

# **ALPHA FOUNDATION FOR THE IMPROVEMENT OF MINE SAFETY AND HEALTH**

## **Call for Proposals for Short-Term Innovative and Exploratory Research Projects**

### **Program Overview**

The Foundation issued its first call for proposals in January 2013. The initial solicitation covered a broad perspective addressing health and safety issues in four major focus areas. The peer review process was completed in September of 2013 and the Foundation is pleased to announce the award of research projects representing all four of the focus areas (<http://alpha-foundation.org>.)

*The emphasis for this solicitation regarding short term research projects is to encourage new, exploratory and developmental research efforts, seeking innovative thinking and solutions to mining health and safety problems.* The Foundation will be accepting proposals for this solicitation until December 15, 2013 with awards planned for the first quarter of 2014. The Foundation has allocated \$1,500,000 and anticipates funding up to 15 short-term research projects. Submission requirements and areas of interest are described below.

### **Purpose and Vision**

The goal of the Foundation is 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.

Pursuant to this goal, the Foundation is seeking to award research addressing the root causes of disease, injuries, and fatalities in the mining industry and achieve successful implementation of practical solutions derived from the research effort. To this end, cooperative research efforts with mining entities, stakeholder groups and state and federal institutions are encouraged. The Foundation is committed to fund projects that explore innovative ideas and concepts, complement existing research efforts and address knowledge or technology gaps in mine safety and health. In addition, the Foundation believes a balanced approach, incorporating a blend of engineering and health science is needed to solve these mining safety and health problems.

### **Specific Aims and Research Areas of Interest for Exploratory and Developmental Short Term Research Projects**

The Foundation identified four broad research areas of interest: 1) Safety, 2) Health, 3) Safety and Health Management, and, 4) Training. A detailed description can be found on

the First Call for Proposals, under Specific Aims and Research Focus Areas, page 3, <http://www.alpha-foundation.org/callforproposals.html>.

While incremental improvements in mine safety and health continue to be achieved through both experience and targeted research efforts, the solution to some of the most complex problems may require novel approaches.

With that in mind, the Foundation is seeking to develop innovative approaches that could overcome barriers and lead toward potential solutions to some of the most difficult health and safety problems in mining. ***The emphasis for this solicitation regarding short term research projects is to encourage new, exploratory and developmental research efforts***, by providing support for the early and conceptual stages of project development. The Foundation recognizes that these studies may involve considerable risk, but anticipate the outcome may lead to a breakthrough in a particular area, or to the development of novel techniques, agents, methodologies, models, or serve as essential pilot and feasibility studies.

***While any innovative idea within the broad mining health and safety arena will be considered, the following examples provide insight into the type of items that can be considered under this solicitation.***

- Technology or engineering control innovations that significantly enhances mine safety or health beyond current levels by strategically addressing gaps or preventing catastrophic conditions from occurring.
- Mine design or operational techniques that aim to overcome limitations of current mine practices.
- Strategic planning and conceptual developments for robotic and/or automation technologies and applications that are compatible with MSHA permissibility requirements or solutions to overcome these limitations.
- Alternative protocols for assessing and sampling mine conditions and identifying safety or health hazards using technologies that can improve accuracy, provide information that is not currently attainable, and/or provide opportunities for faster and more effective resolution.
- Mine design and technology developments that maximize efficiency for in-place sheltering and trapped miner search and rescue technology applications.
- Understanding scale effects and their impact on translating laboratory and modeling results to full-scale engineering design in the absence of full-scale facilities such as the NIOSH Lake Lynn Laboratory.

- Assessment of technologies and barriers to placing miners in controlled work environments for activities that are at elevated risk of exposure.
- Conceptual developments to identify or eliminate musculoskeletal disorders (MSD) or dust-related diseases in high risk mining activities.
- Conceptual plans for innovative approaches to regulation or management of mine safety and health.
- Investigation of health conditions prevalent among miners but not commonly associated with exposure to mining hazards.
- Initial development of hazard, disease, or injury surveillance methods that enhance identification of health and safety problems earlier or with greater precision than current methods.
- Research on effectiveness of injury and illness prevention programs and/or metrics for monitoring effectiveness of such programs.

## **Eligibility Criteria and Proposal Limitations**

*Proposals will be accepted only from U.S.-based, academic institutions and not-for-profit organizations qualifying as exempt from taxation under Section 501(c)(3) of the Internal Revenue Code. A current copy of the organization's IRS Determination Letter or a statement from the academic institution describing its formation and status as tax-exempt organized and operated exclusively for educational purposes must be submitted with the proposal.*

- Proposed projects must be relevant to the U.S. mining industry.
- Consistent with Foundation values, this program embraces diversity and inclusion across multiple dimensions such as race, ethnicity, gender, age and disadvantaged socioeconomic status.
- When appropriate, proposals are encouraged from applicants who can help expand the perspectives and experiences beyond that traditionally utilized in mining to meet the goals of the Foundation.
- The period of performance cannot exceed 15 months.
- The total cost of the effort shall not exceed \$150,000.

## **Short Term Proposal Submission Requirements**

The instructions below should be used for completion of short term research project proposals. Submissions are to be forwarded to [alphafoundation@glenmede.com](mailto:alphafoundation@glenmede.com) by midnight (U.S. Eastern Time Zone), **December 15, 2013**. Any questions may be directed to the same email address. Late submissions will not be accepted.

## Layout of the Proposal

The research proposal consists of six parts with the page limits indicated. Detailed guidance for completing each part is provided in this document. (Page limits assume 11-point font with 1.0 line spacing using MS WORD file formats.

<b>Part</b>	<b>Description</b>	<b>Page limits</b>
Cover Page	Summarizes the project title and other pertinent information.	1 page
Research Plan	The research plan identifies the problem and why it is significant, the research strategy and how innovation will be used to solve the problem, and summarizes follow up effort needed to achieve solution to the problem.	10 pages
Project Schedule and Decision Points	Provides a summary of the critical decision points and timeline for research tasks.	2 pages
Resources and Commitments	Identifies resources, both people and facilities, necessary to complete the work. Also identifies second/third party commitments if necessary to achieve the goals of the project.	3 pages
Budget	Summary the budgets necessary to conduct the designated short-term research and provide an estimate of additional funds to conduct follow up work.	3 pages
Appendix	Biographical sketches, letters of commitment, proof of 501(c)(3) or non-profit status.	As needed

## SHORT TERM PROPOSAL CONTENT AND FORMAT

The short term proposal shall be formatted as follows and provide sufficient information to address the requirements identified in each area.

### COVER PAGE

A separate cover page shall be labeled "**SHORT TERM RESEARCH PROPOSALS FOR THE ALPHA FOUNDATION FOR THE IMPROVEMENT OF MINE SAFETY AND HEALTH**" and shall include the following information and must be signed by an authorized officer:

- Proposal Title
- General Focus Area (Safety, Health, Safety Management, or Training)
- Institution or Submitter's Name
- Principal Investigator's Name and Contact Information (telephone numbers, fax numbers, and email addresses)
- Authorizing Officer's Name and Contact Information (telephone numbers, fax numbers, and email addresses)
- Period of Performance
- Requested Funding

### SECTION A: RESEARCH PLAN (Maximum 10 pages)

***Problem statement and an assessment of barriers toward solving the problem:*** Provide a clear statement of the problem and its relevance to the topical focus areas identified as priorities in the solicitation. Highlight research gap(s) and describe the barriers that are preventing solution to this problem that will be addressed by these efforts. This assessment should explain why a different approach is justified.

***Innovation Identification and Goals:*** Identify what major breakthrough or innovation is being initiated by this effort and summarize exactly what the short-term effort is intended to achieve. The specific aims should be clearly identified and address how they will improve specific scientific knowledge or how the successful completion of the aims can change the concepts, methods, technologies, treatments, services, or preventative interventions and drive breakthroughs in mining safety and health. This assessment should conclude with a well-defined proposed measure of success that will be evident at the completion of the short-term effort, which can include the evidence of the promising outcome that supports justification for a future competitive

application submitted to the Foundation or other funding authority.

**Research strategy:** Describe how the short-term research will address the problem and why the approach is innovative.

This should include a description of research tasks that provide a clear roadmap that will allow reviewers to understand what work will be done, when it will be done, where it will be done, who will collaborate, which mining operations will be involved (when necessary), what data will be collected and how it will be analyzed, and what facilities will be used or need to be acquired.

But it should also reinforce why this approach is innovative or different than previous efforts that have failed to produce the intended outcome. Accordingly, the proposal should address questions such as the following:

- *How it is different?*
- *Why it is different?*
- *Why does it have a chance to succeed where other approaches have failed or why can it achieve a new paradigm when others couldn't?*
- *Has it been done before for other applications?*
- *Does it require any change in current mining practice?*
- *Does it require any variance of regulatory policies?*

This section should conclude with a realistic assessment of the critical elements that are considered high risk that must be achieved if the effort is to be successful. Alternative options that are planned as part of the decision making process during the execution of the project should be clearly described here as well.

**Potential follow up effort:** Provide a synopsis of anticipated next steps. Sufficient information should be provided so that the reviewer can judge the perceived level of risk to achieve a successful outcome if the short-term (pilot/exploratory) effort demonstrates promising results. A detailed cost estimate to completion is not required since there are many unknowns prior to the completion of the short-term effort, but an estimate of the range of costs for next steps is recommended.

## **SECTION B: PROJECT SCHEDULE AND DECISION POINTS** (Maximum 2 pages)

**Time line:** Provide a timeline associated with the Research Tasks identified in Section A, including the Decision Points (Milestones) and Deliverables listed below.

**Decision Points:** The proposal should identify key milestones including, but not limited to:

- Any point when a decision must be made that can drastically impact the direction of the project.
- Any point when something must be completed before further progress is possible in a critical area.

List the project decision points and describe how the decisions may impact the remainder of the project.

**Deliverables:** Provide a listing and brief description of what outputs are planned for the project as well as any point when information is to be disseminated.

### **SECTION C: RESOURCES AND COMMITMENTS** (Maximum 3 pages)

**Facilities and Equipment:** Detail the facilities and equipment that are needed to support or implement the proposed research. Document budgetary considerations for any facility or equipment that is critical to the project but is not presently available.

**Detailed Personnel Plan:** A detailed personnel plan table that indicates the FTE and project contributions of each proposed project team member. Include the following information:

- Name and Status. Starting with the project officer, list the names and degrees or student status of all personnel who are involved with the project during the budget period.
- Role on Project. Identify the role of each individual listed on the project. Describe their specific contributions as it relates to accomplishing either a specific aim or tasks associated with an aim.
- Percent of Effort on Project. For each FTE position, list the percent effort to be spent on this project.

**Commitment of Second/Third Party Affiliations and Stakeholder Partnerships:** Provide proof of partnership agreements and/or commitments that have been established which are critical to accomplishing the scope of work. This section should also include the contributions and/or roles of any external partners. Letters of commitment from all external partners should be included. NOTE: The Foundation cannot be responsible for obtaining or securing field or laboratory sites or establishing points of contact for proposed studies.

## **SECTION D: BUDGET** (Maximum 3 pages)

This section provides justification that the requested budget is sufficient and necessary to accomplish the efforts described in the research proposal given the resources described in Section C. ***The budget should correlate with the tasks associated with the various specific objectives described in Section A.*** New equipment and/or software that is described as being necessary to conduct the various tasks should be detailed in the budget with a reasonable approximation of cost. Other budget items such as travel for field visits should also correspond with the research tasks highlighted in Section A.

- *Salary:* Provide costs for proposed personnel.
- *Travel:* Itemize travel requests. Provide the purpose of each trip.
- *Supplies:* Estimate overall cost of supplies.
- *Equipment:* Itemize major equipment needs including computers and software.
- *Contractual:* Estimate of contractual costs if applicable. It should be noted that contractual efforts to profit organizations should be minimized and will be considered acceptable only if deemed highly critical to the outcome of the proposed effort.
- *Other:* Itemize any other expenses by category and unit cost. These might include donor fees, publication costs, computer charges, rentals and leases, equipment maintenance, and service contracts.

## **SECTION E: APPENDIX**

- *Biographical Sketches:* Attach biographical sketch of all personnel assigned to the project.
- *Letters of commitment:* Attach all letters of commitment with mining companies or other entities that are needed to fulfill the research proposal and meet the objectives of the proposed work.
- *Proof of 501(c)(3) or non-profit status necessary to meet the eligibility requirements for award.*

## **Proposal Review and Selection Criteria**

Upon submission, the short-term research proposals will be divided into appropriate groups based on topical area. A committee composed of external content and methods experts will evaluate and rate all submissions using the criteria listed below for final review by Foundation Directors and staff in order to arrive at funding decisions.

- ***Significance (20%):*** Are the proposed research goals, hypotheses, and problem solution well aligned with the specific aims and areas of interest outlined in this solicitation and/or does it address a mine safety and health issue that has proven difficult to solve.



- ***Innovation (35%):*** Does the proposed effort challenge and seek to shift current research, practice, or paradigms by utilizing novel concepts, approaches or methodologies, instrumentation, technologies or interventions or provide solutions to complex problems that have escaped solution by current research efforts and practices?
- ***Research Strategy (30%):*** Are the overall strategy, methodology, and analyses well reasoned and appropriate to accomplish the specific aims of the project? Are potential problems, alternative strategies, and benchmarks for success presented?
- ***Resources (15%):*** Are the investigators, collaborators, and other researchers well suited to the project? If mine operator or second/third party collaboration is required, are there commitments provided? Are the facilities necessary to conduct this work available? Is the proposed funding adequate?

## **Level of Awards**

Approximately \$1.5 million is committed to this solicitation. It is expected that up to 15 qualified projects will be funded. Projects may not exceed 15 month in duration. The award amount is capped at \$150,000.

## **Performance Assessment and Reporting Requirements**

Grantees are expected to meet Foundation requirements for the submission of narrative and financial reports, as well as periodic information needed for overall project performance monitoring and management. Project directors may be asked to participate in periodic meetings and to give progress reports on their grants. Written reports on interim results will be required on a semi-annual basis.

Grantees are encouraged to participate and submit abstracts for publication in trade magazines and/or peer-reviewed venues and give presentations at established conferences or other venues if research efforts reach a level where publication of results is warranted.

At the close of each grant, the principal investigator will be required to provide a written report on the project and its findings suitable for wide dissemination within the public domain.

## **Use of Grant Funds**

Contract/grant funds may be used for project staff salaries, consultant fees, data collection and analysis, meetings, supplies, project-related travel, and other direct project expenses, including a limited amount of equipment essential to the project. ***The Foundation's maximum allowable indirect cost rate for facilities and administrative indirect costs is 20%.*** The indirect cost should be based on direct costs such as: salaries, wages, fringe benefits, materials/supplies, services, travel, and subcontracts/subgrants up to the first \$25K of each subcontract/subgrant. The following are excluded from the calculation of the indirect cost: subcontracts/subgrants in excess of \$25K, equipment, capital expenditures, charges for patient care, tuition, rentals, scholarships, and fellowships. In keeping with Foundation policy, grant funds may not be used to support clinical trials of unapproved drugs, to construct or renovate facilities, for lobbying, for political activities, or as a substitute for funds currently being used to support similar activities.

## **Disclaimer**

The Foundation is not responsible for the content or correctness of materials supplied in response to its solicitations and generally and specifically disclaims any responsibility for the same. Proposers are expected to appropriately mark each page of their submission that contains proprietary information. The Foundation will exercise reasonable care in protecting proprietary information from unauthorized disclosure.