INTRODUCTION

This publication constitutes a Broad Agency Announcement (BAA) by the Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health (NIOSH), as contemplated in Federal Acquisition Regulation (FAR) 6.102(d)(2). A formal Request for Proposals (RFP), solicitation, and/or additional information regarding this announcement will not be issued. This announcement will remain open until January 16, 2018 or until replaced by a successor BAA. Concept papers must be submitted by January 16, 2018 for funding consideration during fiscal year 2018.

NIOSH will not issue paper copies of this announcement and reserves the right to select for award, all, some or none of the proposals in response to this announcement. NIOSH provides no funding for direct reimbursement of proposal development costs. Technical and cost proposals (or any other material) submitted in response to this BAA will not be returned. It is the policy of NIOSH to treat all proposals as sensitive competitive information and to disclose their contents only for the purposes of evaluation.

Awards under this BAA will consist of firm fixed price contracts. Therefore, proposals submitted as a result of this announcement will fall under the purview of the Federal Acquisition Regulations (FAR).

I. GENERAL INFORMATION

A. Agency Name:
   Centers for Disease Control and Prevention
   National Institute for Occupational Safety and Health
   Office of Mine Safety and Health Research
   626 Cochrans Mill Road
   Pittsburgh, PA 15236

B. Research Opportunity Title: Development and Demonstration of Mine Safety and Health Technology, Office of Mine Safety and Health Research

C. Program Name: Office of Mine Safety and Health Research

D. Research Opportunity Number: 2018-N-67627

E. Response Date: This announcement will remain open until January 16, 2018. Concept papers will be accepted from the release of the solicitation through January 16, 2018. CONCEPT PAPERS SUBMITTED AFTER THE DEADLINE WILL NOT BE ACCEPTED. Full proposals for concept papers that are found to be technically acceptable will be due within 30 days after notification by the Contracting Officer.
F. Inquiries and Additional Information: Information and specific questions of a technical business nature only will be accepted via e-mail sent to Contracting Officer at the following address: cmitchell@cdc.gov. Include your name and e-mail address on the message. Responses to the e-mail questions will be handled on a first-come basis and generally will be answered within 10 business days.

PHONE CALLS WILL NOT BE ACCEPTED.

Additional information is also available online at the following address: [http://www.cdc.gov/niosh/mining/researchprogram/fundingops.html](http://www.cdc.gov/niosh/mining/researchprogram/fundingops.html)

G. Research Opportunity Description

The Mine Improvement and New Emergency Response Act of 2006 (MINER Act) permanently established the Office of Mine Safety and Health Research under the direction of an Associate Director, within the National Institute for Occupational Safety and Health. One purpose of this office is to enhance the development of new technology and technological applications, and to expedite the commercial availability and implementation of such technology in mining environments. The MINER Act grants the Office of Mine Safety and Health Research the authority to (1) award competitive contracts and grants to institutions and private entities to encourage the development and manufacture of mine safety equipment and (2) award contracts to education institutions or private laboratories for the performance of product testing or related work with respect to new mine technology or equipment. This announcement is an opportunity for the award of contracts for enhancing safety in mines.

The Office of Mine Safety and Health Research of NIOSH is soliciting concept papers to conduct research, exploratory development, testing, or evaluations of new technologies to improve mine safety, or to adapt technologies from other industries for application in mining environments. The primary interest of this broad agency announcement is to promote the modification or final development of practical technologies or systems that can be adopted by the mining community in a short period of time. Under this specific solicitation, proposals to conduct theoretical or basic research will not be considered. NIOSH encourages proposals that include collaboration with mining industry partners who understand the reality of the mining environment and can provide insight into mine design requirements and potential commercialization of the technology.

Fatality and injury data continue to highlight the need to develop new or improve existing technologies or adapt technologies from other industries to address safety and health issues in coal, metal and non-metal, and stone, sand, gravel, surface, and underground mines. NIOSH provides five topical areas of importance below to guide responders in addressing its highest priorities. However, NIOSH strongly encourages responders to propose solutions to health and safety issues that are outside of these areas. In addition, NIOSH welcomes proposals in the surveillance area or other work that involves the extraction of predictive information that could produce useful data for identifying the future technology needs of the mining industry.
1. **Low-Cost Personal Gas Monitor to Assess Breathable Air**

Filter Self Rescuers (FSR), Self-Contained Self-Rescuers (SCSR) and Closed Circuit Escape Respirators (CCER) are used in mining to facilitate self-escape following a mine fire or explosion. FSRs are typically used in metal/nonmetal mining to provide protection from carbon monoxide while there is adequate oxygen to sustain life; SCSRs and CCERs are used in coal mining to protect against all products of explosion or fire and can be used in an IDHL (Immediately Dangerous to Life or Health) atmosphere. Under MSHA regulations (Sec. 75.1714-7) an MSHA-approved, handheld, multi-gas detector that can measure methane, oxygen, and carbon monoxide must be provided to each group of underground miners and to each person who works alone, such as pumpers, examiners, and outby miners. Information about the breathable atmosphere (as indicated by a gas detector) is critical to the determination of when a SCSR/CCER must be donned, when it can or cannot be removed to facilitate communications and to identify the appropriate procedure when a change-over to another unit for continued self-rescue must be done. While the MSHA regulations require a gas monitor to be present, it is possible that an individual might become separated from a group or that the gas monitor could be improperly read in a panic situation. A low-cost unit that could be worn by each individual miner and requiring minimal calibration that could establish and alarm when a mine atmosphere reaches the IDHL stage would be beneficial. The monitor would have to detect methane, oxygen, and carbon monoxide and include logic to determine when an IDHL level had been reached. It would also have to meet MSHA intrinsic safety guidelines.

NIOSH previously funded a BAA contract that produced a unit similar to that described above developed as part of a hybrid SCSR/FSR program that never went into commercial production.


In addition, the USBM had done work developing a CO monitor; that unit was never commercialized.

Chilton, J.E., Carpenter, C.R. (1989) A Personal Miner’s Carbon Monoxide Alarm, USBM IC 9233, 18 p. (using a commercially available chemically treated disk that changes color by reaction to CO; color change sensed by a reflective-type optocoupler).

2. **SCSR/CCER Communications**

In the event of a mine explosion or fire, underground miners don a Self-Contained Self Rescuer (SCSR) or Closed-Circuit Escape Respirator (CCER) to facilitate self-escape in a potentially lethal atmosphere. Given the possibility of limited visibility and the large reliance on vocal communication in an emergency, a method to facilitate verbal communication is a critical design requirement that has not been overcome. The currently NIOSH-approved SCSRs and CCERs use a bite-bit that must be removed to allow the wearer to talk, exposing the miner to the environment; bite-bits are chosen because they seal without regard to facial hair or face topology. The potential consequences of removing the bite-bit for communications were
shown most recently in 2006 at the Darby No. 1 Mine disasters, resulting in 3 fatalities (two others died in the initial explosion). NIOSH is currently working on a design that uses an ori-nasal mask with mouthpiece that can be temporarily removed to allow miners to talk with the apparatus donned without environmental exposure, however that design is not commercially available and could impact the form factor of current SCSRs, impacting non-deployed wearability.

Communications using a bite-bit has been addressed previously, and was implemented commercially in SCSRs by MSA. In 1992 the MSA Portal-Pack replaced the MSA 60-Minute SSR. The Portal-Pack included a small device in line with the mouthpiece designed to transmit vibration from inside to outside the breathing hose. This device, designated a “voice mitter” was designed to facilitate communications. While this device did facilitate sound transmittal, it was still limited by an individual’s ability to form speech while wearing a mouthpiece.

MSA patented an SCSR design that utilized the breathing bag/breathing tube assembly as a speaking amplification diaphragm, facilitating voice communications (Patent 6,443,149, Issued Sept. 3, 2002, filed 1999). This device was included in the Lifesaver 60 which replaced the Portal-Pack in 1996 but it suffered the same limitations.

NIOSH is looking for innovative ways to facilitate communications while using a SCSR or CCER in a deployed mode.

3. **Miniaturized CPDM with Silica Measurement Capability**

The Continuous Personal Dust Monitor currently in use in underground coal mining and manufactured by Thermo Scientific (PDM3700) has significantly improved respirable coal dust monitoring capabilities and compliance with MSHA coal mine dust exposure regulations. Required by MSHA since April 1, 2016, the CPDM provides near real-time results and allows operators and miners to identify elevated dust levels and take immediate corrective action to prevent overexposure of mine workers. In open industry meetings prior to passage of the MSHA regulations, in MSHA-industry dust partnership meetings, at the NAS Occupational Exposure to Respirable Coal Mine Dust in Underground Mines committee meetings, and in NIOSH visits to mine sites, mine operators and mine workers have indicated that the second generation CPDM should be designed to reduce the size, weight, and noise of the current PDM Model 3700. NIOSH has one ongoing contract research effort (Contract 200-2016-91153) directed at a miniaturized version of a dust monitoring device but additional efforts are required. A mass-based, compliance grade, respirable coal dust monitoring unit that is more economical to purchase, smaller, lighter, quieter and in an improved ergonomic form factor than the existing unit would better meet the needs of the mining the industry. There is a further need for similar mass-based, compliance grade, technology directed toward real-time crystalline silica dust concentrations, for application in coal (permissible unit), metal/nonmetal, all surface mines, construction and other industries. This could be done through either a modular addition to a respirable coal dust monitor or through a stand-alone unit.

Research is being sought under six different but related alternatives:

1. **A significantly smaller, lighter and quieter CPDM.** The new CPDM must function as a regulatory compliance respirable coal dust monitor meeting NIOSH sampling accuracy requirements (30CFR Part 74), equivalency to a gravimetric sampler, and ability to meet MSHA intrinsic safety approval requirements.
2. A stand-alone, near real time, compliance grade crystalline silica dust monitor.

3. Integration of crystalline silica dust concentration measurement for compliance purposes into the device proposed for Item (1.)

4. A small wearable personal exposure monitor not intended for compliance but rather to provide a real-time indication to a mine worker when exposure to respirable coal dust potentially exceeds standards or set limits.

5. A stand-alone, near real time, not intended for compliance crystalline silica dust monitor.

6. Integration of silica dust concentration measurement, also not intended for compliance, into the device proposed for Item (4.).

4. **Application of Unmanned Aerial Vehicles (UAVs) in GPS-Denied Environments**

DARPA Fast Lightweight Autonomy (FLA) program has demonstrated the potential for Unmanned Aerial Vehicles (UAVs) to operate in a GPS-denied environment such as in an underground coal mine.

NIOSH has long sought a robotic solution that could allow for the exploration of dangerous areas of the mine that would not expose miners to the potential hazards. The inability for the robot to navigate the mine and return to a location has always been a restriction. Radio controlled drones and robots are limited in the mine environment by the radio link which is only Near Line Of Sight (NLOS), generally a thousand feet or less. Cable solutions are also limited in length. The desired application would require exploration thousands of feet beyond the available radio range and that which has been achieved by cable spools.

As a result, NIOSH is seeking innovative solutions for UAV drones (or small robots) capable of fully autonomous navigation in a completely GPS denied environment with the following additional restrictions that are characteristic of the mine environment:

- No opportunity for any Global Navigation Satellite System (GNSS) signals and no signals of opportunity that can be used for reference. Very little visually unique landmarks.

- No lighting other than that provided by the drone or robot.

- The drone is likely to be stored underground for weeks or months, and then started anywhere in the mine. Therefore, GPS for initial orientation is not an option.

The autonomous vehicle should be capable of starting at one location (point A) and traversing a course from an initial starting point for a round trip distance of at least 5,000 ft. At a minimum the drone must be able to find its’ way from point A to point B and back again along a series of tunnels typical of underground mines. Point B will be defined by a visual landmark such as a refuge chamber, power center, or belt head with known coordinates relative to the map base.

For navigation assistance, quality mine maps are generally available, and the navigable environment is predictable in that mines are generally long interconnected tunnels, or a series of parallel tunnels. The choice of path directions is nearly always limited to a maximum of six
alternatives from any point in the mine, with at least 30 degrees of azimuthal difference between the possible different directions.

The autonomous navigation is the principle issue, and to date there are no known solutions to the underground mine environment challenges. Techniques like Visual-Inertial Odometry (VIO), which fuses information from a camera and inertial sensors to estimate device position without relying on GPS and GNSS hold promise. However, the lack of lighting in the mine and smoke during emergencies create a challenge for a VIO solution. Augmentative techniques such as LIDAR and map integration have been considered, but no viable solutions are currently known.

Other desirable features of a solution include the ability to fly a predefined course and return, ability to carry a 3 pound payload, low power consumption, and collision tolerance. Ultimately, a vehicle that is Intrinsically Safe and can shut itself off if methane levels exceed 5% would be highly desirable.

5. **Develop Helmet-CAM Technology for Underground Coal Mines**

NIOSH and its industrial partners have developed the Helmet-CAM dust exposure assessment technology, integrating real-time video and dust exposure data into a powerful assessment tool. This assessment technique is performed by having a miner wear a small video recorder on his or her hardhat or shoulder strap along with a real-time aerosol monitor that is housed in a backpack, on a safety belt or safety vest and records the individual’s respirable dust exposure at two-second intervals. After a miner performs his or her job while wearing the unit, the video and dust exposure data files are downloaded to a computer and then merged together using a NIOSH-developed computer software program called EVADE (Enhanced Video Analysis of Dust Exposure). By providing synchronized playback of the merged video footage and logged dust exposure data, the EVADE software allows for the assessment and identification of key work areas and processes, as well as work tasks that significantly impact a worker’s personal respirable dust exposure.

The Helmet-CAM has received widespread acceptance in surface and plant applications and has the same potential for underground mining operations, tying activity monitoring with exposure parameters. Research is required to develop a similar system (consisting of video, lighting and dust monitoring) or capabilities (1) adapted for available low lighting levels found in underground mines and (2) as an intrinsically safe version for use in underground coal mines.

The primary goal of the MINER Act technology mandate is to improve/increase the use of technology in mines to improve mineworker safety and health, and the intent of this broad agency announcement is to support enabling activities such as technology identification, validation, demonstration, adaptation, and/or commercialization. Under this specific solicitation, proposals to conduct theoretical or basic research will not be considered. The following examples are presented to further illustrate appropriate submissions under this solicitation beyond the more general guidance listed previously.

1. A safety technology that is currently in a prototype stage, which will require funding for final development and adaptation to the mining environment. This could include modification of prototypes to account for operation in the challenging underground coal environment, modification to meet permissibility requirements, and/or demonstration of the technology at actual mine sites.
2. A safety technology that is currently being used in another industry and requires modification to be adapted for mining applications. This could include system redesign, modification to meet permissibility requirements, in-mine testing to establish the efficacy of the technology, and/or demonstration of the technology at mine sites.

3. Analysis of candidate technologies to establish their potential to improve safety, and/or analyses of barriers to technology application or means of overcoming such barriers.

H. Instrument Type(s) and Period of Performance - It is anticipated that awards will take the form of contracts. Work that will be completed in 24 to 36 months or less is desired under this solicitation, but is not a requirement; projects requiring up to 48 months will be considered.

II. AWARD INFORMATION

NIOSH plans to make awards that represent the best value to the Government in accordance with the evaluation criteria. NIOSH is seeking participants for this program that are capable of developing and demonstrating the technologies required to achieve the goals described in this announcement.

1. Total Amount of funding the program office expects to award through the announcement:
   - Approximately $2M to $5M for the duration of this BAA.

2. Anticipated number and estimated amount of awards:
   - NIOSH estimates that the typical contract award under this solicitation will be between $200,000 to $300,000, although proposals will be considered up to a ceiling of $650,000. It is estimated that approximately 6 to 10 awards will be made.

3. Anticipated award types:
   - The contracts will be Firm Fixed Price. NIOSH will not issue grants, cooperative agreements, or other transaction agreements under this BAA.

III. ELIGIBILITY INFORMATION

All potential applicants that meet the requirements of the application and submission deadlines are eligible.

IV. APPLICATION AND SUBMISSION INFORMATION

A. Application and Submission Process

Offerors must submit a Concept Paper prior to submitting a Full Proposal. NIOSH will evaluate the Concept Papers and the CDC Contracting Officer will provide feedback via
email to the Offerors for those Concept Papers that will move forward to a full proposal. Full Proposals will be solicited from Concept Papers that are of “particular value” in fulfilling the goals of the Broad Agency Announcement. However, any such request for a Full Proposal submission does not assure a subsequent contract award. The Full Proposals must provide detailed technical and cost information as outlined herein to support the scope of the proposed effort. Full Proposals will be evaluated and a determination made for contract awards.

B. Content and Format of Concept Papers/Full Proposals

The proposal submissions will be protected from unauthorized disclosure in accordance with FAR 15.207, applicable law, and regulations. Offerors are expected to appropriately mark each page of their submission that contains proprietary information.

General Formatting Requirements (Concept Papers and Full Proposals)

1. Paper Size - 8.5 x 11 inch paper
2. Margins - 1 inch, all
3. Spacing – 1.15 spacing
4. Font - Times New Roman, 12 point
5. Copies - One (1) original and five (5) additional hard copies.
6. Electronic file submission – Files must be submitted as a MS Word document with the exception of the cover page.

Concept Paper Content (not to exceed 10 pages excluding the cover page, concept papers exceeding the 10 page limit will not be evaluated)

1. **Cover Page**: A separate cover page shall be labeled "CONCEPT PAPER," and shall include the BAA number, proposed title, Offeror’s administrative and technical points of contact, with telephone numbers, fax numbers, mailing and email addresses, total cost of the concept, period of performance, and corresponding focus area (if applicable) that is listed in the solicitation, and shall be signed by an authorized officer.

2. **Abbreviated Statement of Work:**

DO NOT INCLUDE ANY PROPRIETARY DATA OR MARKINGS IN THE STATEMENT OF WORK (SOW). The abbreviated SOW must be provided that clearly describes the objectives, scope of work, and the technical approach.

The following SOW format shall be used:

a. **Title of Project**: Provide descriptive title that reflects the proposed effort.

b. **Synopsis of the Technical Approach**: This section shall include the Problem Statement or Focus Area and identify specifically what mine safety issue or focus area this proposed technology development is attempting to address.

c. **Background** (no more than one page): The background section should provide a clear and brief description of the relevance of the proposed effort and discuss the technology that will be proposed in general, non-technical terms. The background section should
address three specific areas:

i. Briefly describe the enabling technology that is being proposed and how this technology will be used to solve the issue designated in the problem statement.

ii. Define the state of readiness of the enabling technology and what is needed to bring the proposed technology to the level of development necessary to solve the designated problem.

iii. Identify any known or perceived barriers to the implementation of this technology due to the uniqueness of the mining environment or statutory regulations.

d. Objective: A brief and succinct statement of what will be done relevant to the problem statement and the expected outcome.

e. Scope of Work (no more than five pages): The scope of work should provide a brief and clear description in non-technical terms as much as possible and should identify the major steps that will be undertaken to achieve the proposed outcome. The scope of work should address the following areas:

i. Briefly describe the current state of the technology.

ii. Address the issues expressed in the background section and how the proposed technology will be developed to solve the problem.

iii. Briefly describe the specific tasks and phases of the work.

iv. Specify the period of performance for the total effort and each task or phase.

v. Milestones, schedule and decision points regarding the development of the technology including rough estimates of cost for each year, task and phase of the effort and total cost.

vi. Briefly identify the required steps to overcome the perceived barriers to the implantation of this technology.

f. Deliverables (no more than two pages): Provide a summary of the deliverables including:

i. Monthly technical reports.

ii. Monthly financial progress reports.

iii. Milestone reports.

iv. Draft Final and Final report. (Note: Time must be included in the schedule for the Government to review the Draft Final report, typically 30 days)

v. All data collection and analysis protocols as applicable.

g. Key Personnel (no more than two pages): A brief summary of the key personnel including: a listing of key personnel with a short summary of qualifications.

Full Proposal Content

1. Volume 1: Technical Proposal - Each section of the Technical Proposal must start on a new page. DO NOT PROVIDE COMMERCIAL PRODUCT ADVERTISING BROCHURES.

- **Cover Page:** A separate cover page must include the words "TECHNICAL PROPOSAL" and the following:
  
  o BAA number;
  o Title of Proposal;
  o Identity of prime Offeror and complete list of subcontractors, if applicable;
• Technical contact (name, address, phone/fax, E-mail and mailing address);
  • Administrative/business contact (name, address, phone/fax, E-mail and mailing address), and;
  • Period of performance.

• **Table of Contents**

• **Statement of Work (not to exceed 10 pages):** DO NOT INCLUDE ANY PROPRIETARY DATA OR MARKINGS IN THE STATEMENT OF WORK (SOW). A SOW must be provided that clearly describes the objectives, scope of work, and the technical approach. Proposals must include a severable, unclassified, self-standing SOW without any proprietary restrictions. It is anticipated that the proposed SOW may be incorporated as an attachment to the resultant award instrument. The Government also reserves the right to modify the proposed SOW based on clarification sessions with the Offer prior to the contract award. The following SOW format shall be used:

  o **Title of Project:** Provide descriptive title that reflects the proposed effort.
  o **Problem Statement or Focus Area:** Identify specifically what mine safety issue or focus area this proposal is attempting to address.
  o **Background:** The background section should provide a clear indication of the relevance of the proposed effort and discuss the technology that will be proposed in general, non-technical terms. The background section should address three specific areas:
    • Identify the enabling technology that is being proposed and how this technology will be used to solve the issue designated in the problem statement.
    • Identify the state of readiness of the enabling technology and what is needed to bring the proposed technology to the level of development necessary to solve the designated problem.
    • Identify any known or perceived barriers to the implementation of this technology due to the uniqueness of the mining environment or statutory regulations.
  o **Objective:** A succinct statement of what will be done relevant to the problem statement and the expected outcome if this effort is funded.
  o **Scope of Work:** The scope of work should provide a clear description in non-technical terms as much as possible and should also expand on the project objectives and of the major steps that will be undertaken to achieve the proposed outcome. The scope of work should address the following areas:
    • Current state of the technology.
    • Specific information addressing the issues expressed in the background section pertaining to how the technology will be developed to solve the problem.
    • Describes the specific tasks and phases of the work. When optional tasks or phases are offered beyond the base proposal, they must be
separately and clearly identified as optional tasks and phases.

- Specify the period of performance for the total effort and each task or phase (including optional tasks or phases).
- Milestones and schedule of events that can be used as progress metrics and decision points regarding the development of the technology.
- Identify the required steps to overcome the perceived barriers to the implantation of this technology.
- Potential paths or avenues to commercialization.
- References: Describes any reference materials that may be relevant to the work being performed.

- **Deliverables and Reporting Schedule:** Detailed summary of deliverables to be provided under the contract. Describe any reporting requirements including content and format, including delivery and ownership of products hardware produced under this effort. Also required is delineation of documentation including but not limited to the following:
  
  - Monthly technical reports.
  - Monthly financial progress reports.
  - Milestone reports.
  - Draft Final and Final report (Note: Time must be included in the schedule for the Government to review the Draft Final report, typically 30 days. Five copies of the final report are required.).
  - All data collection and analysis protocols as applicable.

  At a minimum, a final technical report is required and is to be delivered in both hard copy and electronic format. The final report must be 508 compliant. If the final report contains proprietary information, a second version of the report must be prepared and submitted that is suitable for public release.

- **Special Considerations:** Information that does not fit neatly or logically into one of the other sections.

- **Government Furnished Property:** Document any government furnished property that is required to complete the Scope of Work.

- **Assertion of Data Rights (not to exceed 1 page):** Include here a summary of any proprietary rights to preexisting results, prototypes, or systems supporting and/or necessary for the use of the research, results, and/or prototype. Any rights made in other parts of the proposal that would impact the rights in this section must be cross-referenced. If there are proprietary rights, the Offeror must explain how these affect its ability to deliver subsystems and toolkits for integration. Additionally, Offerors must explain how the program goals are achievable in light of these proprietary and/or restrictive limitations. If there are no claims of proprietary rights in preexisting data, this section shall consist of a statement to that effect.
• **Resource Sharing Plan(s)**

HHS/CDC policy requires that recipients of contract awards make research resources and data readily available for research purposes to qualified individuals within the scientific community after publication.

CDC requires awardees for projects and programs that involve the collection or generation of data with federal funds to develop, submit and comply with a Data Management Plan (DMP) for each collection or generation of public health data undertaken as part of the award and, to the extent appropriate, provide access to and archiving/long-term preservation of collected or generated data.

**Data Management Plan**

Consistent with the terms of and activities expected under the funding opportunity announcement (FOA), as applicable, awardees must develop and submit a DMP generally during the project planning phase, but in any event, prior to the initiation of generating or collecting public health data. Accordingly, the DMP may be evaluated during the application, study proposal, or project review process or during other times in the project period. For FOAs that involve already defined projects which include data collection or generation at the time of application, applications submitted without the required DMP may be deemed non-responsive for award. For FOAs where CDC specifies that submission of the DMP is deferred to a later period, funding restrictions may be imposed pending submission and evaluation of the DMP. For awards where data collection or generation activities may become necessary during the project period, DMPs will be required to be submitted and evaluated during the project period of the award. In all instances described above, the reviewing officials have to approve an acceptable DMP. Costs associated with developing and implementing a DMP, including costs of sharing, archiving and long-term preservation, may be included in the cost proposal.

A DMP for each collection and/or generation of public health data funded by this award, as applicable, should include the following information:

• A description of the data to be collected or generated in the proposed project;
• Standards to be used for the collected or generated data;
• Mechanisms for or limitations to providing access to and sharing of the data (include a description of provisions for the protection of privacy, confidentiality, security, intellectual property, or other rights). This section should address access to identifiable and de-identified data (see below for additional information about access);
• Statement of the use of data standards that ensure all released data have appropriate documentation that describes the method of collection, what the data represent, and potential limitations for use; and
• Plans for archiving and long-term preservation of the data, or explaining why long-term preservation and access are not justified. This section should address
archiving and preservation of identifiable and de-identified data (see below for additional information regarding archiving).

Access to and Archiving of the Data

Awardees whose terms of award do not include submitting data to CDC are expected to plan and prepare for access to and archiving/long-term preservation of collected and/or generated data within the funding period, as set forth below. The final version of a collected and/or generated data set intended for release or sharing should be made available within thirty (30) months after the end of the data collection or generation, except surveillance data which should be made accessible within a year of the end of a collection cycle. In addition, awardees should ensure the quality of data they make accessible and seek to provide the data in a nonproprietary format. Awardees who fail to release public health data in a timely fashion may be subject to procedures normally used to address lack of compliance consistent with applicable authorities, regulations, policies or terms of their award.

For public use de-identified (removal of sensitive identifiable or potentially identifiable information) datasets, an accompanying data dictionary, and other documentation relevant to use of the data set should be deposited in a sustainable repository to provide access to the data. Data that cannot be de-identified can be provided on request under a data-use agreement.

Awardees will be required to inform the appropriate CDC point-of-contact identified in the award via an update to their DMP of the location of the deposited data. The DMP is a living document that should be updated throughout the life cycle of data.

For data underlying scientific publication, awardee should make the data available coincident with publication of the paper, unless the data set is already available via a release or sharing mechanism. At a minimum, release of the data set should consist of a machine-readable version of the data tables shown in the paper.

Requirements set forth in this policy are not intended to conflict with or supersede applicable contract regulations related to agency access to awardee data and records.

Offerors should include a detailed DMP in their technical proposal, as applicable.

The DMP should be developed during the project planning phase prior to the initiation of collecting or generating public health data and will be submitted with the technical proposal. The submitted DMP will be evaluated for completeness and quality at the time of submission. The DMP should include, at a minimum, a description of the following:

- Type of data to be produced in the proposed project;
• Mechanisms for providing access to and sharing of the data (including provisions for the protection of privacy, confidentiality, security, intellectual property, or other rights);
• Use of data standards that ensure all released data have appropriate documentation that describes the method of collection, what the data represent, and potential limitations for use; and
• Plans for archiving and long-term preservation of the data, or explaining why long-term preservation and access are not justified.

Full proposals submitted without the required DMP, as applicable, may be deemed ineligible for award unless submission of DMP is deferred to a later period depending on the type of award, in which case, funding restrictions may be imposed pending submission and evaluation.

• **Qualifications (not to exceed 5 pages):** A discussion of previous accomplishments and work in this, or closely related areas, and the qualifications of the investigators. Key personnel resumes shall be attached to the proposal and will not count toward the page limitations.

• **Management Approach (not to exceed 1 page):** A discussion of the overall approach to the management of this effort, including brief discussions of the total organization, use of personnel, project/function/subcontractor relationships, government research interfaces, and planning, scheduling and control practice. Identify which personnel and subcontractors (if any) will be involved. Include a description of the facilities that are required for the proposed effort with a description of any government furnished equipment, hardware, software, or information required, by version and/or configuration (Refer to Section VII). Identify any planned collaborations with mining industry partners.

2. **Volume 2: Cost Proposal** - The Cost Proposal shall consist of a cover page and two parts. Part 1 will provide a detailed cost breakdown of all costs by cost category and by calendar/fiscal year. Part 2 will provide a cost breakdown by task/sub task using the same task numbers in the Statement of Work. Options must be separately priced.

• **Cover Page:** The use of the SF 1411 is optional. The words "COST PROPOSAL" should appear on the cover page in addition to the following information:
  o BAA number;
  o Title of Proposal;
  o Identity of prime Offeror and complete list of subcontractors, if applicable;
  o Technical contact (name, address, phone/fax, E-mail and mailing address);
  o Administrative/business contact (name, address, phone/fax, E-mail and mailing address);
  o Duration of research and demonstration tasks, and;
  o Summary statement of proposed costs, and;
  o Cognizant DCAA and DCMA point of contact, address, phone/fax/ and E-mail if available.

• **Part 1:** For proposal pricing purposes, Offerors should assume a contract start date
of one hundred twenty (120) days after submission of the proposal. Part 1 should include the detailed breakdown of all costs by cost category and by calendar/fiscal year. When options are contemplated, options must be separately identified and priced by task/subtask corresponding to the same task numbers in the Statement of Work. Please include:

- Direct Labor - Individual labor category or person, with associated labor hours and unburdened direct labor rates;
- Indirect Costs - Fringe benefits, overhead, G&A, COM, etc. (Must show base amount and rate). Please note: Tuition reimbursement is not an allowable expense for these types of contracts and should not be included in the cost proposal;
- Proposed Contractor - Acquired equipment, such as computer hardware, for proposed research projects should be specifically itemized with costs or estimated costs. An explanation of any estimating factors, including their derivation and application, shall be provided. Please include a brief description of the Offeror’s procurement method to be used;
- Travel - Number of trips, number of days per trip, departure and arrival destinations, number of people, etc.;
- Subcontract - A cost proposal as detailed as the Offeror’s cost proposal must be submitted by the subcontractor. The subcontractor’s cost proposal can be provided in a sealed envelope with the Offeror’s cost proposal or will be requested from the subcontractor at a later date;
- Consultant - Provide consultant agreement or other document that verifies the proposed loaded daily/hourly rate;
- Materials should be specifically itemized with costs or estimated costs. An explanation of any estimating factors, including their derivation and application, shall be provided. Please note that 5 hard copies of the final report will be required by NIOSH. Please include a brief description of the Offeror’s procurement method to be used;
- Other directs costs, and;
- Fee/profit including fee percentage.
- Offerors are to provide any current Forward Pricing Rate Agreements in effect at the time of the proposal submission.

**Part 2:** Cost breakdown by task/subtask using the same task numbers in the Statement of Work. When optional tasks or phases are offered beyond the base proposal, they must be separately identified and priced by task/subtask corresponding to the same task numbers in the Statement of Work. Included in this section shall be a proposed payment schedule, linked to the cost breakdown, deliverables, and milestones.

**Subcontracting Plan:** (Note: This requirement does not apply to small business concerns.) Offerors should complete the Small Business Subcontracting Plan found at the HHS Office of Small Business Utilization, http://www.hhs.gov/osdbu/form.html.
C. Significant Dates and Times

This announcement will remain open until January 16, 2018. Offerors are responsible for submitting concept papers or proposals, and any modification, or revisions, so as to reach the Government office designated in the solicitation by the time specified in the solicitation.

1. Submission of Concept Papers: Concept papers must be received prior to 3:00 PM EST time on January 16, 2018. Any concept papers submitted after 3:00 pm EST will not be accepted.

2. Submission of Proposals: Full proposals for concept papers that are found to be technically acceptable will be due within 30 days after notification by the Contracting Officer. The proposals must be received prior to 3:00 PM EST time on the date specified by the Contracting Officer.

3. Method of submission: Concept papers and full proposals can be submitted electronically via email or by the regular mail (see item 5 below for the addresses). Proposals sent via email must be time stamped by the time indicated in item 2 above (Note: the email date and time becomes the official "time stamp" for electronic submissions.). Electronic files must be submitted as a MS Word document with the exception of the cover page.

4. Information for Electronic Mail (Email) Concept Papers or Proposals

a. Definition. “email concept paper or proposal,” as used in this provision, means a concept paper or proposal, revision or modification of a concept paper or proposal, or withdrawal of a concept paper or proposal that is transmitted to and received by the Government via computers utilizing electronic mail. This does not include facsimile concept papers or proposals which are prohibited for this solicitation.

b. Offerors may submit email concept papers or proposals as responses to this solicitation. Email concept papers or proposals are subject to the same rules as paper concept papers or proposals.

c. If any portion of an email concept paper or proposal received by the Contracting Officer is unreadable to the degree that conformance to the essential requirements of the solicitation cannot be ascertained from the document—

   i. The Contracting Officer immediately shall notify the offeror and permit the offeror to resubmit the proposal;

   ii. The method and time for resubmission shall be prescribed by the Contracting Officer after consultation with the offeror; and

   iii. The resubmission shall be considered as if it were received at the date and time of the original unreadable submission for the purpose of determining timeliness, provided the offeror complies with the time and format requirements for resubmission prescribed by the Contracting Officer.
5. The Government reserves the right to make award solely on the email concept paper or proposal. However, if requested to do so by the Contracting Officer, the apparently successful offeror promptly shall submit the complete original signed concept paper or proposal.

6. **Late submissions:** Any proposal, modification, or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is “late” and will not be considered unless there is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government’s control prior to the time set for receipt of offers.

7. **Address for the Submission of Concept Papers and Full Proposals:**

   Cynthia Y. Mitchell  
   Contracting Officer  
   Centers for Disease Control and Prevention  
   626 Cochrans Mill Road, Building 140  
   Pittsburgh, PA 15236-0070

   Email: cmitchell@cdc.gov  
   Phone: 412-386-6434

**V. EVALUATION INFORMATION**

**A. Evaluation Criteria**

Concept Papers and Full Proposals will be evaluated using the following criteria. Past performance for all Offers recommended for award will be reviewed—a satisfactory performance history is required for funding.

1. The proposed work directly addresses a significant health and safety issue in the industry (20%).

2. The potential reward of the proposed work outweighs potential risks (20%).

3. The proposed work represents a logical, incremental step forward towards developing a commercial product or identifying the need for specific commercial products (20%).

4. The description of the approach that will be used to address the identified issue is appropriate and adequate to complete the research. This will include the DMP as appropriate. (15%).

5. The qualifications of the project team, the Offeror's capabilities, and any proposed collaboration with the mining industry are adequate for achieving the proposed work (15%).
6. The proposed budgetary costs to complete all elements of the proposed work are realistic (10%).

Normally an entire proposed effort is funded; however, NIOSH may be interested in funding a part or parts of a proposal (including optional tasks or phases if offered). If optional tasks or phases are offered, the base proposal must be a standalone entity and any optional tasks or phases must be outside that needed to achieve the base scope of work. For this reason the government requires Offerors to write the SOW in the form of separate tasks or phases. This approach facilitates evaluation and provides an easy way to select desired tasks or phases. If NIOSH decides to fund only part or parts of a proposal, the notification letter may request the Offeror to revise the cost proposal to reflect only what will be funded.

B. Evaluation Panel

Technical and cost proposals submitted under this BAA will be protected from unauthorized disclosure in accordance with FAR 3.104-5 and 15.207. The cognizant program officer and other government scientific experts will perform the evaluation of technical proposals. Government business professionals will evaluate cost proposals. Restrictive notices notwithstanding, one or more support contractors may be utilized as subject-matter-expert technical consultants. Similarly, support contractors may be utilized to evaluate cost proposals. However, proposal selection and award decisions are solely the responsibility of government personnel. Each support contractor's employee who has access to technical and cost proposals submitted in response to this BAA will be required to sign a non-disclosure statement prior to receipt of any proposal submissions.

VI. AWARD ADMINISTRATION INFORMATION

A. Administrative Requirements

1. The North American Industry Classification System (NAICS) code - The NAICS code for this announcement is 541715 with a small business size standard of 1000 employees.

2. System for Award Management (SAM) - Successful Offerors not already registered in the SAM system will be required to register (including completion of Representations and Certifications) prior to award of any grant, contract, cooperative agreement, or other transaction agreement. Information on SAM registration is available at https://www.sam.gov/portal/SAM/#1.

B. Reporting

The following is a sample of deliverables that could be required under a typical research effort:

1. Monthly technical reports.
3. Milestone reports.
4. Draft Final and Final report (Note: Time must be included in the schedule for the Government to review the Draft Final Report, typically 30 days. Five copies of
5. All data collection and analysis protocols as applicable.

At a minimum, a final technical report is required and is to be delivered in both hard copy and electronic format. The final report must be 508 compliant. If the final report contains proprietary information, a second version of the report must be prepared and submitted that is suitable for public release.

However, please note that specific deliverables (that may include software and hardware deliverables) may be proposed by each Offeror and finalized during negotiations.

VII. OTHER INFORMATION

A. Government Property/Government Furnished Equipment (GFE) and Facilities

Each proposer must provide a very specific description of any equipment/hardware that it needs to acquire to perform the work. This description should indicate whether or not each particular piece of equipment/hardware will be included as part of a deliverable item under the resulting award. Also, this description should identify the component, nomenclature, and configuration of the equipment/hardware that it proposes to purchase for this effort. It is the government’s desire to have the contractor purchase the equipment/hardware for deliverable items under their contract. The purchase on a direct reimbursement basis of special test equipment or other equipment that is not included in a deliverable item will be evaluated for allowability on a case-by-case basis. Maximum use of government integration, test, and experiment facilities is encouraged in each of the Offeror’s proposals.

B. Government research facilities may be available and could potentially be considered government furnished equipment/facilities. These facilities and resources are of high value and some are in constant demand by multiple programs. The use of these facilities and resources will be negotiated as the program unfolds. Offerors should not assume that government-owned facilities, including the Safety Research Coal Mine, or the Experimental Mine, are available for research ideas submitted under this announcement. If these facilities are essential to the research proposal, the Offeror needs to clearly identify the reasons for using these facilities. If the facilities are not available during the proposed time frame for the research described in the Concept Paper and there are no other field site options listed, the Concept Paper will be rejected.
**Contracting Office Address:**

Centers for Disease Control and Prevention  
Office of Acquisition Services, Branch IV  
626 Cochrans Mill Road  
Pittsburgh, Pennsylvania  15236-0070

**Primary Point of Contact:**

Cynthia Y. Mitchell  
Contracting Officer  
Email: cmitchell@cdc.gov  
Phone: 412-386-6434