

Alpha Foundation Update

Presentation at NIOSH Pittsburgh Mining Research Division
October 17, 2017



Presentation Agenda

- Provide a brief background of the origins, mission, and vision of the **Alpha Foundation for Improvement of Mining Safety and Health (Alpha)**
- Explain funding strategy and methods pursued by the Board.
- Provide an overview of Alpha's scope of research and funding portfolio.
- Present a listing of funded projects to facilitate discussion of similar or overlapping research topics.
- Facilitate discussion of how we can best interact.



Foundation Origins

- Outcome of the Upper Big Branch settlement
- **December 2011:** The United States Attorney's Office for the Southern District of West Virginia, the United States Department of Justice and Alpha Natural Resources, Inc. entered into a “Non-Prosecution Agreement”.
- **ANR established the Alpha Foundation for Improvement of Mining Safety and Health and transferred to the foundation \$48,000,000.**
- **The Alpha Foundation is total independent from ANR or its successors**



Mission and Vision



Mission: To improve mine health and safety through funding research and development projects by qualified academic institutions and other not-for-profit organizations.

Vision: To enable miners in the future to be free of work-related injury or disease by the implementation of the results of the projects funded by the Foundation and undertaken by the best researchers from any discipline that can contribute.

The Alpha Foundation Team

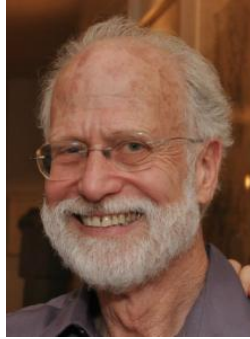
The Directors



Michael Karmis



Keith Heasley



David Wegman

Exec. Director



Warren Hunt

Technical Staff



Tom Barczak



Michael Silverstein

GLENMEDE
INVESTMENT AND WEALTH MANAGEMENT



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Scope of Research

EXPLORE OUR TOPICS

Health and Safety
Interventions



Mine Escape, Rescue
and Training

Safety and Health
Management and
Training



Injury and Disease
Exposure and Risk
Factors

- **Broad research agenda**

- Both safety and health
- Both underground and surface mining
- All mining sectors

- **Four major topical areas**

- Health and Safety Interventions
- Mine Escape, Rescue, and Training
- Safety and Health Management and Training
- Injury and Disease Exposure and Risk Factors

Funding Mechanism

- Request proposals through open solicitations.
- Typically, proposals are reviewed by external content experts and Foundation technical staff.
- Technical staff makes recommendations to Directors regarding technical merits of the proposals.
- Directors decide on grant awards.



Summary of our funding efforts

- **Currently we have issued 7 solicitations**
 - 3 have been open solicitations (using four broad priorities)
 - 1 focused on short term innovative and exploratory grants
 - 1 focused on holistic efforts
 - 1 technology concept driven (2nd phase prototype funding planned)
 - 1 exploratory health-related research with follow-up if justified
- **(As of Sept, 2017), we have received and funded:**
 - 426 concept papers (from 79 different organizations)
 - 134 full proposals (from 44 different organizations)
 - Funded 56 grants (to 32 different organizations)



Alpha Foundation Financial Snapshot and Plan

- \$19 million has been committed to grants since 2012.
- Another approximately \$8 million is budgeted for awards this month for grants focused on Holistic Mining Safety and Health Research Efforts.
- The Alpha Foundation is projected to have committed all of its funds and sunset in 5-6 years.
- All administrative expenses of the Foundation are offset by investment gains, preserving the initial \$48 million for supporting research.





The Grantee Team



Alpha Foundation for the Improvement of Mine Safety and Health, Inc.



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Roles of Industry in Alpha Foundation Projects

- Support of individual projects through letters of commitment.
- Direct engagement in projects, limited to providing testing support and implementation cooperation - Cannot have a lead research role, or receive funding.
- Customer for, and ideally implementers of, research results



Research Partnerships

- **Mining companies**

- Peabody Energy
- BHP Billiton
- Vulcan Materials
- Resolution Copper
- Salt Silver Materials
- Barrick Goldstrike
- Alliance Coal
- Cerrejon
- Alpha Natural Resources
- Anglo American Metallurgical Coal
- Cliffs Natural Resources
- Consol Energy

- **Manufacturers**

- Joy Global
- Bose
- CAI Industries
- Strata Worldwide
- Yieldpoint

- **Institutes/Organizations**

- NIOSH, MSHA
- UMWA, USW, NMA
- Health Resources and Services Administration
- National Coalition of Black Lung Respiratory Disease Clinics
- WV Occupational Pneumoconiosis Board
- Hazard Prevention Institute
- Risk Management Services
- National Cancer Institute



Corporate Collaborators

- **Mining companies**

- Centennial Coal
- Lhoist North America
- James River Coal
- North American Coal
- Jim Walters Resources
- Freeport_McMoran
- Arch Coal
- Newmont Mining
- ASARCO

- **Consultants/Institutes**

- Appalachian Mining & Engineering
- Cardno
- Naval Research Laboratory



HEALTH & SAFETY INTERVENTIONS



GRANT ACTIVITIES AND OUTPUTS

The Foundation has funded 24 grants to 13 different organizations as of July 2017.

[View Grant Portfolio](#)

Some projects have been completed with Final Technical Reports submitted.

[View Project Outputs](#)

PRIORITY AREA FUNDING SUMMARY

- Dust and Toxic Substances – 3 awards
- Ground Control – 4 awards
- Fire and Explosion Prevention – 6 awards
- Monitoring Systems and Integrated Control Technologies – 5 awards
- Machine Design and Ergonomics – 3 awards
- Personal Protective Equipment – 3 awards

Prevention Through Design

OVERVIEW

These studies encompass efforts devoted to prevention by design whereby engineering controls, mine design, machine design, or use of personal protective equipment or safety and health technologies are used to prevent conditions, circumstances, or events that cause illness, disease, injury or death to mine workers. A number of specific aims are targeted for intervention and intervention effectiveness studies that address specific aspects of mining.

PRIORITIES

Dust and Toxic Substance Control: *Prevention of health risks due to generation of dust or other toxic substances.*

Ground Control: *Prevention of unstable ground conditions that result in collapses, ventilation disruption, and miner entrapment; roof and rib falls; and injuries due to insufficient support coverage.*

Fire and Explosion Prevention: *Prevention of conditions that cause or contribute to mine explosions and fires and effective intervention measures to extinguish their propagation.*

Monitoring Systems and Integrated Control Technologies: *Recognition and intervention of the escalation of conditions that lead to health and safety risks before they reach hazardous levels.*

Machine Design and Ergonomics: *Prevention of machines inadvertently striking or pinning miners and injuries related to operation and repair of mining equipment.*

Personal Protective Equipment: *Prevention of injury and disease by application of PPE or environmentally-controlled spaces.*

Website provides a source of reference

- Organized around topical areas.
- Each topical area shows:
 - Priority descriptions
 - Grant portfolio (funded projects)
 - Project outputs (Final Reports)
 - Priority area funding summary

<https://www.alpha-foundation.org>

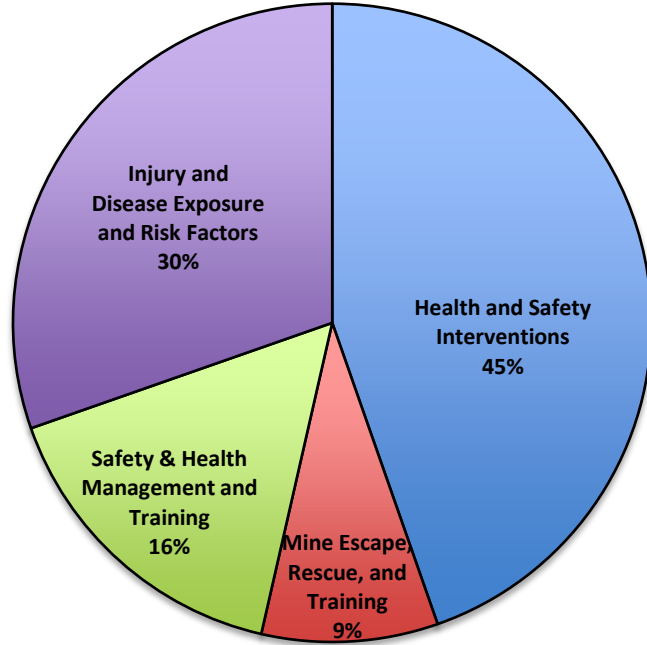


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Topical Area Grant Distribution



- **A balanced portfolio**

- Health and Safety Interventions – 25 projects
- Mine Escape, Rescue, and Training - 5 projects
- Safety & Health Management and Training – 9 projects
- Injury and Disease Exposure and Risk Factors – 17 projects

Health and Safety Interventions

PRIORITY AREA FUNDING SUMMARY

- Dust and Toxic Substances – 3 awards
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Mine Escape, Rescue and Training

PRIORITY AREA FUNDING SUMMARY

- Communications and Tracking -3 awards
- Training and Decision Making – 1 award
- Sheltering and Escape Strategies – 0 awards
- Rescue Strategies and Technologies – 1 award

Safety and Health Management and Training

PRIORITY AREA FUNDING SUMMARY

- Safety and Health Management – 6 awards
- Training – 3 awards

Injury and Disease Exposure and Risk Factors

PRIORITY AREA FUNDING SUMMARY

- Musculoskeletal Disorders – 6 awards
- Cardiovascular disease – 2 awards
- Respiratory Disease – 5 awards
- Hearing Loss – 0 awards
- Surveillance and Epidemiology Methods – 4 awards

Individual project listing provided as separate handout



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Discussion Topics

- **Avoiding duplication of efforts**
 - Ensuring open lines of communication
 - Keeping each other informed on solicitation priorities and scheduling
 - Sharing of (proposal) information?
- **Benefits of NIOSH's role in evaluation/review of Alpha proposals**
 - Valuable exchange of information from review process
 - Hopefully, aids NIOSH in awareness of Alpha activities and research priorities
 - Provides pathway for follow up discussions of project accomplishments/technical concerns
- **Opportunities and limitations of working together**
 - Can NIOSH researchers cooperate in an Alpha funded study?



Thank you for hosting us!

