

National Mine Health and Safety Academy 1301 Airport Road Beaver, WV 25813 October 10 - 12, 2023 msha.gov/tram

EXPAND Your Reach Tram23

TRAINING RESOURCES APPLIED TO MINING



WORKSHOPS



TRAINING MATERIALS COMPETITION



EXHIBITS

Visit the Mine Safety and Health Administration Website at www.msha.gov

Welcome

Welcome to the National Mine Health and Safety Academy and to the 2023 Training Resources Applied to Mining (TRAM) Seminar. TRAM workshops will give participants the opportunity to learn about new developments in health and safety training, to share ideas in small group sessions, and to share new materials in the exhibits.

We are glad that you can be with us and hope you will have an enjoyable and productive stay.

Acknowledgments

We wish to thank all of the presenters who volunteered to share their time and knowledge with others for the promotion of mine safety and health. Without the efforts of these experts, it would be impossible to present a conference of this magnitude. They always come forward so willingly to assist us with this program and for that we are grateful.

MSHA Leadership

Christopher J. Williamson Assistant Secretary for Mine Safety and Health



Christopher J. Williamson, MSHA's Assistant Secretary, was appointed by President Biden, effective Monday, April 11, 2022.

Prior to this he was the senior counsel to National Labor Relations Board Chair Lauren McFerran. Mr. Williamson, a native of West Virginia, worked at MSHA during the Obama administration, advising the assistant secretary on agency policy, operations and communications. He also has served as labor counsel to former Senate HELP Committee Chair Tom Harkin (D-IA) and as a legislative assistant to Sen. Joe Manchin (D-WV). He began his career in public service as an attorney-advisor to Administrative Law Judge Jacqueline R. Bulluck at the Federal Mine Safety and Health Review Commission.

Mr. Williamson earned a Juris Doctor from the West Virginia University College of Law, a Master of Public Policy from American University, and a Bachelor of Arts in Political Science and Economics from West Virginia University.

Julie E. Aaronson Deputy Assistant Secretary for Policy



Julie E. Aaronson began serving as MSHA's Deputy Assistant Secretary for Policy on August 14, 2023.

Ms. Aaronson served as chief of staff at MSHA April 2021 until August 2023, a role she also held from 2010 to 2014. In 2014 she became Associate Assistant Secretary for Budget and Appropriations at the Department of Labor. Prior to 2010, she was legislative director and appropriations associate for Congressman Alan Mollohan (WV-01), a senior appropriator and Chairman of the Commerce-Justice-Science appropriations subcommittee.

Ms. Aaronson holds bachelor's degrees from the University in Kansas in Journalism and Political Science, and a master's degree from The George Washington University in Political Management.

Patricia W. Silvey

Deputy Assistant Secretary for Operations



Patricia W. Silvey is the Deputy Assistant Secretary for Operations, Mine Safety and Health Administration. She was appointed to the position in December 2010.

Before her appointment as Deputy Assistant Secretary for Operations, Mrs. Silvey served as the Director of Standards, Regulations and Variances for MSHA. Prior to this, Mrs. Silvey served as the Deputy Administrator for Metal and Nonmetal Mine Safety and Health, and on an Intergovernmental Personnel Act assignment to the National Safety Council.

In October 1998, she held the position of Director, Office of Administration and Management. In July 1983, she was appointed to the Senior Executive Service as Director

of Standards. In early 1978, she played an integral role in the transition of MSHA from the Department of the Interior to the Department of Labor and the establishment of the Office of Standards.

Ms. Silvey earned her B.S. degree from Tuskegee Institute; M.A. degree from the University of Alabama; and J.D. degree from Georgetown University Law Center. She is a member of the District of Columbia Bar.

Lincoln (Link) Selfe

Superintendent

National Mine Health and Safety Academy

Lincoln (Link) Selfe began his mining career in 1974 as a Management Trainee with Clinchfield Coal Company. He worked as an Engineer, Industrial Engineer, Safety Specialist and Staff Assistant to the Vice President of Operations. He also served as a Section Foreman, Out-By Foreman and Assistant Mine Foreman while at Clinchfield Coal Company.

Mr. Selfe joined MSHA in 1982 as an Inspector and Accident Investigator in District 5, Norton, VA. From 1989 until December 2018 he served in various capacities within management. He served as a Field Office Supervisor in District 6, Staff Assistant, Field Office Supervisor and Roof Control Supervisor in District 3. He served for 17 years as Assistant District Manager in District 4 and also did temporary details as District Manager in District 3, 4 and 5.

Mr. Selfe became a member and Team Captain of MSHA'S Mine Emergency Unit in February 1991 and continued on the Mine Emergency Unit until April 2005. During this time he worked numerous mine emergencies such as fires, explosions, inundations and other emergencies in West Virginia, Virginia, Kentucky, Illinois, Pennsylvania, Alabama, Utah and Colorado while under oxygen in irrespirable atmospheres and in several elevated methane situations. He also responded to the Pentagon after the 9/11 attacks, and to Hurricane Katrina working with OSHA in 2005. Mr. Selfe also was selected from MSHA's Team to work with the Fairfax County

Structure Rescue Team in Morgantown, WV when a coal silo collapsed and fatally injured one person.

Mr. Selfe has represented the United States internationally in various Mine Rescue roles. He served as a Mine Rescue Advisor in Ontario, Canada and Krakow, Poland. He competed as a map man on MSHA's Team in the International Mines Rescue Contest in Louisville, KY in 1999 where they won First Place. He also competed on MSHA's Team in Glogow, Poland in 2004.

Richard B. Pagan

Deputy Superintendent

National Mine Health and Safety Academy

Dr. Richard Pagan is the Deputy Superintendent of the National Mine Health and Safety Academy. He has extensive experience from higher education, business, and the military having held positions as vice president of academic and student affairs, corporate senior vice president, campus director, division chair (dean), program coordinator, faculty, senior noncommissioned officer in the military, and as a military advanced systems technical instructor. He has over 25 years of teaching and administrative experience in higher education in the operational and business aspects of running complex organizations.

In addition to his academic and student services experience he has experience in fiscal affairs, facilities management (including multiple campuses and sites), accreditation, assessment, workforce development, community engagement, shared governance, working with state legislatures, and community leaders. Prior to his career in academia, he served over twenty years on active-duty service in the United States Air Force retiring as a Master Sergeant. During his military career, he attained the highest certification under the Air Education and Training Command as a Master Instructor. Additionally, he has served on and chaired on a myriad of institutional and statewide committees.

Dr. Pagan holds a Doctorate in Education with an emphasis in Higher Education Leadership Studies, a Master of Science in Aeronautical Science, a Bachelor of Science in General Studies, and associate degrees in Avionics Technology, and Instructor of Technology. He is certified by the Federal Aviation Administration in Airframe and Powerplant Systems, the Federal Communications Commission, and holds certificates in Aerospace Human Factors and Aviation/Aerospace Safety. Dr. Pagan is dedicated to fulfilling the mission of the Mine Safety and Health Administration and the National Mine Health and Safety Academy.

Agenda

Tuesday, October 10

7:00 a.m. – 4:00 p.m.	Conference Registration	Classroom Wing Entrance
8:00 a.m. – 5:00 p.m.	Exhibitors Setup	Elevator Entrance - Cafeteria
11:00 a.m. – 12:00 p.m.	Presenters Meeting	C-106
11:30 a.m. – 1:00 p.m.	Lunch Break	
1:30 p.m. – 3:00 p.m.	Opening Ceremonies	Auditorium

Welcome and Introductions

Mr. Lincoln L. Selfe, Superintendent National Mine Health and Safety Academy

Opening Address

Christopher J. Williamson, Assistant Secretary Mine Safety and Health Administration

3:00 p.m. – 3:30 p.m.	Training Materials Competition Awards	Auditorium
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Materials Competition Award Presentation

Katie Kimbrell, Competition Coordinator

6:30 p.m. Joseph A. Holmes Safety Association Meeting C-123

Wednesday, October 11

7:00 a.m. – 4:00 p.m.	Conference Registration	Classroom Wing Entrance
8:00 a.m. – 11:30 a.m.	Workshops	See Workshop Schedule
11:30 a.m. – 1:00 p.m.	Lunch Break	
1:00 p.m. – 4:30 p.m.	Workshops	See Workshop Schedule
5:30 p.m.	Holmes Mine Rescue Executive Committee Meeting	C-123

Thursday, October 12

7:00 a.m. – 9:30 a.m.	Conference Registration	. Classroom Wing Entrance
8:00 a.m. – 11:30 a.m.	Workshops	See Workshop Schedule
11:30 a.m. – 1:00 p.m.	Lunch Break	
1:00 p.m. – 2:00 p.m.	Workshops	See Workshop Schedule
1:00 p.m. – 3:00 p.m.	Exhibitors Breakdown	levator Entrance - Cafeteria

Training Materials Competition

This is the 28th year that TRAM's Training Materials competition has been conducted. For more than a quarter century, the materials developed and entered in the competition have made lasting, positive impacts on health and safety training at mining operations.

Entries which met the highest standard of performance were awarded an MSHA Blue Ribbon of Excellence. The top scoring entry was awarded the Grand Prize.

This year's winners will be announced during opening ceremonies on Tuesday, October 10.

TRAM 2023 Training Materials Competition Entrants

Entrants:

- Hallett Materials (Texas)
 - MSHA Annual Refresher Education Vol. XVII & Safety Discussions Vol. 1 & 2
- NIOSH (National Institute for Occupational Safety and Health), Pittsburgh Mining Research Division
 - Self-escape Core Competency Profile: Guidance for Improving Underground Coal Miners' Self-Escape Competency
- Ohio Department of Natural Resources Mine Safety
 - Surface Mine Safety Training
- Prescient Technical Services
 - Gas Piping & Fired Equipment Safety
- South Dakota Mines State Grants Program
 - Interactive Training Materials
- Virginia Department of Energy (E. Taylor)
 - 2023 First-class Mine Foremen Continuing Education Training
- Virginia Department of Energy (H. Hayden & S. Lee)
 - 2023 Surface Mine Foremen Continuing Education Training

TRAM 2022 Materials Competition Winners

Blue Ribbon Awards

- Ash Grove Cement Plant Louisville, NE MSHA Annual Refresher Education Vol. XIII(Gamification)
- Capitol Aggregates Speak up Don't Press Your Luck
- Florida Mine Safety Program (MSHA State Grants) Hurricane Preparedness for Surface Mining Operations
- Marshall University Design and Deployment of an Emergency Belt Pull Cords
- Ohio Department of Natural Resources Ohio Surface Mine Training
- University of Texas Health and Safety Training Center We Are Miners

Grand Prize

Capitol Aggregates – Speak Up Don't Press Your Luck

Previous Grand Prize Winners

- ★ 2022 Capitol Aggregates
- ★ 2021 Ash Grove Cement Plant (Louisville, NE (A CRH Americas Material Company)
- ★ 2020 Blackhawk Mining, LLC
- ★ 2019 Florida Mine Safety Program
- ★ 2018 Florida Mine Safety Program
- ★ 2017 South Central College Center for Business & Industry
- ★ 2016 Virginia Department of Mines, Minerals, and Energy
- ★ 2015 South Central College Center for Business & Industry
- ★ 2014 Virginia Dept. of Mines, Minerals and Energy
- ★ 2013 Kentucky Office of Mine Safety and Licensing
- ★ 2012 Virginia Dept. of Mines, Minerals, and Energy
- ★ 2011 South Central College
- ★ 2010 Lafarge North America, Inc.
- ★ 2009 Alliance Coal

- ★ 2008 Kentucky Coal Academy
- ★ 2007 Safe Steps Training, LLC
- ★ 2006 AGC for Heavy Equipment Operations, Vermont Chapter
- ★ 2005 Colorado Division of Minerals and Geology
- ★ 2004 Virginia Department of Mines, Minerals, and Energy
- ★ 2003 Colorado Division of Minerals and Geology
- ★ 2002 Commonwealth of Virginia
- ★ 2001 Commonwealth of Virginia
- ★ 2000 Colorado Division of Minerals and Geology
- ★ 1999 The Illinois Office of Mines and Minerals
- ★ 1998 Pittston Coal Company
- ★ 1997 Zeigler Coal Holdings, Inc.
- ★ 1996 The Pennsylvania State University

Exhibits

First floor of the administrative building – the exhibit area features a wide variety of health and safety training materials, including videos, PowerPoint presentations, printed materials training materials developed by MSHA, State Grant recipients, and the mining industry. Exhibits also showcase a number of innovative health and safety-related products.

Exhibitors

- Catamount Consulting LLC "People First"
- Colorado Division of Reclamation, Mining and Safety
- EHS Legal Consulting and Training (Mexico)
- McCraren Compliance
- National Mine Rescue Association
- NIOSH
- SD MSHA State Grants Program
- United Central Industrial Supply Company, L.L.C
- Virginia Energy

Workshops

AC4P Safety Culture

Presenter: Richard Wobby

Best-in-class teams manage accountability on every mine-site, and their miners become the safety managers for their site. If a mine has problems, we don't make excuses by blaming everyone else. Companies can create accountability by having senior management actively involved in the periodic, rigorous examination of job status. This is not just a cursory review of mining costs; it also includes a narrative of the following: Create accountability, be responsible, begin with the end in mind, put first things first, think win – win, seek first to understand then to be understood, synergize, sharpen the saw.

Be the Canary

Presenters: Scot McKenna, Stacy Spector

The canary in the coal mine played a integral role in the health and safety of miners in the 1800's. The canary's behavior or "song" warned the miners to leave those tunnels with great haste. In this sense, the canary spoke up or sang in times of threat or need to protect the health of the miner. The modern spin from this piece of history is that we need to train and invest in the cultures of our workplaces so that we develop the canary mindset of "saying something when we see something" If you invest in training your employees to understand and employ tools to create a psychologically safe work environment, then you will have a people that take action for the health, safety and compassion of those they work with.

Can You Hear Me!?

Presenter: Jacob Drenth

With many presentations, the videos, presenter's voice, and/or other audio sources are too loud, too quiet, muted, too much bass, contain feedback or other extra noise. This can cause noise fatigue and create intelligibility problems, making hearing difficult for the hard of hearing, and more. This presentation demonstrates the difference between bad sound and good sound, and how to sound good without breaking your budget or having to carry in a lot of gear.

Crane Safety

Presenters: Mark Zinser, Tim Butcher, Randy Besemer, Jim Sasser

What is the process to ensure your crane operator is qualified? We will walk through the process and see how closely it aligns with task training. We will also look at roles and responsibilities of the Crane Owner, Site Supervisor, Crane User, Lift Director, Rigger, and Crane Operator when a crane comes onto your site.

Emergency Response at NIOSH: Research to Practice

Presenters: Launa Mallet, PhD; Jason Diamond, CMSP; Cassandra Hoebbel, PhD

It is difficult to prioritize and direct resources toward events we hope will never happen. Spend some time during this presentation thinking about the status of emergency preparedness at your operation. We will discuss current emergency related NIOSH projects and training products, highlighting a 5-year effort to enhance emergency response training at CONSOL Energy. We encourage the audience to determine which NIOSH activities might support preparedness at their workplaces and to share concerns they may have about gaps in the mine emergency response system with us. Join us as CONSOL's Coordinator of Training and Development shares practical strategies for you to plan, implement, assess, and improve the emergency response readiness of your workforce by incorporating simple self-assessment activities, hands-on training, spot-checks and other mitigation strategies.

Gas Piping and Fired Equipment Safety

Presenter: John Puskar

This presentation provides the audience with knowledge to help support enforcement. Topics covered include: the basics of combustion and fuel trains, what you need to know about NFPA documents, and examples of specific enforcement issues related to fuels and fired equipment that can save lives.

Getting Results for 17 Years with Audience Response Clickers; A Case Study

Presenters: Robert Weston, Terry Weston, Terry Meschke

While utilizing these audience response units (clickers) at various conferences over the years we've noticed that they often steal the spotlight. In this session, we will illustrate their effective utilization in both in-person and " live online" settings. Drawing from our extensive experience of integrating these clickers into annual refresher and new miner training sessions for over 17 years, we will share what has proven successful for us. Our diverse clientele operates within

multiple Coal and Metal/Nonmetal segments: surface and underground. This approach not only captivates your learners but also fosters their retention and holds both them and you accountable in your training sessions!

Improving Evaluation Strategies for Miner Health and Safety Training Programs

Presenters: Leonard D. Brown, Glenna Smith

Measuring outcomes remains a substantial challenge in most health and safety training programs. Referring to Kirkpatrick's Model, many organizations measure effectively only at Level 1 (Reactions). In this talk, we discuss ways to evaluate Levels 2 (Learning), 3 (Behavior), and 4 (Results) using a variety of techniques, such as games, simulations, analytics, and pretest-posttest-control designs. For example, computer simulations and VR present unique opportunities to assess Behavior (Level 3) in dynamic, interactive environments that replicate tough situations that miners face in the real world. We discuss methodologies and survey results collected from a multi-year study with industry partners using our program's training resources.

Interactive Training Materials

Presenter: Purushotham Tukkaraja

Task-based interactive training is effective in terms of participant engagement, group interaction, knowledge retention, and competency assessment. This interactive presentation discusses the need for energy control procedures, energy sources present in the work environment, significance of Lockout Tagout (LOTO) procedures in preventing accidents, MSHA standards and regulations pertaining to LOTO, application of LOTO procedures on equipment, and group LOTO procedures. After the completion of this training, the trainees will be able to understand the need for energy control procedures, recognize different energy sources and identify methods of LOTO, stored energy, group LOTO, verification procedures, and gain hands-on experience.

Kicking the Dirt

Presenter: Joe McGuire

Sometimes if front-line managers and workers are asked (or required) to lead a daily safety meeting, it can turn into a "going through the motions" type of event. A safety manager with a national aggregates production company once said that daily safety meetings, where workers stand around with their heads hung down and "kicking the dirt," are of little value. However, there are strategies to mix things up. For example, asking workers to select a topic and lead a tool-box-talk or safety discussion of their choice among a variety of topics can be used to turn a previous effort that was only marginally useful to an effective method of worker engagement.

Let's Talk Interaction!

Presenter: Ashley Gillund

Delivering training, whether in-person or online, should always be interactive! Ashley will share some of the tools that she uses to keep participants engagement throughout training sessions. Incorporating participation is important as an instructor, especially for those miners that attend training year after year. Join Ashley to hear what she does to be successful in not having people fall asleep and have training be worth the time for miners annually!

Quiet Killers in the Workplace

Presenter: Joe McGuire

When we think of hazards, accidents and deaths in the construction, extraction, and aggregates industries, our mind probably goes to the usual culprits: falls from heights, crushed by equipment, failure to follow Lockout/Tag-out, and more. However, there is something quite deeper than these seemingly obvious hazards that can cause harm – death by suicide. In 2020, the CDC found that, compared to other industries, men who work in construction experience suicide rates about four times higher than the general population. Consequently, high levels of stress, depression, and thoughts of suicide are as important to worker safety as lockout/tag-out, accident prevention, and using seat belts. Often, MSHA training as developed and executed by companies, focuses on "hard skill" topics. Rarely, if ever, does this include sessions such as having difficult workplace conversations or mental health concerns. This session will focus on two mental health related issues which too often become "silent killers" in the construction, extraction, and aggregates industries. By providing more information on these issues, it is hoped trainers or instructors will research these topics and include them in their curricula. The mining industry can no longer look the other way and pretend these issues do not exist.

Scenario Generation with the VR Mine Rescue Training Platform

Presenters: Brendan Macdonald, Jason Navoyski

The VR Mine Rescue Training Platform (VR-MRT) is an interactive tool utilizing state of the art virtual reality technology, with the primary purpose of supplementing current mine rescue training. VR-MRT now facilitates trainer developed, trainer led, and trainer debriefed training, where the latest update is training scenario creation – The scenario generator module. The scenario generator allows trainers to create custom mine environments including different mine layouts, setting up dynamic ventilation, and placing cables, vehicles, and other objects normally found in a mine. This session will provide an overview of VR-MRT specifically focusing on the newly developed scenario generator. It will also include an interactive VR demo showing its capabilities.

Suicide Prevention - Sharing a Family Experience

Presenter: Danny C. Lee

This workshop will share the presenter's personal family experience with suicide prevention and its effects on his family. It will highlight the classic signs of mental illness and what might be overlooked, including behavioral changes, depression, sleeplessness, physical changes, social withdrawal, eating disorders, and thoughts of self-harm. These subtle signs could affect miners that are going through their own dark period as mental lapses or inattentiveness often lead to serious accidents and increased potential for fatalities.

Synthetic Learning Environments: Making Training More Accessible and More Effective

Presenters: Leonard D. Brown, Glenna Smith

Synthetic Learning Environments (SLE) are computer programs combining games and simulations. They let us safely assess knowledge and skills in a variety of realistic situations. We have developed SLEs that cover many topics, including accident prevention, escape, ground controls, haulage, hazards recognition, and miner rights. In this talk, we provide an overview of key game mechanics and enabling technology, including a new streaming platform that increases SLE accessibility in classrooms lacking high-end computers. We will discuss strategies for integrating SLEs into the curriculum and use cases for both training and performance assessment. We will provide interactive demos and assist participants in acquiring and integrating our software.

Water Survival & Rescue

Presenter: Matt Bunner

Presented at the Academy pool, this program focuses on water survival and rescue. Learn best practices of gear and programs that you can use to protect your miners.

Workplace Exam Scavenger Hunt

Presenters: Garland Moffett, Brittanie Phillips

This hands-on workshop offers refreshed techniques for teaching/training workplace exams.

Presenters

Besemer, Randy – Randy is a 21-year member with the Michigan Operating Engineers Local 324. Randy spent 7 years as a part time instructor and 1 year as a full-time instructor at the Operators Training Center teaching various equipment classes. Randy is certified in CPR, First Aid, forklift, and is an MSHA certified instructor.

Brown, Leonard D., PhD – Dr. Leonard Brown is an Assistant Research Professor at the University of Arizona's Mel and Enid Zuckerman College of Public Health. As Director for the NIOSH-funded Western Mining Safety and Health Training Resource Center, he works to improve safety through innovations in VR, gaming, and data analytics. Brown has nearly 20 years of experience in designing new computer interfaces and synthetic learning environments, having published numerous papers on these topics to academic and professional venues such as ACM, IEEE, and SME. He also teaches courses on related topics for the University's School of Information.

Butcher, Tim – Tim is a 30-year member with the Michigan Operating Engineers Local 324 of Michigan who has 40 years of experience in the construction and mining industry. Tim has spent the last 7 years as an instructor and the past 2 years as the site foreman at the training center, teaching various equipment classes, MSHA and OSHA classes. Tim is part of the executive committee of the Joseph A Holmes association.

Bunner, Matt – Mr. Bunner, Safety Manager for Mulzer Crushed Stone, has a vast knowledge of working on or near the water. He has a B.S. from Western Kentucky University in Industrial Technology, Occupational Safety path in 1994. He is a Certified Safety Professional and Certified Mine Safety Professional. For the past 22 years he has worked with water safety for Mulzer Crushed Stone. This course has also been shared with many state associations, civic groups, and marine/dredge companies. He trains his river/dredge employees on safe procedures for working near the water, survival in the water, and rescue from the water regularly.

Diamond, Jason – Formerly a PGA Golf Pro, Jason graduated with a B.A. in Business from the University of Delaware and an A.S. in Mining Technology from The Pennsylvania State University. Jason began his career at Consol in 2008 as a Foreman Trainee at Bailey Mine. In 2010 Jason moved to the safety department and four years later was promoted to Bailey Mine's Coordinator of Training and Development. In 2016 Jason was promoted to Consol Energy's Coordinator of Training and Development for all coal operations. In this position, Jason began working with NIOSH on self-escape research efforts including the testing of Mine Emergency and Escape Training (MEET) and most recently "The Improving Self-escape from Underground Coal Mines Training Initiative."

Drenth, Jacob – Mr. Drenth has been a mine safety trainer for 20+ years and has more than 45 years in audio, PA, and mixing live sound.

Gillund, Ashley – Workplace S&H Instructor with Workforce Development Solutions at Northland Community & Technical College in MN. Ashley worked in the construction & mining industry for 10+ years & discovered a true passion for safety & training in the workplace. Her

approach to training engages participants by keeping the tone of the class light & fun while ensuring the content is educational & effective. She is the type of trainer that encourages participation throughout the entire session using hands on activities that can be used during in-person or online training. Ashley is an active member with the national Joseph A. Holmes Safety Association and the recently appointed Executive Director of the state council, Minnesota Mine Safety Association.

Hoebbel, Cassandra – Cassandra Hoebbel is a Behavioral Research Scientist for the National Institute for Occupational Safety and Health (NIOSH) Pittsburgh Mining Research Division (PMRD). As a member of the Human-Systems Integration Branch, Escape, Rescue, and Training team, Cassie's research focuses on the characterization and improvement of mine emergency response systems. Of specific interest to Cassie is how mineworker competence might be improved through enhanced self-escape training and assessment. Trained in psychology and school counseling, she received her B.A. in Psychology from the State University College at Buffalo, and her Ed.M. and Ph.D. from the Graduate School of Education at the State University of New York at Buffalo.

Lee, Danny - Mr. Lee started his safety career in 1984 as a Safety Consultant with the MA OSHA Consultation Program. He has held several health and safety leadership roles, which include serving as Safety Supervisor for the MA OSHA Consultation Program and as Field Safety Supervisor for the \$6.6B MWRA project, responsible for cleaning up Boston Harbor. In addition to field work, Mr. Lee has taught safety classes as adjunct faculty for Northeastern University and Keene State College. He is an OHSA Authorized Trainer (General Industry and Construction) and holds numerous Certifications. He also works as a trainer for the MSHA State Grants Program (MA). As a seasoned safety professional, he is eager to share his experience with other trainers.

Mallett, Launa - Launa is a social scientist at NIOSH's Pittsburgh Mining Research Division where she is the Escape, Rescue, and Training Team Leader. Her research interests include decision-making during mine emergencies, developing engaging training, and the risks faced by inexperienced miners. She recently led the development of the NIOSH Mining Program plan for emergency response research. She received her B.A. and M.A in Anthropology and a Ph.D. in Sociology from the University of Kentucky.

Meschke, Terry F. – Mr. Meschke has been a Safety and Health professional with the Customized Workforce Education group (CWE) a division of South Central College in North Mankato MN, for the last 17 years. He is credentialed by the Board of Certified Safety Professionals (ASP & CIT), is an OSHA-authorized Construction and General Industry trainer and holds an IS qualifications from MSHA. Terry is a subject matter expert for CWE in the areas of OSHA Safety and Mine Safety training.

Macdonald, Brendan – Mr. Macdonald is a Mechanical Engineer at the National Institute for Occupational Safety and Health. His work includes the implementation and maintenance of virtual reality technology and the research and implementation and testing of illumination technologies. He received his Bachelor's Degree in Mechanical Engineering from Vanderbilt University and his Master's degree in Entertainment Technology from Carnegie Mellon University.

McGuire, Joe – Mr. McGuire holds a B.A. from Benedictine College, an M.S. from NW Missouri State, and obtained his Ph.D. from Iowa State University. He retired after 36 years in construction aggregates production in surface and underground mines. Throughout his career, Mr. McGuire presented over 135 seminars on safety and environmental educational events at Aggregates Association events in twelve states and to the NSSGA. He is lead author on two zoning permits guides published by NSGGA and NAPA and lead author on 13 MSHA Annual Safety Training Guides which have received several education/training awards from MSHA/TRAM. Additionally, Joe has had 44 articles on safety training and environmental compliance published.

McKenna, Scott - Mr. McKenna is the President of Catamount Consulting of New York. He is an MSHA certified instructor and an OSHA Certified Construction Trainer. He has over 24 years of experience in the mining and construction industries and is active in multiple organizations. Scott is the former head assistant varsity wrestling coach at Warrensburg Central School where he coached for over 20 years. He believes that we are all coaches within the people business. Regardless of your team, you must have high levels of emotional intelligence to assure that everyone around you is coached to reach their particular level of high performance.

Moffett, Garland - Mr. Moffett has over 25 years of experience in the mining Industry. He is currently Supervisor of Instruction for The University of Texas at Austin. Garland's additional ties to the industry consist of: President of The Texas Mine Rescue Association, active member of all Joseph A. Holmes Safety Associations within the State of Texas, national participant of JAH Safety Association, Holmes Mine Rescue Association, actively assists MSHA in Mine Rescue events throughout the U.S., delivers presentations for various conferences involving "Spring Thaws etc." and MSHA. He is a South Central Joint Mine Health Safety Conference Committee Member, and a Motivational Speaker.

Navoyski, Jason – Mr. Navoyski is a 3D graphics developer working for NIOSH on VR (virtual reality) related projects. He has extensive experience creating assets for virtual reality related to mining.

Phillips, Brittanie – Ms. Phillips is a University of Texas HSTC Senior Field Trainer/Analyst. She has a B.S. in Occupational Safety, as well as an Associate Degree in Applied Science Oil and Gas Production. She has over 8 years of hands-on experience in the safety sector and is a certified MSHA, OSHA, and First Aid Instructor.

Puskar, John R., PE – John R, Puskar, PE is a nationally-recognized, award-winning, expert on gas hazards and combustion equipment safety. His company, Prescient Technical Services, LLC provides forensic consulting, investigative, support, and assistance services to a diverse group of industrial clients throughout the United States.

Mr. Puskar has presented at more than 50 conferences including the Mary K. O'Connor Process Safety Symposium, OSHA Oil and Gas Conference, and numerous NFPA, AEE, APE, AFE, ASSE, and AAME events. He has trained managers, safety professionals, and technicians in corporate and public settings.

Sasser, Jim – Jim Sasser has been a crane instructor for the IUOE324 local for 4 years. Holding certifications in all areas related to cranes and heavy rigging, Mr. Sasser has a total of 25 years in the industry. Jim is also involved with MITF-1 FEMA disaster relief team, sent all over the country for natural and man-made related events.

Smith, Glenna – Glenna Smith serves as Training and Outreach Coordinator for University of Arizona's Western Mining Safety and Health Training Resource Center and Director of Mining Safety at McCraren Compliance. A dedicated safety professional, her career spans multiple decades in the private, public, government and consulting sectors. Her certifications include Certified Mine Safety Professional, Registered Safety Manager, Der Norse Veritas Modern Safety Management, Incident Investigation Methods, MSHA Instructor (IS, IU, MR, IN), OSHA Outreach Instructor (Construction and General Industry), and Leadership & Supervisory Training.

Spector, Stacy – Stacy Spector is the primary content and curriculum developer for Catamount Consulting's Leadership Programs. Stacy spent over 20 years as a practicing attorney and over 15 years in the areas of Empathy and Social Emotional Support in the education and coaching world. Her unique background and experience offers a broad range of value to many individuals and groups in relation to employee engagement, culture building, and mindset mastery. Stacy regularly presents to National Conferences and Organizations on the topic of "Engaging Leadership". Her mission is to help people develop stronger, more connected, human relationships, in the work environment.

Tukkaraja, Purushotham – Dr. Tukkaraja is the Director of the SD MSHA State Grants Program and Associate Professor of Mining Engineering at South Dakota Mines. His expertise includes mine safety and health, mine ventilation, and explosives and blasting. He completed a large capacity-building research project (\$1.25 Million) funded by CDC-NIOSH to design an effective ventilation system for block/panel cave mines. He has received research grants from several funding agencies, including NIOSH, MSHA, OSMRE, DOE, NSF, and South Dakota Board of Regents. He is an ABET PEV, QP, serves on the SME's Underground Ventilation Committee Executive Board, Past-president, Black Hills Chapter of ISEE. He is the recipient of the Health & Safety Research & Educational Excellence Award.

Weston, Robert, CSP, CIT, CMSP – Mr. Weston has been a Safety and Health professional with the Customized Workforce Education group (CWE) a division of South Central College in North Mankato, MN, for the last 20 years. He has presented at numerous events including ISMSP, TRAM, and Joseph A. Holmes National conferences. He is credentialed by the Board of Certified Safety Professionals (CSP & CIT) and the Society of Mining, Metallurgy, and Exploration (CMSP), is an OSHA-authorized Construction and General Industry trainer, and holds both IS and IU qualifications from MSHA. Robert is a subject matter expert for CWE in the areas of OSHA safety and mine safety training.

Weston, Terry, CSP, CIT, CMSP – Mr. Weston has been a Safety and Health professional with the Customized Workforce Education group (CWE) a division of South Central College in North Mankato, MN, for the last 21 years. He has presented at numerous conferences including TRAM, Joseph A. Holmes and the ISMSP. He is credentialed by the Board of Certified Safety Professionals (CSP & CIT) and the Society of Mining, Metallurgy, and Exploration (CMSP),

is an OSHA-authorized Construction and General Industry trainer and holds both IS and IU qualifications from MSHA. Terry is a subject matter expert for CWE in the areas of OSHA safety and mine safety training.

Wobby, Jr., Richard – Richard Wobby is Executive Vice-President of the Associated General Contractors of Vermont (Ranked the #1 AGC chapter in the country for 2021). He has over 20 years' experience in the construction and mining industries as a safety management consultant and professional speaker, helping more than 100 companies or associations in their safety systems. Constantly in demand, Richard speaks to an average of 50 associations, companies, trade shows and conventions each year teaching his philosophy across New England. He continues to consult with an average of 50 clients annually, assisting in and improving their safety performance. He has developed both virtually and in-person programs and policies for the construction and mining industries.

Zinser, Mark – Mark is a 34-year member with the Michigan Operating Engineers Local 324. Mark spent 22 years as an instructor for the Operators Training teaching various equipment classes along with MSHA classes and also served as an Apprentice Coordinator the last 12 years prior to retiring in October 2022. Mark still teaches MSHA classes part-time. He was past president of the Joseph A Holmes in 2012 and 2017, past president of the Mine Safety Institute of America in 2016. Mark is certified in forklift, CPR, First Aid/AED. He is an MSHA certified instructor and an MSHA Train the Trainer Instructor. Notes

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