**19th Annual Southeast Mine H&S Conference**

**NIOSH Preconference Workshop October 31, 2023**

***Research to Practice Health & Safety Interventions, Technologies, and Trainings***

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| **Topic** | **Discussion points** | **PRESENTERS** | TIME |
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| **Introduction** | Introduction of presenters and attendees | All | 8:00–8:30 am |
| **Automation and Exoskeletons** | * Introduce emerging safety solutions for mining including automated systems and exoskeletons
* Describe a mining automation continuum
* Outline some human factors considerations when implementing automated systems at mines
* Summarize different types of exoskeletons currently available
* Describe when and how exoskeletons can help reduce musculoskeletal disorders
* Highlight some key steps to successfully implement exoskeletons at mines
 | Mahiyar Nasarwanji | 8:30 –9:45 am |
| **Break** |  |  | **9:45 – 10:00 am** |
| **Worker Experience and Training** | * The relationship between work experience and risk of injury
* Ways to reduce the risk of inexperience
* Training methods for today’s classrooms and screens
* NIOSH’s available miner training materials
 | Launa Mallett | 10:00 – 11:15 am |
| **Lunch, open Q&A 11:15 –12:30 pm** |
| **Miner Health** | * Discuss what we know and do not know about mine worker’s health
* Introduce the NIOSH Miner Health Program and Mine Health Partnership
* Current NIOSH research addressing mine worker health
 | Brianna Eiter | 12:30 – 1:30 pm |
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| **Silica**  | * Define respirable crystalline silica & health outcomes connected to exposure
* What do we know about silica exposures
* Exposure assessment methods and the utility of exposure data
* Exposure controls for respirable crystalline silica: engineering, administrative, and personal protective equipment
 | Kendra Broadwater | 1:45 – 3:00 pm |
| **Open discussion** |   | All | 3:00 – 4:00 pm |
| **Wrap-up** |  | **4:00 pm** |

**Presenter Bios**

**Kendra Broadwater, M.P.H., C.I.H.** Kendra is a Reseach Industrial Hygienist with the National Institute for Occupational Safety and Health (NIOSH) Spokane Mining Research Division (SMRD). She has performed workplace exposure assessments in workplaces across the United States for NIOSH since 2013. Before recently joining the NIOSH Mining program and turning her focus to silica and noise exposure, she developed expertise in evaluation of exposures in nail salons and forensic chemistry laboratories and surface sampling methodology and survey development. She is interested in learning more about exposure assessment strategies used in mining (for silica and noise in particular) and barriers to adoption of Bayesian decision making in exposure assessment programs.

**Brianna Eiter**, **Ph.D.** Briannais a Cognitive Psychologist with the National Institute for Occupational Safety and Health (NIOSH) Spokane Mining Research Division (SMRD). In the eleven years that Brianna has worked at NIOSH, she has been involved in research projects focusing on hazard recognition and risk perception, informational needs of the underground coal miner, and fatigue risk management for small surface mines. Her recent work has involved creating VR work environments and developing training tools to address hazard recognition and risk assessment abilities. Brianna has 20 years of experience in her research area of expertise which is human cognition and the use of eye-tracking to measure human behavior. Brianna graduated with a Bachelor’s degree from Lehigh University and then went to Binghamton University where she earned both her Master’s and Doctoral degrees in Cognitive Psychology.

**Launa Mallett, Ph.D.** Launa is a social scientist at NIOSH’s Pittsburgh Mining Research Division where she is the Escape, Rescue, and Training Team Leader. She holds a master’s degree in Anthropology and a Ph.D. in Sociology from the University of Kentucky. Launa works to improve the knowledge and skills of miners, and those who support them, by enhancing safety and health training strategies. She has developed and evaluated training on a wide range of topics including heat-related illness, hazardous materials handling, use of personal protective equipment, and coaching skills for on-the-job trainers. She has trained miners at their worksites, trainers during professional development sessions, and international industry leaders, through translators, at live and virtual meetings. Launa’s team is currently working on reducing risk to inexperienced miners, exploring the status of mine rescue training, and improving communication during mine emergency response.

**Mahiyar Nasarwanji**, **Ph.D.** Mahiyaris a Senior Service Fellow in the Workplace Health Team at the National Institute for Occupational Safety and Health (NIOSH) Pittsburgh Mining Research Division (PMRD). Mahiyar has over 15 years of experience in human factors and ergonomics research and focusses on improving the work environment to make it safe and usable by all. Mahiyar’s current research focuses on the prevention of musculoskeletal disorders and emerging technologies like exoskeletons. Previously, Mahiyar conducted research to prevent slips, trips, and falls in mining, improve ErgoMine–an ergonomics audit tool for mining, and investigated automated systems at mines from a human factors and user centered perspective. Mahiyar graduated with a Bachelor of Engineering degree in mechanical engineering from the University of Mumbai and then went to the University of Buffalo where he earned both his Master’s and Doctoral degrees in Industrial and Systems Engineering.