What are our priorities?
The National Institute for Occupational Safety and Health (NIOSH) Mining Program works with partners in industry, labor, trade associations, professional organizations, and academia. The program focuses on these areas:

• Reducing exposures to harmful mine dusts, airborne pollutants, heat, and noise
• Reducing machine-related traumatic injuries
• Preventing injuries and fatalities from rock falls and failures in underground mining operations
• Enhancing rescue and miner survivability if disaster strikes

What do we do?

• Develop state-of-the-art dust, heat, and noise control technologies and best practices.
• Develop monitoring techniques that empower workers and mine operators to take corrective actions before an overexposure to hazardous aerosols and noise occurs.
• Develop and make available new technologies and recommended practices that will reduce injuries and fatalities involving powered haulage equipment and machinery.
• Enable a robust and resilient disaster prevention system by developing innovative control technologies, practices, and procedural changes.
• Develop design criteria and engineering solutions for ground support systems that protect underground miners during seismic events or failure of weak rock.

What have we accomplished?

• Released EVADE 2.0 software to depict noise, dust, and other hazard data alongside video streams so that mine safety staff can work with miners to identify and avoid hazardous exposures.
• Released the ErgoMine mobile app that guides safety audits of haul truck operations, bagging, and maintenance and repair.
• Completed a technology partnership leading to continuous personal dust monitoring (CPDM) technology as a mandated solution to help prevent black lung.
• Published design documents for improved LED illumination technology for cap lights and machine area lights.
• Released a web application for brief safety and health training sessions as “toolbox talks.”
• Issued an extensive review of rock dusting practices to prevent coal mine explosions, including proactive approaches to improve how this critical safety operation is performed.
• Demonstrated through field studies that rock dust can be treated to resist caking, allowing it to remain powdery and dry even in wet conditions and thus limit the risk of coal dust explosions in underground mines.
• Completed laboratory testing demonstrating the effectiveness of shield-mounted water spray systems to reduce respirable coal dust during longwall mining.
• Published findings from laboratory and field evaluations of electro-chemical corrosion mechanisms on metal and cement underground support systems.

What’s next?

• Release fact sheets and new training modules on preventing heat stress. Release the Safety Pays in Mining web application, which will allow mines to assess the eco-nomic benefits of preventing injuries.
• Conduct laboratory testing of engineering noise controls for jumbo drills used in metal/nonmetal mines.
• Provide recommendations to industry on improving ventilation of longwall faces.
• Conduct experiments to compare the effectiveness of an untreated rock dust to that of a rock dust treated to resist caking. Rock dust is used to reduce the risk of coal mine explosions.
• Complete development of an end-of-shift silica monitoring procedure and application to help prevent silicosis.
• Develop NIOSH “Saturn” LED area light to improve visibility around underground coal mining equipment.

To learn more, visit https://www.cdc.gov/niosh/mining/index.html