

The **Pittsburgh Mining Research Division (PMRD)** is part of the **National Institute for Occupational Safety and Health (NIOSH)**. PMRD conducts research to reduce a wide variety of occupational safety and health hazards. PMRD works to eliminate mining fatalities, injuries, and illnesses across all mining sectors. PMRD partners with labor, mining associations, equipment manufacturers, mine operators, and other government agencies to collect data, develop and test software, create and review new technologies, and offer solutions to workplace challenges.

PMRD testing facilities—some of them unique in the world—include specialized labs, full-scale galleries, and sophisticated technical instrumentation:

- The Safety Research and Experimental Coal Mines provide real mine environments for health and safety studies.
- The Hemi-Anechoic Chamber is used to pinpoint hazardous noise on mining machines.
- The Virtual Immersion and Simulation Laboratory creates safe simulations of hazardous mining situations.
- The Mine Illumination Laboratory tests improved lighting technologies.

Technology & Product Highlights

ErgoMine 2.0: A mobile app for mining-specific workplace audits that provides recommendations to improve safety conditions at the user's worksite.

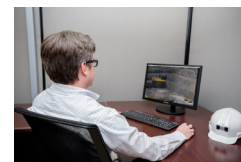


Helmet-CAM and EVADE 2.3 Software:



A wearable video recording system designed for use with other personal monitoring devices for hazardous exposures. EVADE presents Helmet-CAM video footage and the exposure data to help miners determine work areas or activities that coincide with high exposures.

EXAMiner: Software to practice and improve hazard recognition skills by performing virtual workplace examinations. This interactive PC-based application can be used with over 30 preloaded images, or trainers can upload photos taken at their own mines.



Air Quantity Estimator (AQE) Beta: Software for estimating the air quantity needed to dilute diesel particulate matter (DPM) in underground large-opening mines. It allows users to pinpoint vehicles that are high DPM contributors and make "what if" scenarios by varying the input parameters to achieve the most efficient and practical ventilation system.

Field Analysis of Silica Tool (FAST): Software designed for field-based respirable crystalline silica (RCS) monitoring. FAST processes data from a field sampling instrument and provides results the same or next day. This allows for timely action to reduce RCS exposures.

Diesel Particulate Matter Monitor:

A wearable real-time monitor that helps mines identify sources of exposure, set up administrative controls, evaluate enclosed cabs, and implement control technologies.



Continuous Personal Dust Monitor: A wearable device that monitors coal mine dust to continuously provide accurate exposure data—a federal dust rule requirement.

Coal Dust Explosibility Meter:

A handheld device that quickly assesses the explosibility of rock and coal dust mixtures.



LED Lighting for Roof Bolting Machines: Lights that provide floor hazard illumination 23 times better than conventional lighting systems. The world's leading roof bolting machine manufacturer commercialized the system.



OUR SAFETY AND HEALTH RESEARCH AREAS



**Respirable Dust
Monitoring and Control**



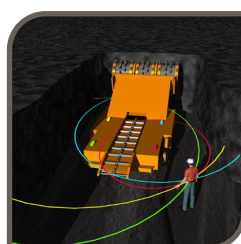
**Hearing Loss
Prevention**



Ground Control



**Ergonomics and
Musculoskeletal Disorder
Prevention**



Machine Safety



**Fire and Explosion
Prevention**



**Refuge Alternatives and
Emergency Response**



Education and Training

OUR STAFF

PMRD has 156 full time positions and has offices and labs in Pittsburgh, Pennsylvania. Staff have experience in the following areas:

Engineering: Mining Engineers | Mechanical Engineers | Electrical Engineers | Computer Engineers

Human Factors and Workplace Health: Industrial Hygienists | Audiologists | Behavioral Scientists | Computer Scientists

Physical Science: Physical Scientists | Chemists | Geologists | Physicists

Epidemiology and Surveillance: Epidemiologists | Statisticians | Public Health Advisors

Health Communication and Dissemination: Health Communication Specialists | Visual Information Specialists | Computer Engineers | IT Specialists