking, reading, and RVing.