UNITED STATES ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES (ARI)

Foundational Science Research Unit (FSRU)

BROAD AGENCY ANNOUNCEMENT FOR

BASIC SCIENTIFIC RESEARCH

W911NF-23-S-0009
1 March 2023 – 15 July 2023

ISSUED BY:
U.S. Army Contracting Command-Aberdeen Proving Ground Research Triangle Park Division
P. O. BOX 12211
Research Triangle Park, NC 27709-2211

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I. OVERVIEW OF THE FUNDING OPPORTUNITY

A. Required Overview Content

Agency Name:

U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) Foundational Science Research Unit (FSRU)

Issuing Acquisition Office:

U.S. Army Contracting Command-Aberdeen Proving Ground, Research Triangle Park (ACC-APG-RTP) Division

Research Opportunity Title:

U.S. Army Research Institute for the Behavioral and Social Sciences Broad Agency Announcement for Basic Research (Fiscal Year 2024)

Announcement Type:

Initial Announcement

Research Opportunity Number:

W911NF-23-S-0009

Catalog of Federal Domestic Assistance (CFDA) Number and Title:

12.431 – Basic Scientific Research

Response Dates (Submissions):

White Paper submissions must be received by: **5:00 PM/1700 Eastern Daylight Time (EDT) on 31 March 2023**

Proposal submissions must be received by: **5:00 PM/1700 Eastern Daylight Time (EDT) on 15 July 2023**

2023 Response Dates (Questions):

Questions regarding White Papers must be submitted in writing to Alexander.P.Wind.civ@army.mil by: **5:00 PM/1700 Eastern Daylight Time (EDT) on 15 March 2023**

Questions regarding Proposals must be submitted in writing to Alexander.P.Wind.civ@army.mil by: **5:00 PM/1700 Eastern Daylight Time (EDT) on 1 July 2023**

A White Paper submission is not required to submit a proposal, although it is **strongly encouraged**. Awards are intended to be obligated between 1 October 2023 and 30 September 2024. Amendments to this BAA will be posted to Federal Business Opportunities (beta.SAM.gov) - FBO.gov has been moved to beta.SAM.gov and is now known as Contract Opportunities and http://www.Grants.gov when they occur. Interested parties are encouraged to periodically check these websites for updates and amendments.

(End of Section)

B. Additional Overview Information

INTRODUCTION:

This Broad Agency Announcement (BAA) for the Foundational Science Research Unit (FSRU) of the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) solicits new proposals for its fiscal year 2024 program of basic research in behavioral science. It is issued under the provisions of paragraph 6.102(d) (2) and 35.016 of the Federal Acquisition Regulation (FAR), which provides for the acquisition of basic and applied research and that part of development not related to the development of a specific system or hardware procurement through the competitive selection of proposals and 10 U.S.C. 4001, 10 U.S.C. 4021, and 10 U.S.C. 4022

Proposals submitted in response to this BAA and selected for award are considered to be the result of full and open competition and in full compliance with the provisions of Public Law 98- 369, Section 2701, "The Competition in Contracting Act of 1984" and subsequent amendments.

ARI is the Army's lead agency for the conduct of research, development, and analyses for the improvement of Army readiness and performance via research advances and applications of the behavioral and social sciences that address personnel, organization, and Soldier and leader development issues. ARI's mission is to drive scientific innovation to enable the Army to acquire, develop, employ, and retain professional Soldiers and enhance personnel readiness. **The mission of the Basic Research Program is to execute high-risk, high-reward foundational research to develop state-of-the-art theory, methods, and models to create the innovative concepts required to support the Army's future capabilities and needs related to personnel readiness.**

We strongly encourage Applicants to propose novel, state-of-the-art, and multidisciplinary approaches that address the stated primary research objectives of the topic areas. A key consideration in the decision to support a research proposal is that its findings are likely to stimulate new, basic behavioral research, which in turn, will lead to improved performance of Army personnel and their units. **ARI will not support proposals through this BAA that are primarily applied research projects (e.g., human factors studies, specific-use technology development and validation, or training program evaluations) or purely focused on physiology, psychopathology, or behavioral health.**

Collaboration is encouraged among institutions of higher education (IHE), non-profit organizations, and commercial organizations. Funding of basic research proposals within ARI areas of interest will be determined by funding constraints and priorities set during each budget cycle.

A proposal should describe its potential contribution(s) to theory along with potential benefits to the Army. Those contemplating submission of a proposal are strongly encouraged to submit a White Paper before submitting a proposal. Submission of a White Paper before a proposal allows earliest determination of the potential for funding and

minimizes the labor and cost associated with the submission of a proposal that may have minimal probability of being selected for funding. Costs associated with preparation of a White Paper or proposal submission in response to this BAA are not considered allowable direct charges to any resulting award. These costs may be allowable expenses to normal bid and proposal indirect costs specified in FAR 31.205-18. An Applicant submitting a proposal is cautioned that only a Government Contracting or Grants Officer may obligate the Government to any legal instrument involving expenditure of Government funds.

Award decisions are subject to funds availability, and ARI may choose to not execute any award under this BAA due to unavailability of funds or other factors. Due to Government budget uncertainties,

(1) No specific dollars have been reserved for total awards under this BAA, and

(2) No award floor or ceiling thresholds have been established for individual awards under this BAA.

(End of Section)

II. DETAILED INFORMATION ABOUT THE FUNDING OPPORTUNITY

A. PROGRAM DESCRIPTION

SCIENTIFIC PROBLEMS FOR BASIC RESEARCH:

To meet the operational objectives of the U.S. Army over the next two decades, the Army must improve its capability to acquire, develop, employ, and retain Soldiers and leaders who can individually and as part of a group:

- Adapt quickly to dynamic missions, unpredictable operational environments, and a wide spectrum of cultures;
- Effectively function autonomously and as part of larger systems in complex, information rich environments;
- Perform in extended, hybrid, and continuous operations;
- Interact and collaborate effectively in joint-service and multi-national operations.

ARI requests proposals to conduct basic research that will provide a scientific foundation to support these broad capabilities.

The Basic Research program employs four strategic focus areas for advancing science.

1. Science of Measurement of Individuals and Collectives: Advanced psychometric theory for deriving valid measurements from complex assessments and continuous streams of data
2. Understanding Multilevel and Organizational Dynamics: Multilevel theory and methods for understanding dynamic restructuring, coordination, and composition processes in complex organizations
3. Formal/Informal Learning and Development: Holistic models of individual and collective learning across work settings and contexts throughout the career span
4. Context of Behavior in Military Environments: Integrative theory specifying the interactive relationships between individual characteristics and contextual drivers in predicting human behavior

To be eligible for an award under this announcement, a potential awardee must meet certain minimum standards pertaining to financial resources and responsibility, ability to comply with the performance schedule, past performance, integrity, experience, technical capabilities, operational controls, and facilities. In accordance with Federal statutes, regulations, and Department of Defense and Army policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from the Army.

Types of Proposals

The funding opportunity is divided into three types of proposals for basic research: (1) Standard Basic Research proposals, (2) Targeted Opportunities which encompass: 1) Early Career Proposals (ECP) and, 2) Short-Term Innovative Research (STIR) Proposals (both of which are for basic research also). ARI will accept all three types in response to this BAA.

1. *Standard Proposals.* Most basic research awards are awarded in response to Standard Proposals provided by Applicants with experienced researchers. In recent years, the performance period of these has typically been two to three years with a mean total award of $676,151. Standard Proposals may be formulated as either a complete effort or as a base effort plus option(s) that may be exercised by ARI, if initial results are promising.

2. *Army Research Institute Targeted Opportunities*

   a. *Early Career Proposals.* To foster the development of innovative and creative researchers, ARI solicits proposals with primary investigators who are early in their research careers and have never received ARI funding as a Principal Investigator. All ARI evaluation criteria will be used to evaluate Early Career Proposals, except the criteria that address the experience of the Principal Investigator (see SECTION II. E) of this BAA for evaluation criteria). In all other respects, the evaluation criteria used in this BAA apply equally to both Standard and Early Career proposals.

To be considered for the Early Career category:

1. An Investigator must specify in the Proposal Abstract and on the proposal cover page that they are requesting consideration under this funding category.

2. Projects should be designed for one year of funding. Note that optional research (one to two additional years) may be included in the proposal and may be funded should the initial work prove promising. These years should be denoted as option years in the proposal.

3. The research must fit at least one of the stated four (4) domains of the BAA Basic Research areas of interest.

4. The Principal Investigator must have received their Ph.D. within five years of the time of proposal submission, and not previously received funding from ARI as a Principal Investigator.

While there is no specific amount of funding set aside for these proposals, initial budgets should be modest: approximately $110K for the initial year.

   b. *Short-Term Innovative Research (STIR) Proposals*. The objectives of the STIR awards are to support rapid, short-term investigations to assess the merit of innovative new concepts in basic research. STIR awards provide an excellent opportunity to showcase new concepts and explore new areas in basic research. STIR awards are aimed at shaping new directions in research and the sciences.

To be considered for a Short-Term Innovative Research Award

1. An Investigator must specify in the Proposal Abstract and on the proposal cover page that they are requesting consideration under this funding category.

2. Projects should be designed for one year of funding.

3. The research must fit at least one of the stated four (4) domains of the BAA Basic Research areas of interest.

4. Proposals in the amount of $60,000 or less are sought for STIR awards.

5. Capital equipment cannot be purchased under a STIR Program award.

6. Report preparation costs must not exceed $100.

7. A fee is not permitted under STIR Program awards as they are awarded as grants.

8. Due to the relatively small dollar amount and short-term nature of these awards, applicants are encouraged to maximize the benefit derived from this funding by prioritizing labor and employing other cost-saving measures in support of the STIR program effort.

General Guidelines for All Proposals. Both single-investigator and collaborative research efforts are encouraged. **Multidisciplinary approaches are especially encouraged** to the extent that the proposal reflects the theories, models, and approaches of multiple disciplines, combined creatively to address the research problem.

Collaborative efforts may involve researchers either at a single institution or in cooperating institutions. Highly innovative proposals addressing high-risk, high-reward topics are also strongly encouraged and should include strong methodology and other risk-mitigation strategies. Theory development and/or meta-analyses that address theoretical issues in ARI research interest domains will also be considered. The use of military participants is neither necessary nor encouraged, and ARI is unlikely to arrange access to military participants to support basic research investigations.

Basic Research Topic Areas of Interest

Basic research is efforts directed toward increasing knowledge and understanding in science and engineering, rather than the practical application of that knowledge and understanding. It typically is funded within Basic Research (Budget Activity 1 and Research Category 6.1). Basic Research is systematic study directed toward a fuller knowledge or understanding of the fundamental aspects of phenomena and or observable facts. Basic research aims for broad impact rather than to develop specific processes or produce for targeted applications. The ARI Foundational Science Research Unit (FSRU) manages the Basic Research Program and maintains close contact with ARI's applied scientists and other relevant agencies within the Army. These contacts help define issues

that require fundamental research, ensure that the basic research program is coordinated across Services (Department of Defense), and facilitate the transition of basic research results to applied programs for eventual use by the operational Army.

All proposals will be considered; however, ARI has identified the following four (4) domains as particularly germane to its basic research needs. This list is neither comprehensive nor exclusive and ARI is especially open to proposals that combine or cut across these domains. These domains are:

1. **Science of Measurement of Individuals and Collectives**

2. **Understanding Multilevel and Organizational Dynamics**

3. **Formal and Informal Learning and Development**

4. **Context of Behavior in Military Environments**

An in-depth description of each domain follows. For additional information on these domains, and potential areas of interest, Applicants may also consult the following reports by the National Research Council of the National Academy of Science (Available at http://www.nap.edu):

- "Measuring Human Capabilities: An Agenda for Basic Research on the Assessment of Individual and Group Performance Potential for Military Accession" (2015) supervised by the Board on Behavioral, Cognitive, and Sensory Sciences

- "The Context of Military Environments: Social and Organizational Factors" (2014) supervised by the Board on Behavioral, Cognitive, and Sensory Sciences

- "Sociocultural Data to Accomplish Department of Defense Missions: Toward a Unified Social Framework: Workshop Summary" (2011) supervised by the Board on Human-System Integration

Detailed descriptions of these four broad research domains are provided below. Each domain description includes: (a) a broad overview of the relevant Army problems and goal of the research domain, (b) the primary research objective, and (c) a list of sub-objectives.

1. Science of Measurement of Individuals and Collectives

The success of the U.S. Army can be largely attributed to the selection, assignment, development, and retention of highly skilled and exceptional Soldiers. To fulfill the Army People Strategy and modernization priorities for the Army and ensure continued success, the U.S. Army needs to place the right Soldier, in the right job, at the right time. To do so, the U.S. Army must continuously identify and refine the core knowledge, skills, and

behaviors (KSBs) critical to Soldier success, both across the U.S. Army as a whole and within specific military occupational specialties (MOS).

Traditional personnel tests were designed to capture broad, diffuse constructs (e.g., cognitive ability, personality, vocational aptitudes) that aggregate individual experiences over long periods of time often in mass-testing settings (e.g., annual performance, initial training, and career continuance). More recent technological advances afford observing and recording human behavior at increasingly finer-grained scales of resolution (e.g., real-time GPS coordinates, physiological sensors). Extracting meaningful psychological conclusions from such fine-grained observations has proved challenging, at least with respect to the psychometric models from which traditional personnel tests were developed.

Psychometric models and methods have advanced greatly since the advent of traditional personnel tests. Lagging, however, is adapting and refining such models and methods to better understand human behavior in organizations, particularly with respect to performance in the massively hierarchical, interdependent, and constantly fluid social situations of the environment the military operates in. Such environments are not well-represented by broad, diffuse aggregates (e.g., a single standardized test score). What are needed now, more than ever, are psychometric models and methods for quantifying meaningful patterns of human behaviors in complex social situations.

Objectives. The primary objective for the Basic Research program within the Science of Measurement of Individuals and Collectives domain is to fundamentally improve psychological testing and measurement by deriving means to assess multiple constructs and increasing overall precision, understanding, and prediction of individual and collective behavior and performance. Possible research topics aligned with this objective may include:

a. New performance theories incorporating behavioral variability across time. Of particular interest are theories incorporating complex systems principles (e.g., chaos, catastrophe, attractors) to better understand and identify meaningful behavioral patterns across multiple performance events (e.g., deployment, collective training, individual training, new assignment, change of station, occupational classification and re-classification, training recycles).

b. Novel construct validation models and methods that explicitly incorporate time. Diverse conceptualizations of time (e.g., observed, latent, discrete, continuous) are highly encouraged, as are interdisciplinary perspectives on modeling time (e.g., stationary time series, state-space models). Of particular interest are novel models and methods for integrating nomothetic and idiographic behavioral processes.

c. New work analysis models and methods. Develop novel models and methods for extracting psychologically meaningful patterns from potentially archival and high dimensional behavioral data. Develop novel models and methods for unobtrusively and efficiently observing social and behavioral processes. Such

models and methods should state explicitly how psychologically meaningful patterns will be extracted from such data.

d. Develop novel psychometric quantities beyond those of classical (e.g., reliability, validity) and modern (e.g., item and test information) test theory and demonstrate how such quantities may improve the construct validation process. Interdisciplinary views (e.g., engineering, computer science, applied statistics, operations research) are highly encouraged.

2. **Understanding Multilevel and Organizational Dynamics**

The U.S. Army is a large organization of over 400,000 active-duty members. Enlisted Soldiers and officers are organized into hierarchically nested groups, from 1,000-member corps to 3-member teams. Within this multilevel structure, Soldiers often work in teams of teams, or multiteam systems, coordinating toward a shared goal. In these groups, both informal social hierarchies and formal, rank-based hierarchies may influence group dynamics. Beyond the internal structure of the organization, Army units frequently collaborate with units from other organizations in joint service or interagency contexts. Mission success is dependent on the convergence of information and capabilities from multiple domains and organizations. Understanding how cognitive and social phenomena, such as decision-making, motivation, shared understanding, and coordination, operate at different levels and at intersections between groups is critical for the Army's operation.

The U.S. Army is a constantly changing organization. Service members' identities, characteristics, skills, and knowledge evolve as they progress through their careers. Individuals are reassigned to new teams or turnover from the organization entirely and new Soldiers enter it. Senior leadership develops and implements new strategy, and departmental regulations and policy shift. Further, the Army is not insulated from more general societal shifts and trends. These bottom-up/emergent, top-down, and external changes may flow throughout the organization at different tempos, exerting influence within and across levels. The Army's performance will depend on its ability to adapt and react, particularly within complex, changing operational environments.

Objectives. The primary objective for the Basic Research program within the Understanding Multilevel and Organizational Dynamics domain is to improve models of organizational functioning by identifying drivers of performance through a complexity-oriented perspective. Possible research topics aligned with this objective may include:

a. Factors that influence effectiveness at different or multiple levels of an organization (e.g., individual, dyad, team, team of teams, organization) and their interactions across levels.

b. Process-oriented theory and empirical investigations of the underlying mechanisms of bottom-up and top-down influences on performance.

c. Complexity-oriented and/or networks-based theory and analytics that capture the multilevel and multifactored nature of organizations, particularly those with frequent between- and within-member changes.

d. Statistical and computational models that include time and contribute to understanding of how different timescales operate at different levels of organizational functioning.

3. **Formal and Informal Learning and Development**

The U.S. Army is a learning organization but anticipated future operational environments may create challenges for traditional institutional education models. In addition, the current operational landscape has evolved to include irregular warfare, stability operations, and multi-domain operations across land, sea, air, space, and cyber fronts. There is significant pressure on the Army, its educational institutions, Soldiers, and leaders to identify and optimally utilize all available learning vehicles to prepare for, adapt to, and maintain readiness in broad range of possible environments.

Soldiers and leaders will be responsible for developing an array of skills that are broader and to higher levels of proficiency earlier in their careers than prior generations. Structures to support this charge must reflect the unique qualities of the adult learner. This will require a sustained focus on maximizing learning from formal learning environments, including individual or collective institutional training and technology-delivered training, while reducing the length of time to achieve skill mastery.

Uncertainty about future operational environments will also require all Army personnel and units to have the capacity to recognize critical areas in need of development and to learn quickly from informal learning experiences such as their battlefield experiences, mentoring/experiences of others, and via self-development. This will also require that learning and capabilities acquisition are bi-directional processes such that mechanisms support dissemination of learning gains at the individual and team levels upward and outward, a process that can be labeled as *organizational learning*.

Objectives. The primary objective for the Basic Research program within the Formal and Informal Learning and Development domain is to fundamentally understand, support, and optimize learning and development of Army personnel in various settings by driving knowledge of the adult learner. Possible research topics aligned with this objective may include:

a. Longitudinal theory and measurement approaches to understand change in an individual's knowledge/skill development, retention, and near and far transfer over time and the underlying learning processes (e.g., motivation, engagement, self-regulation, affect) within a variety of learning environments (e.g., formal training, on-the-job experiences, self-development).

b. New or refined theory concerning how the effectiveness of different learning methods may vary by the learning domain (e.g., tactical/technical, interpersonal skills, perceptual skills), level of expertise and other individual differences of the learner, as well as contextual factors external to the learner.

c. Innovative theory and learning methods that maximize collective learning processes and team learning outcomes for individual, team, and unit tasks.

d. Innovative theory and methods to tailor training to a given learner or team's needs and to reduce the length of time to achieve skill mastery

4. **Context of Behavior in Military Environments**

The Army must thrive in complex and unpredictable situations. There are known gaps in current theory to address how contextual factors, including leadership behaviors, combine to impact individual and group behavior. Understanding individual and group behavior is of critical importance to the Army.

The Army faces unknown challenges in the coming years; increased Soldier capabilities are required to be adaptive across the full range of operations (e.g., combat, stabilization missions, hybrid operations, multidomain operations) and contexts (e.g., deployment, in garrison). Current organizational theory fails to address how contextual factors, leadership behaviors, and cross-level influences in organizations combine to impact individual and group behavior. As such, research that contributes to theory specifying the interactive and complex relationships between individual characteristics, leadership, and operational contexts to predict human behavior in organizations is of interest to the Army. An enduring need of the Army is to understand how to select, develop, and retain effective leaders. Research is also needed to understand how leaders can best develop, mentor, and motivate their Soldiers in both the operational environment when deployed and at home station. This research area intends to capture the range of contextual factors that affect individual and group behavior.

Objectives. The primary objective for the Basic Research program within the Context of Behavior in Military Environments domain is to investigate the interplay among individual characteristics, leader qualities and behaviors, and multilevel contextual drivers to predict human behavior. Possible research topics aligned with this objective may include:

a. New or refined models that capture critical environmental characteristics that influence human behavior.

b. Theories that contribute to understanding of effective leadership and developing effective leaders efficiently; new measures that advance the current understanding of leadership and leader behaviors.

c. Contextual factors that drive differences in sociopsychological processes and outcomes.

d. Models that improve understanding of how individuals, teams, and organizations adapt to and coordinate with one another across different contexts (e.g., cultural, temporal, societal).

(End of Section)

B. FEDERAL AWARD INFORMATION:

The Army Contracting Command- Aberdeen Proving Ground, RTP Division has the authority to award a variety of instruments on behalf of ARI. Anticipated awards will be made in the form of procurement contracts, grants, cooperative agreements and technology investment agreements (TIAs). The ACC (APG) RTP Division reserves the right to use the type of instrument most appropriate for the effort proposed. Applicants should familiarize themselves with these instrument types and the applicable regulations before submitting a proposal. The following are brief descriptions of the possible award instruments:

1. **Procurement Contract:** A legal instrument, which consistent with 31 U.S.C. 6303, reflects a relationship between the Federal Government and a State, a local government, or other recipient when the principal purpose of the instrument is to acquire property or services for the direct benefit or use of the Federal Government.

   Procurement contracts awarded by the ACC (APG) RTP Division will contain, where appropriate, detailed special provisions concerning patent, rights in technical data and computer software, reporting requirements, equal employment opportunity, etc.. No fee or profit will be allowed on travel and equipment.

   Contracts are primarily governed by the following regulations:

   a. Federal Acquisition Regulations (FAR)
   b. Defense Federal Acquisition Regulations (DFARS)
   c. Army Federal Acquisition Regulation Supplement (AFARS)

2. **Grant:** A legal instrument, that consistent with 31 U.S.C. 6304, is used to enter into a relationship in which:

   a. The principal purpose is to transfer a thing of value to the recipient to carry out a public purpose of support or stimulation authorized by a law or the United States, rather than to acquire property or services for the Department of Defense's direct benefit or use.

   b. Substantial involvement is not expected between the Department of Defense and the recipient when carrying out the activity contemplated by the grant.

   c. No fee or profit is allowed.

3. **Cooperative Agreement:** A legal instrument which, consistent with 31 U.S.C. 6305, is used to enter into the same kind of relationship as a grant (see definition "grant"), except that substantial involvement is expected between the Department of Defense and the recipient when carrying out the activity contemplated by the cooperative agreement. The term does not include "cooperative research and development agreements" as defined in 15 U.S.C. 3710a. No fee or profit is allowed.

4. **Technology Investment Agreement (TIA):** An assistance instrument as described in 32 CFR Part 37. A TIA may be a cooperative agreement or an Other Transaction for

Research under 10 U.S.C. 4021 both with provisions tailored for involving commercial firms or research involving commercial application. To the maximum extent practicable, TIAs shall provide for a 50/50 cost share between the Government and the applicant. No fee or profit is allowed on TIAs.

5. **Other Transaction for Research.** A legal instrument, consistent with 10 U.S.C. 4021, which may be used for basic, applied, and advanced research projects. The research covered under this instrument cannot be duplicative of research being conducted under an existing DoD program. To the maximum extent practicable, OTs for research are to provide for a 50/50 cost share between the Government and the applicant. An applicant's cost share may take the form of cash, independent research and development (IR&D), foregone intellectual property rights, equipment, access to unique facilities, and/or other means. Due to the extent of cost share, and the fact that an OT for research does not qualify as a "funding agreement" as defined at 37 CFR 401.2(a), the intellectual property provisions of this instrument can be negotiated to provide expanded protection to an applicant's intellectual property. No fee or profit is allowed on OTs for research. Please refer to the Office of the Under Secretary of Defense for Acquisition and Sustainment Other Transaction Guide version 1.0 dated November 2018 for additional information. This document, along with additional other transaction agreement (OTA) resources, may be accessed at the following link: https://www.acq.osd.mil/asda/dpc/cp/policy/other-policy-areas.html

6. Grants and cooperative agreements for institutions of higher education, nonprofit organizations, foreign organizations, and foreign public entities are primarily governed by the following:

a. Federal statutes
b. Federal regulations
c. 2 CFR Part 200
d. 2 CFR 1104
e. 32 CFR Parts 21, 22, 26, and 28
f. DoD Research and Development General Terms and Conditions
g. Agency-specific Research Terms and Conditions

7. Grants and cooperative agreements for for-profit and nonprofit organizations exempted from Subpart E - Cost Principles of 2 CFR Part 200, are primarily governed by the following:

a. Federal statutes
b. Federal regulations
c. 32 CFR Part 34 - Administrative Requirements for Grants and Agreements with For-Profit Organizations
d. 32 CFR Parts 21, 22, 26, and 28
e. DoD Research and Development General Terms and Conditions
f. Agency-specific Research Terms and Conditions

8. OT for Research/ TIAs are primarily governed by the following:

a. Federal statutes
b. Federal regulations
c. 32 CFR Part 37 – Technology Investment Agreements
d. DoD Research and Development General Terms and Conditions
e. Agency-specific Research Terms and Conditions
f. Office of Secretary of Defense implementation guidance titled Other Transactions (OT) Guide for Prototype Projects (November 2018, Version 1)

9. The following websites may be accessed to obtain an electronic copy of the governing regulations and terms and conditions:

- FAR, DFARS, and AFARS: https://www.acquisition.gov
- Code of Federal Regulations (CFR): http://www.ecfr.gov
- DoD Research and Development General Terms and Conditions: https://www.onr.navy.mil/en/work-with-us/manage-your-award/manage-grant-award/grants-terms-conditions
- Agency-specific Research Terms and Conditions: https://www.arl.army.mil/resources/baa-forms/#terms-and-conditions

(End of Section)

C. ELIGIBILITY INFORMATION:

1. Eligible Applicants:

Proposals are sought from institutions of higher education, non-profit organizations, and commercial entities, domestic or foreign, for research and development (R&D) in those areas specified in SECTION II. A of this BAA. Foreign owned, controlled, or influenced organizations are advised that security restrictions may apply that could preclude their participation in these efforts. Countries included on the U.S. State Department List of Countries that Support Terrorism are excluded from participation in these efforts.

Government Laboratories, Federal Funded Research and Development Centers (FFRDCs), and U.S. Service Academies are not eligible to participate as prime Contractors or Recipients under this BAA. If a proposal selected for award includes the involvement of a Government laboratory, Federally Funded Research and Development Center, or U.S. Service Academy, award funds allocated for the involvement of Government laboratories, FFRDCs, and/or U.S. Service Academies will be directly provided from ARI to the respective Government laboratory, FFRDC or U.S. Service Academy via a Military Interdepartmental Purchase Request (MIPR). No award funds will be channeled directly from a prime awardee (e.g., Contractor or Recipient) to a Government laboratory, FFRDC, or U.S. Service Academy.

2. Cost Sharing or Matching:

Generally, there is no requirement for cost sharing, matching, or cost participation to be eligible for award under this BAA. Cost sharing and matching is not an evaluation factor used under this BAA. Exceptions may exist if the applicant is proposing the use of an OT for research or prototype as an award instrument. Cost-sharing requirements may be found at 32 CFR Part 37 and in the DoD Other Transaction Guide for Prototype Projects (https://www.dau.edu/pdfviewer/Source/Guidebooks/Other-Transactions-(OT)-Guide.pdf). Applicants are encouraged to consider cost sharing schemes in cooperation with ARI.

(End of Section)

D. APPLICATION AND SUBMISSION INFORMATION:

1. Address to View Broad Agency Announcement:

Grants.gov (www.grants.gov)
Contract Opportunities (sam.gov)

2. Content and Form of Application Submission:

Section 1 – General Information

Completeness of Information: Proposals must include all of the information specified in this BAA to prevent delays in evaluation. Be sure to specify the Commercial and Government Entity (CAGE Code), the DUNS Number, and the Taxpayer Identification Number (TIN) with your submission. Completion of the Representations and Certifications as well as registration in the System for Award Management (SAM) are prerequisites before receiving an award.

Classified Submissions: Classified proposals are not expected. However, in an unusual circumstance where an Applicant believes a proposal has the potential to be classified, contact the ARI Operations Security Officer, Ms. Pamela Butler, (703) 545-2418, pamela.l.butler8.civ@army.mil prior to the proposal submission.

Use of Color in Proposals: All proposals received will be stored as electronic images. Electronic color images require a significantly larger amount of storage space than black- and-white images. As a result, use of color in proposals should be used only when necessary to convey specific information.

Government Property/Government Furnished Equipment and Facilities: Normally, title to equipment or other tangible property purchased with Government funds vests with nonprofit institutions of higher education or with nonprofit organizations whose primary purpose is conducting scientific research if vesting will facilitate scientific research performed for the Government. For-profit organizations are expected to possess the necessary plant and equipment to conduct the proposed research. Deviations may be made on a case-by-case basis to allow for-profit organizations to purchase equipment but regulatory disposition instructions must be followed.

Post-Employment Conflict of Interest: There are certain post-employment restrictions on former Federal officers and employees, including special Government employees (Section 207 of Title 18, U.S.C.). If an Applicant believes a conflict of interest may exist, the Applicant should discuss the situation with the Army legal counsel, Mr. Brian Bentley, (571) 256-7844, brian.e.bentley2.civ@army.mil, prior to expending time and effort in preparing a proposal.

Statement of Disclosure Preference: Please complete Form 52 or 52A stating your preference for release of information contained in your proposal. Copies of these forms are available at http://www.arl.army.mil/www/default.cfm?page=218. Additionally, proposals containing data that is not to be disclosed to the public for any purpose or used by the Government except for evaluation purposes shall include the following

statement on their cover page:

> This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate this proposal. If, however, an award is made to this Applicant as a result of, or in connection with, the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting award. This restriction does not limit the Government's right to use information contained in this proposal if the information has been obtained from another source without restriction.
>
> The data subject to this restriction are contained in sheets_____.
>
> The Applicant shall also mark each sheet of data it wants to restrict with the following legend:
>
> "Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal."

Section 2 – Application Process Overview

The application process is in three stages as follows:

Stage 1- Provide a valid unique entity identifier (formerly DUNS). Please verify the accuracy of your Unique Entity Identifier (formerly DUNS) at the Dun and Bradstreet (D&B) website http://fedgov.dnb.com/webform before registering with the System for Award Management System (SAM). Prospective Applicants must be registered in SAM at https://www.sam.gov prior to submitting its application.

Stage 2 - Prospective Applicants are strongly encouraged, but not required, to submit White Papers prior to the submission of a complete proposal. The purpose of submitting a White Paper is to minimize the labor and cost associated with the production of a detailed proposal that has little chance of being selected for funding.

Stage 3 - Interested Applicants are required to submit a proposal. All proposals submitted under the terms and conditions cited in this BAA will be reviewed regardless of whether an Applicant submitted a White Paper.

Section 3 – White Paper Preparation

A White Paper should focus on describing details of the proposed research, including how it is innovative and how it could substantially advance the state of the science. Army relevance and potential impact should also be described, as well as an estimate of total cost.

White Papers should present the effort in sufficient detail to allow evaluation of the concept's technical merit and its potential contributions to the Army mission.

White Paper Format Requirements:

- Paper size: 8.5 x 11 inch paper
- Margins: 1 inch
- Spacing: Single-spaced
- Font: 12-point Times New Roman
- Number of Pages: No more than five (5) (excluding cover page and Key Personnel Biographical Information addendum – see White Paper content for details)
- All files and forms must be compiled into a single MS Word or PDF file

White Paper Content Requirements:

- Cover Page: Include all the information below

  ARI FSRU BAA W911NF-23-S-0009 White Paper
  Title
  Name/Co-PI Name(s)
  Institution
  Email Address of PI
  Telephone Number
  Research Topic Area(s) of Interest
  Proposed Cost
  Intention to seek Early Career or Short-Term Innovative Research Award

- Technical Approach: A detailed discussion of the effort's scientific research objectives, approach, level of effort, and estimated total cost; include the nature and extent of the anticipated results, and if known, the manner in which the work will contribute to the accomplishment of the ARI's mission.

- Requests for Government Support: The type of support, if any that the Applicant requests of the Government (such as facilities, equipment, demonstration sites, test ranges, software, personnel, or materials) shall be identified as Government Furnished Equipment (GFE), Government Furnished Information (GFI), Government Furnished Property (GFP), or Government Furnished Data (GFD). Applicant shall indicate any Government coordination that may be required for obtaining equipment or facilities necessary to perform any simulations or exercises that would demonstrate the proposed capability.

- Key Personnel Biographical Information: As an addendum to the White Paper, the Applicant must include a biographical sketch (up to one page per individual) of all key personnel (i.e., Principal Investigators and Co-Principal Investigators) who will perform the research, highlighting their qualifications and experience.

RESTRICTIVE MARKINGS ON WHITE PAPERS:

1. The Applicant must identify any proprietary data the Applicant intends to be used only by the Government. The Applicant must also identify any technical data or computer software contained in the White Paper that is to be treated by the Government as limited rights or restricted rights respectively. In the absence of such identification, the Government will assume to have unlimited rights to all

technical data or computer software presented in the White Paper. Records or data bearing a restrictive legend may be included in the White Paper but must be clearly marked. It is the intent of the Army to treat all White Papers as procurement sensitive information before the award and to disclose their contents only to Government employees or designated support contractors for the purpose of procurement related activities only. Classified, sensitive, or critical information on technologies should not be included in a White Paper.

2. An Applicant is cautioned that portions of a White Paper may be subject to release under terms of the Freedom of Information Act, 5 U.S.C. 552, as amended.

NOTE: White Papers which fail to follow all requirements (format and content) as stated will not be reviewed and no evaluation will be provided.

Section 4 – White Paper Submission

1. A White Paper of the proposed effort may be submitted electronically to Alexander Wind alexander.p.wind.civ@army.mil (703-851-9372) and must include the details below.

   E-mail subject line: ARI FSRU BAA W911NF-23-S-0009 White Paper

   Body of the e-mail:
   Research Topic Areas of Interest:
   Proposed Cost:
   Proposed Period of Performance:
   Early Career or Short-Term Innovative Research Award (if applicable)
   Email Address:
   Telephone Number:

2. An Applicant preparing a White Paper for submission may follow any convenient format desired as long as the submission complies with guidance above in Section 3, "White Paper Submission."

Note: Please submit White Papers no later than 5:00 PM/1700 Eastern Daylight Time (EDT) on 31 March 2023

White Papers submitted later than this date are not guaranteed a review or response.

Section 5 – White Paper Review

ARI will receive and consider all White Papers submitted by the deadline and will provide a response with either "encouraged to submit a proposal" or "not encouraged to submit a proposal".

Section 6 - Preparation of Proposals

PROPOSAL PREPARATION INSTRUCTIONS:

General Information: The proposal is the only vehicle available to the Applicant for receiving consideration for award. The proposal must stand on its own merit; only information provided in the proposal can be used in the evaluation process leading to an award. The proposal should be prepared simply and economically, providing straightforward, concise delineation of capabilities necessary to perform the proposed work. The technical volume must be accompanied by a fully supported cost volume as cost and technical considerations are reviewed simultaneously; the cost volume should assume a start date of no earlier than 6 months after proposal submission. In preparing proposals, it is important that the Applicant keep in mind the characteristics of a proposal acceptable for evaluation. A proposal must include all the information specified in this announcement in order to receive consideration. All proposals must include:

1. An Abstract, Background, Application Potential, Technical Approach, Reference List, Curriculum Vitae/Resumes of proposed researchers, and cost information, as described below.

2. Contact information such as e-mail addresses and telephone numbers for both the Principal Investigator and Institutional Representative to allow technical and contracting questions to be addressed.

3. Institutional endorsement, signature of the proposed Principal Investigator, timeframes for all phases of the project, and detailed accounts of proposed work and cost by task.

4. Provide the name, address, and phone number of Applicant's cognizant Defense Contract Audit Agency (DCAA) office, if known. All Applicants must be registered in the System for Award Management (SAM) before an award can be made. Applicants must also provide their DUNS number (Dun and Bradstreet Data Universal Numbering System).

Proposals should be very well written, and Applicant's intention should be clear to technical reviewers who, while having expertise in behavioral sciences, may lack concentrated knowledge in the proposed domain. Proposals should be sufficiently detailed to be responsive to the criteria, described below, for evaluation.

Proposal Format and Content: To ensure all proposals receive proper consideration, the Government-recommended proposal format shown below (Volume I Technical) should be followed. This format can most easily be incorporated as the proposal table of contents and serves as a final checklist as well. Proposals must address at least one of the four (4) domains for basic research cited in SECTION II. A of this BAA.

Proposal documents (excluding illustrations, tables, and required forms) must use the following page format:

- Paper size: 8.5 x 11 inch paper
- Margins: 1 inch
- Spacing: Single-spaced
- Font: 12-point Times New Roman

- Number of Pages: No more than twenty-five (25) (excluding cover page, table of contents, proposal reference list, curriculum vitae, cost information and institutional information)
- All files and forms must be compiled into a single MS Word or PDF file

NOTE: Proposals which fail to follow all requirements (format and content) as stated will not be reviewed and no evaluation will be provided.

VOLUME I – TECHNICAL

i Cover Page
ii Table of Contents
iii Abstract
1. Background
2. Application Potential
3. Technical Approach
4. Reference List
5. Curriculum Vitae/Resumes of Key Personnel

i. Cover Page: A cover page is required. Proposals will not be processed without either:

(1) A signed ARO FORM 51 cover page (required for procurement contract proposals submitted by e-mail) (see Section 6 – Submission of Proposals)

OR

(2) A SF 424 R&R Form (required for assistance agreement proposals submitted online via Grants.gov (see Section 6 – Submission of Complete Research Proposals)

Note: If an Applicant elects to submit a contract proposal via Grants.gov instead of e-mail, both the ARO FORM 51 and SF 424 R&R Form are required. Proposals for grants or cooperative agreements only require the SF 424 R&R Form.

The cover page should include the BAA number, Research Area(s) of Interest (Domains 1-4), name and telephone number for the principal points of contact (both technical and contractual), proposed project title, and any other information that identifies the proposal. The cover page should also contain the proprietary data disclosure statement, if applicable (ARO FORM 52 or 52A). The title of the proposed project should be brief, scientifically representative, intelligible to a scientifically literate reader, and suitable for use in the public domain. Should the project be carried out at a branch campus or other component of the submitting organization, that branch campus or component should be identified in the space provided (Block 11 on the ARO FORM 51 and Block 12 on the SF 424 R&R).

The proposed duration for which support is requested should be consistent with the nature and complexity of the proposed activity and associated budget. The Federal awarding agency reserves the right to make awards with shorter or longer periods of performance. Specification of a desired starting date for the project is important and helpful. However, requested effective dates cannot be guaranteed.

Pursuant to 31 U.S.C. 7701, as amended by the Debt Collection Improvement Act of 1996 [Section 31001(I)(1), Public Law 104-134] and implemented by 32 CFR 22.420(d), federal agencies shall obtain each awardees' Taxpayer Identification Number (TIN). The TIN is being obtained for purposes of collecting and reporting on any delinquent amounts that may arise out of an awardees' relationship with the Government.

Applicants must provide their organization's Unique Entity Identifier (UIE) (formerly Data Universal Number System (DUNS)). This number is a nine-digit number assigned by D&B Information Services. See Section II.D.3 of this BAA for requirements pertaining to the Unique Entity Identifier

Applicants must provide their assigned Commercial and Government Entity (CAGE) code. The CAGE code is a 5-character code assigned and maintained by the Defense Logistics Service Center (DLSC) to identify a commercial plant or establishment.

ii. Table of Contents: It is highly recommended that the Applicant follow the above table of contents (Volume I, "Technical") and use it for a final quality-control checklist.

iii. Abstract: The abstract allows the Applicant to present briefly and concisely the important aspects of its proposal. It should summarize the proposed research objectives, expectations, and the basic approaches to be used in the proposed effort. The abstract must identify implications for applied research if the project is successful. The abstract should be 250 words or less. **Abstracts longer than 250 words will not be read.**

1. Background: This section should describe the research problem, discuss relevant theory, and summarize existing research. It is important that the proposal identify specific, relevant hypotheses following discussion of theory. When integrating theories or research domains, an overarching framework supporting such integration should be described. When appropriate, a graphic depiction of the conceptual model and hypotheses may be provided.

2. Application Potential: While research funded under this BAA must be basic research (see DoD FMR 7000.14-R, Volume 2B, Chapter 5), it should be relevant to the Army mission, and ideally would be considered use-inspired basic research. The basic research proposal should describe how possible results may support research that would be meaningful to the Army. An Applicant should reference the most relevant sections of the BAA and link these sections to the proposed effort. An Applicant may incorporate a separate section titled Application Potential or Army Relevance to highlight these connections or include this information within the Background section.

3. Technical Approach: The technical approach should follow and expand upon the background section and provide a detailed description of the proposed research. This account should be much like the methods section of a research paper. The technical approach should include a description of the data to be collected, the methods for collecting the data, the number and source of participants (e.g., using power analysis) and how they will be acquired, the research design, the measures to be used, and the analysis plan. Proposals for secondary research (e.g., meta-analyses) should provide estimates of the likely number of primary studies and/or effects available in the research literature for analysis. If the intermediate or final product of research will include

training packages, simulation models, or other software-based device, the proposal should relate the product to the research hypotheses and provide sufficient detail to permit understanding and evaluation.

The technical approach should detail and set a schedule for the major tasks to be performed and products to be produced. In the case of a one-year proposal, the research plan should be divided by quarters of the year. In the case of multi-year proposals, it should be divided semi-annually or by major tasks within a year. The technical approach should specifically identify what tasks will be performed by which party and why each subcontractor, if any, was selected to perform its task(s).

4. Reference List: All cited references must be listed. Do not include publications that are not referenced. The references list must be in American Psychological Association format, APA 7th Edition.

5. Curriculum Vitae/Resumes of Key Personnel: Curriculum vitae or résumés should be included for all proposed researchers with special emphasis on the Principal Investigator, Co- Principal Investigator(s), and Consultants; documents are limited to five (5) pages per investigator to include name, brief biography, and list of recent, relevant publications.

VOLUME II – COST

The cost volume must estimate the total cost broken down by month for the duration of the basic research proposal; the cost proposal should assume a start date of no earlier than six months after proposal submission. The cost volume must also list the number of personnel hours, per year and the total amount for the life of the award, broken out by personnel type (e.g., senior scientist, full associate or assistant professor, post doc, research associate, graduate or undergraduate student, information technology personnel, administrative personnel, etc.), and the rate per hour for each such category. The cost volume must justify the need for identified personnel. The cost volume must identify and describe miscellaneous expenses. All Applicants should budget one trip by PI and key personnel for a kick-off meeting and a project close-out meeting. For multi-year efforts, one trip per year should be budgeted to present the progress of their research. Applicants who are outside the Washington, DC area should plan these trips for the ARI offices at Ft. Belvoir, VA. Applicants who are in the Washington, DC area should cost these trips using Kansas City, Missouri as the destination for cost estimation purposes.

The cost volume shall justify the need for and amount of major direct expense categories, including (but not limited to) equipment, travel, and participant recruitment costs. The cost estimate for the proposed effort should sufficiently detail elements of cost and the need for these items to allow for meaningful evaluation. The cost volume should clearly align with the planned methodology presented in the technical approach section. A cost estimate should be detailed for each task of the proposed work and should include the following:

a. A complete detail of direct labor to include, by discipline, labor hours and rates
b. Fringe benefits rate and base
c. An itemized list of equipment showing cost of each item and justification for

inclusion

d. Description and cost of expendable supplies
e. Complete detail of travel to include number of people and duration of travel, reason/need for travel, destination, airfare, per diem, rental car, etc. Note that in recent years, travel costs for one conference per year to present work from the funded research effort has been a typical request
f. Complete detail of any subcontracts to include labor categories, skill levels, and labor rates and hours
g. Other direct costs (reproduction, computer, etc.)
h. Indirect cost rates and bases with an indication whether rates are fixed or provisional and the time frame to which they are applied
i. Proposed fee, if any
j. Any documentation which supports all items above
k. Applicants should furnish the name and telephone number of their cognizant audit agency

COST PROPOSAL PREPARATION:

1. Cost Reimbursement or Fixed Price Award: Selection of the type of award (cost reimbursement or fixed price) is based upon various factors, such as (1) award instrument selected, (2) type of research to be performed, (3) the contractor's experience maintaining cost records, and (4) the ability to detail and allocate proposed costs and performance of the work. Cost type awards are most commonly used because of their suitability in supporting research and development efforts as they permit some flexibility in the redirection of efforts due to recent research experiment results or changes in Army guidance. Fixed-price type awards are used when the research project costs can be estimated accurately, the services to be rendered are reasonably definite, and the amount of property, if any, is fixed. The negotiated price is not subject to any adjustment on the basis of the Applicant's cost experience in performing the contract. An Applicant may propose either cost reimbursable or fixed price contract arrangements as well as assistance awards but the award type may vary in accordance with relevant factors as determined by the ACC (APG) RTP Division. Grants and Cooperative Agreement awards will be cost reimbursable without profit or fee.

2. Cost Proposal Content: A proposal should represent an Applicant's best response to the solicitation, including cost information. Any inconsistency, whether real or apparent, between promised performance and cost or price data must be fully explained in the proposal. Failure to explain any significant inconsistencies may demonstrate an Applicant's lack of understanding of the nature and scope of the work required. Accordingly, the cost volume must be sufficient to establish the reasonableness, realism, and completeness of the proposed cost/price. Further, any modifications made to the initial proposal resulting in a change in the cost volume must likewise be thoroughly supported in writing regardless of whether such changes are made during negotiations or at the time of a proposal revision. The estimate should be detailed for each task of the proposed work. The cost volume should be limited to the minimum number of pages necessary to satisfy the specific requirements set forth herein. Submission of volumes of computer-generated data to support the cost volume is not necessary or desired. If computer-generated data is essential to support the cost volume, it may be submitted as an addendum and must be clearly cross-referenced to the material it supports in the cost volume.

Each proposal must contain a budget for each year of support requested and a cumulative budget for the full term of requested support. The ARO budget form (ARO FORM 99) may be reproduced as needed. Locally produced versions may be used, but you may not make substitutions in prescribed budget categories nor alter or rearrange the cost categories as they appear on the form. The proposal may list funds under any of the categories listed so long as the item is considered necessary to perform the proposed work and is not precluded by applicable cost principles. In addition to the forms, the budget should include no more than five (5) pages of budget justification narrative for each year.

A signed summary budget page must be included. The documentation pages should be titled "Budget Explanation Page" and numbered chronologically starting with the budget form. The need for each cost element should be explained clearly.

All cost data must be current and complete. Costs proposed must conform to the following principles and procedures.

Before award it must be established that an approved accounting system and financial management system exist for an Applicant.

The following specific information is required:

1. Summary by cost element and profit or fee for total proposal **(Note: Profit/Fee is not allowed for grants, cooperative agreements, or technology investment agreements for the prime recipient of the award or any sub-recipients)**
2. Labor summary for total proposal by labor categories, proposed hours per labor category, and hourly rates per labor category
3. Explanation of how labor rates are computed including base rates (actuals), fringe, and escalation, if any
4. Interdivisional transfers (detailed breakout of costs), if applicable
5. Identification of indirect rates by fiscal year and explanation of how established and base to which they apply
6. Bill of materials detailing items by type, quantity, unit price, total amount, and source of estimate (provide vendor written quotes)
7. Summary of all travel by destination, purpose, number of people and days, air fare, per diem, car rental, etc.
8. Consultant(s) by name, hourly rate, and number of hours (furnish copy of consulting agreement and identify prior agreement(s) under which the consultant commanded proposed rate)
9. Computer use by type, rate, and quantity
10. Other direct costs by type, amount, cost per unit, and purpose (specifically identify any costs for printing or publication)
11. DD Form 1861 (if proposing facilities capital cost of money)
12. Forecast of monthly and cumulative dollar commitments for the proposed performance period
13. Subcontractor's proposal, with prime Applicant’s price/cost analysis of subcontractor's proposal (if subcontract was not competed, include justification)

Sub-awardee Cost Proposals: Sub-awardees' cost proposals must be similarly structured.

All subcontracted work must be properly identified as such. If a subcontractor elects to submit an abbreviated proposal to an Applicant, it is Applicant's responsibility to see that the subcontractor simultaneously submits a complete detailed proposal properly identified directly to the Government Contracting or Grants Officer. An Applicant's proposal must:

1. Identify principal items/services to be subcontracted
2. Identify prospective subcontractors and the basis on which they were selected (if non- competitive, provide selected source justification)
3. Identify the type of contractual arrangement contemplated for each subcontract and the rationale for the same
4. Identify the cost or pricing data or information other than cost or pricing data submitted by each subcontractor
5. Provide an analysis concerning the reasonableness, realism, and completeness of each subcontractor's proposal; if the analysis is based on a comparison with prior research efforts, identify the basis on which the prior costs or prices were determined to be reasonable

Section 7. Conference and Symposia Grants

A. Introduction. The Army supports conferences and symposia (as defined in the DoD Travel Regulations) in areas of science that bring experts together to discuss recent research or educational findings or to expose other researchers or advanced graduate students to new research and educational techniques. The Army encourages the convening in the United States of major international conferences, symposia, and assemblies of international alliances.

B. Eligibility. Notwithstanding the Army's authority to provide grant support for such events, only non-commercial scientific, technical, or professional organizations that qualify for tax exemption may receive a conference grant/symposia grant. Those who meet this requirement should also be aware that the DoD does not permit "co-sponsorship" (as defined in DoD 5500.07-R) absent additional high-level staffing and approval. In other words, the conference grant support identified in this BAA is NOT DoD sponsorship or co-sponsorship since ARI is neither an organizer, nor provider, of any substantial logistical support for the conferences addressed in this section.

C. Conference Support. Conference support proposals should be submitted a minimum of six (6) months prior to the date of the conference. It is anticipated that support for conferences and symposia may take multiple forms including financial support for the meeting, travel support for speakers, or travel support to allow attendance and participation by advanced graduate students and junior faculty.

D. Technical Proposal Preparation. The technical portion of a proposal for support of a conference or symposium should include:

A one page or less summary indicating the objectives of the project,

(1) The topics to be covered,
(2) The location, probable date(s), and why the conference is considered appropriate at the time specified,

(3) An explanation of how the conference and requested support will relate to the research interests of the Army as identified in Section A of this BAA and how it will contribute to the enhancement and improvement of scientific, engineering, and/or education in general and activities as outlined earlier in the research areas of this BAA,
(4) The name of chairperson(s)/PI(s) and their biographical information,
(5) If applicable, a list of proposed participants,
(6) The methods of announcement or invitation,
(7) A summary of how the results of the meeting will be disseminated, and
(8) A signed cover page.

E. Cost Proposal Preparation. The cost portion of the proposal should show:

(1) Total project conference costs by major cost elements,
(2) Anticipated sources of conference income and amount from each,
(3) Anticipated use of funds requested, and
(4) A signed budget.

F. Support for Federal Employee Attendance. Funds provided cannot be used for payment to any federal government employee for support, subsistence, or services in connection with the proposed conference or symposium.

F. Cognizant POC. It is highly recommended that potential applicants contact the appropriate POC identified earlier in the research areas of this BAA for advice and assistance before preparation of a conference/symposia proposal.

Section 8 – Submission of Proposals

Proposals must be submitted through the Applicant's organizational office having responsibility for Government business relations. The proposal must contain the signature of an authorized official. All signatures must be that of an official(s) authorized to commit the organization in business and financial affairs. The cover of the proposal should be marked with the BAA Solicitation Number W911NF-23-S-0009 along with the name of the basic research scientific area of interest(s) (see Section II. A of this BAA). Applicants are requested to provide their e-mail addresses upon submission of a proposal and also the name, address, and telephone number of their cognizant Defense Contract Audit Agency (DCAA) office, if known.

Proposals must be submitted electronically via e-mail or Grants.gov. The proposal format and content will remain the same whether using e-mail or Grants.gov.

Proposals for contracts may be submitted via e-mail or online via Grants.gov. Proposals for Grants or cooperative agreements (assistance) MUST be submitted online via Grants.gov. Further, a copy of any proposal submitted must also be furnished to: Alexander.P.Wind.civ@army.mil

CONTRACT PROPOSAL SUBMISSION:

a. Proposals for contracts may be e-mailed directly to

usarmy.rtp.devcom-arl.mbx.baa@army.mil or submitted online via Grants.gov, http://Grants.gov. Please also send a courtesy copy of the proposal to Alexander.P.Wind.civ@army.mil.

b. Proposals for contracts (only) may be e-mailed directly to

usarmy.rtp.devcom-arl.mbx.baa@army.mil. Please e-mail a courtesy copy of proposals to Alexander.P.Wind.civ@army.mil. **All submissions must include "ARI FSRU BAA W911NF-23-S-0009" in the subject line.**

All e-mailed proposals must contain the information outlined in Section II, D, 2 (Section 5- Preparation of Proposals) including the electronic forms as follows:

(1) ARO Form 51, Proposal Cover Page; (2) ARO Form 52 or ARO Form 52a Disclosure Statement Form; (3) ARO Form 99 Summary Proposal Budget Form(s); (4) ARO Current and Pending Support (unnumbered form). These forms may be accessed at http://www.arl.army.mil/www/default.cfm?page=218.

c. All forms requiring signature must be completed, printed, signed, and scanned into a PDF document. All documents must be combined into a single PDF formatted file to be attached to the e-mail.

d. Proposals are to be provided in electronic MS Word or Adobe PDF format. The proposal must include the complete technical and cost volumes of the proposal. Electronic versions of the technical and cost volumes must be combined into one electronic file. The proposal must include the signature of the authorized institutional representative. If the electronic version does not include a signature from the appropriate representative of the Applicant, the Government Procurement Contracting Officer must be provided a signed and dated copy prior to award if selected.

GRANT AND COOPERATIVE AGREEMENT PROPOSAL SUBMISSION:

(1) Proposals requesting Assistance agreements must be submitted via Grants.gov; proposals requesting a Contract or OT may be submitted either via Grants.gov or email (instructions above).

(2) Grants.gov Registration must be accomplished prior to application submission in Grants.gov.

Each organization that desires to submit applications via Grants.Gov must complete a one-time registration. There are several one-time actions your organization must complete in order to submit applications through Grants.gov (e.g., obtain a Unique Entity Identifier, register with the SAM, register with the credential provider, register with Grants.gov and obtain approval for an authorized organization representative (AOR) to submit applications on behalf of the organization). To register please see http://www.grants.gov/web/grants/applicants/organization-registration.html

Please note the registration process for an Organization or an Individual can take

between three to five business days or as long as four weeks if all steps are not completed in a timely manner.

Questions relating to the registration process, system requirements, how an application form works, or the submittal process should be directed to Grants.gov at 1-800-518-4726 or support@grants.gov.

NOTE: All web links referenced in this section are subject to change by Grants.gov and may not be updated here.

(3) Specific forms are required for submission of a proposal. The forms are contained in the Application Package available at http://www.grants.gov **under the specific opportunity you are submitting under**. When viewing an opportunity, select the "Package" tab and then select "View." A Grant Application Package and Application Instructions are available for this BAA through the Grants.gov Apply portal under CFDA Number 12.431/Funding Opportunity Number W911NF-23-S-0009. To apply, select "Apply" and then "Apply Now Using Workspace."

*NOTE: Effective 31 December 2017, applicants must apply online at Grants.gov using the application Workspace. For access to complete instructions on how to apply for opportunities using Workspace refer to https://www.grants.gov/web/grants/applicants/workspace-overview.html.

The following documents are mandatory: (1) Application for Federal Assistance (R&R) (SF 424 (R&R)), and (4) Attachments form.

(4) The SF 424 (R&R) form is to be used as the cover page for all proposals submitted via Grants.gov. The SF 424 (R&R) must be fully completed. AOR usernames and passwords serve as "electronic signatures" when your organization submits applications through Grants.gov. By using the SF 424 (R&R), proposers are providing the certification required by 32 CFR Part 28 regarding lobbying (see Section II.F.2.a.ii of this BAA). Block 11, "Descriptive Title of Applicant's Project," must reference the research topic area being addressed in the effort by identifying the specific paragraph from Section II.A of this BAA.

(5) The Attachments form must contain the documents outlined in Section II.D.2.e.ii entitled "Table of Contents". All documents must be combined into separate and single PDF formatted files using the Table of Contents names. Include "W911NF-23-S-0009in the title so the proposal will be distinguished from other BAA submissions and upload each document to the mandatory Attachments form.

(6) The applicant must include with its proposal submission the representations required by Section II.F.2.a.ii of this BAA. The representations must include applicant POC information and be signed by an authorized representative. Attach the representations document to an available field within the Attachments form. Note: If the applicant's online SAM Representations and Certifications include its response to the representations, a hard copy representation is not required with proposal submission.

(7) The Grants.gov User Guide at: https://www.grants.gov/help/html/help/index.htm#t=GetStarted%2FGetStarted.htm will assist AORs in the application process. Remember that you must open and complete the Application for Federal Assistance (R&R) (SF 424 (R&R)) first, as this form will automatically populate data fields in other forms. If you encounter any problems, contact customer support at 1-800-518-4726 or at support@grants.gov. If you forget your user name or password, follow the instructions provided in the Credential Provider tutorial. Tutorials may be printed by right-clicking on the tutorial and selecting "Print".

(8) As it is possible for Grants.gov to reject the proposal during this process, it is strongly recommended that proposals be uploaded at least two days before any established deadline in the BAA so that they will not be received late and be ineligible for award consideration. It is also recommended to start uploading proposals at least two days before the deadline to plan ahead for any potential technical and/or input problems involving the applicant's own equipment.

3. Unique Entity Identifier and System for Award Management (SAM):

Each applicant (unless the applicant is an individual or Federal agency that is exempt from those requirements under 2 CFR 25.110(b) or (c), or has an exception approved by the agency under 2 CFR 25.110(d)) is required to: (i) Be registered in the System for Award Management (SAM) https://www.sam.gov prior to submitting its application; (ii) provide a valid DUNS number in its application; and (iii) continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by an agency. An award will not be made to an applicant until the applicant has complied with all applicable DUNS (call 1-866-705-5711 toll free or visit http://fedgov.dnb.com/webform) and SAM requirements.

4. Submission Dates and Times:

White Paper submissions must be received by: **5:00 PM/1700 Eastern Daylight Time (EDT) on 31 March 2023**

Proposal submissions must be received by: **5:00 PM/1700 Eastern Daylight Time (EDT) on 15 July 2023**

Response Dates (Questions):

Questions regarding White Papers must be submitted in writing to Alexander.P.Wind.civ@army.mil by: **5:00 PM/1700 Eastern Daylight Time (EDT) on 15 March 2023**

Questions regarding Proposals must be submitted in writing to Alexander.P.Wind.civ@army.mil by: **5:00 PM/1700 Eastern Daylight Time (EDT) on 1 July 2023**

It is the Applicant's responsibility to assure that a White Paper or proposal submission

is received by the respective date and time specified above. If your White Paper or proposal submission is not received at the initial point of entry to the Government (received through web-based system, e-mail or post-marked if applicable) by the exact date and time specified above, it will be determined late and will not be evaluated. The submission of a courtesy copy of a proposal sent to alexander.p.wind.civ@army.mil does not fulfill the timeliness requirement.

Grants.gov: After a proposal is submitted to Grants.gov, the AOR will receive a series of three emails from Grants.gov. The first two emails will be received within 24 to 48 hours after submission. The first email will confirm time of receipt of the proposal by the Grants.gov system and the second will indicate that the proposal has either been successfully validated by the system prior to transmission to the grantor agency or has been rejected due to errors. A third email will be received once the grantor agency has confirmed receipt of the proposal. Reference the Grants.gov User Guide at https://www.grants.gov/help/html/help/index.htm#t=GetStarted%2FGetStarted.htm for information on how to track your application package.

For the purposes of this BAA, an applicant's proposal is not considered received by ARI until the AOR receives email #3.

5. Intergovernmental Review:

Not Applicable

6. Funding Restrictions:

There are no funding restrictions associated with this BAA.

7. Other Submission Requirements:

Information to be Requested from Successful Applicants: Applicants whose proposals are accepted for funding will be contacted before award to provide additional information required for award. The required information is normally limited to clarifying budget explanations, representations, certifications, and some technical aspects.

For Contracts Only- Performance Work Statements (PWS): Prior to award, the Contracting Officer may request that the contractor submit a PWS for the effort to be performed, which will be incorporated into the contract at the time of award.

(End of Section)

E. APPLICATION REVIEW INFORMATION:

1. Criteria: Proposals will initially be evaluated as to whether they constitute basic or applied research. Proposals deemed applied research will not be considered further.

Basic research is efforts directed toward increasing knowledge and understanding in science and engineering, rather than the practical application of that knowledge and understanding. It typically is funded within Basic Research (Budget Activity 1 and Research Category 6.1). Basic research is systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific application of processes or products in mind, whereas applied research provides a systematic expansion and application of knowledge to design and develop useful strategies, techniques, methods, tests, technologies, or measures that provide the means to meet a recognized and specific Army need.

Proposals for basic research received in response to this BAA will be evaluated by scientific peers internal and external to the Army using the factors/criteria listed below. ARI may solicit input on technical aspects of proposals from non-Government consultants/experts who are strictly bound by non-disclosure requirements.

Factor/criterion (a) is most important; the other factors/criteria are of equal importance to one another. All evaluation factors/criteria other than cost, when combined, are significantly more important than cost or price. Proposals with severe deficiency on any factor will not be considered for funding. The evaluation factors are:

a. Scientific and Technical Merit. Addresses technical soundness of the proposed work and the quality of the science. While the Basic Research Program seeks cutting-edge research, there will be an evaluation of risk-mitigation strategies and support from the extant scientific literature for proposed methods, particularly for approaches that deviate from other work in the area. Enough detail must be provided for accurate evaluation, particularly for the earliest one to two years of a multi-year award.

b. **Impact.** Addresses the potential scientific significance and impact on ARI's Basic Research program's mission and stated research interests as well as to current and projected Army needs. Evaluation will consider the potential for leap ahead gains. Evaluation will look for explicit connection to the section, "Basic Research Topic Areas of Interest," in this document. Of highest import is connection and contribution to the stated primary objectives.

c. **Qualifications.** Addresses the qualifications, capabilities, and experience of the proposed research team of principal investigator and key personnel. Lower levels PI experience will not negatively affect Early Career proposals. Evaluation will also consider institutional resources and potential to support award administration and proposed work.

d. **Cost.** Addresses the level of support requested. Will be considered for realism, affordability, and appropriateness, and may be grounds for rejection independent of evaluation on other factors.

Review and Selection Process:

a. All Proposals are treated as privileged information prior to award and the contents are disclosed to Government employees or designated support contractors only for the purpose of evaluation. The Applicant must indicate on the appropriate proposal form (ARO Form 52 or 52A) any limitation to be placed on disclosure of information contained in the proposal to non-Government evaluators.

b. Each proposal will be evaluated based on the evaluation criteria in Section II.E.1 of this BAA rather than against other proposals for research in the same general area. Each evaluated proposal will receive a recommendation of "select" or "do not select" as supported by the evaluation.

2. Recipient Qualification

a. Grant, Cooperative Agreement, and OT Proposals:

i. The Grants Officer is responsible for determining a recipient's qualification prior to award. In general, a Grants Officer will award grants or cooperative agreements only to qualified recipients that meet the standards at 32 CFR 22.415. To be qualified, a potential recipient must:

(1) Have the management capability and adequate financial and technical resources, given those that would be made available through the grant or cooperative agreement, to execute the program of activities envisioned under the grant or cooperative agreement;

(2) Have a satisfactory record of executing such programs or activities (if a prior recipient of an award);

(3) Have a satisfactory record of integrity and business ethics; and

(4) Be otherwise qualified and eligible to receive a grant or cooperative agreement under applicable laws and regulations.
Applicants are requested to provide information with proposal submissions to assist the Grants Officer's evaluation of recipient qualification.

ii. In accordance with Office of Management and Budget (OMB) guidance in parts 180 and 200 of Title 2, CFR, it is DoD policy that DoD Components must report and use integrity and performance information in the Federal Awardee Performance and Integrity Information System (FAPIIS), or any successor system designated by OMB, concerning grants, cooperative agreements, and OTs for research as follows:
If the total Federal share will be greater than the simplified acquisition threshold on any Federal award under a notice of funding opportunity (see 2 CFR 200.88 Simplified

Acquisition Threshold):
(1) The Federal awarding agency, prior to making a Federal award with a total amount of Federal share greater than the simplified acquisition threshold, will review and consider any information about the applicant that is in the designated integrity and performance system accessible through SAM (currently FAPIIS) (see 41 U.S.C. 2313);
(2) An applicant, at its option, may review information in the designated integrity and performance systems accessible through SAM and comment on any information about itself that a Federal awarding agency previously entered and is currently in the designated integrity and performance system accessible through SAM;
(3) The Federal awarding agency will consider any comments by the applicant, in addition to the other information in the designated integrity and performance system, in making a judgment about the applicant's integrity, business ethics, and record of performance under Federal awards when completing the review of risk posed by applicants as described in 2 CFR 200.205 Federal awarding agency review of risk posed by applicants.

b. Contract Proposals:

i. Contracts shall be awarded to responsible prospective contractors only. See FAR 9.104-1 for a listing of the general standards against which an applicant will be assessed to determine responsibility.

Applicants are requested to provide information with proposal submission to assist the Contracting Officer’s evaluation of responsibility.

ii. FAPIIS will be checked prior to making an award. The web address is: https://cpars.gov. The applicant representing the entity may comment in this system on any information about the entity that a federal government official entered. The information in FAPIIS will be used in making a judgment about the entity’s integrity, business ethics, and record of performance under Federal awards that may affect the official’s determination that the applicant is qualified to receive an award.

(End of Section)

F. AWARD ADMINISTRATION INFORMATION:

1. Award Notices

Applicants whose proposals are recommended for award may be contacted by a Contract/Grant Specialist to discuss additional information required for award. This may include representations and certifications, revised budgets or budget explanations, certificate of current cost or pricing data, subcontracting plan for small businesses, and/or other information as applicable to the proposed award. The anticipated start date will be determined at that time.

The notification email is not an authorization to commit or expend funds. The Government is not obligated to provide any funding until a Government Contracting/ Grants Officer signs the award document.

The award document signed by the Government Contracting/Grants Officer is the official and authorizing award instrument. The authorizing award instrument, signed by the Contracting/ Grants Officer, will be emailed to the PI and AOR.

2. Administrative and National Policy Requirements

a. Required Representations and Certifications:

i. Contract Proposals:

(1) Representations and certifications shall be completed by successful applicants prior to award. FAR Online Representations and Certifications are to be completed through SAM at https://www.sam.gov. As appropriate, DFARS and contract-specific certification packages will be provided to the contractor for completion prior to award.

(2) FAR 52.203-18, PROHIBITION ON CONTRACTING WITH ENTITIES THAT REQUIRE CERTAIN CONFIDENTIALITY AGREEMENTS OR STATEMENTS—REPRESENTATION (JAN 2017)

(a) Definition. As used in this provision--

"Internal confidentiality agreement or statement", "subcontract", and "subcontractor", are defined in the clause at 52.203-19, Prohibition on Requiring Certain Internal Confidentiality Agreements or Statements.

(b) In accordance with section 743 of Division E, Title VII, of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L. 113-235) and its successor provisions in subsequent appropriations acts (and as extended in continuing resolutions), Government agencies are not permitted to use funds appropriated (or otherwise made available) for contracts with an entity that requires employees or subcontractors of such entity seeking to report waste, fraud, or abuse to sign internal confidentiality agreements

or statements prohibiting or otherwise restricting such employees or subcontractors from lawfully reporting such waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information.

(c) The prohibition in paragraph (b) of this provision does not contravene requirements applicable to SF 312, (Classified Information Nondisclosure Agreement), Form 4414 (Sensitive Compartmented Information Nondisclosure Agreement), or any other form issued by a Federal department or agency governing the nondisclosure of classified information.

(d) Representation. By submission of its offer, the applicant represents that it will not require its employees or subcontractors to sign or comply with internal confidentiality agreements or statements prohibiting or otherwise restricting such employees or subcontractors from lawfully reporting waste, fraud, or abuse related to the performance of a Government contract to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information (e.g., agency Office of the Inspector General).

(3) FAR 52.204-26, COVERED TELECOMMUNICATIONS EQUIPMENT OR SERVICES-REPRESENTATION (OCT 2020)

a) Definitions. As used in this provision, "covered telecommunications equipment or services" and "reasonable inquiry" have the meaning provided in the clause 52.204-25, Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

(b) Procedures. The Offeror shall review the list of excluded parties in the System for Award Management (SAM) (https://www.sam.gov) for entities excluded from receiving federal awards for "covered telecommunications equipment or services".

(c)(1) Representation. The Offeror represents that it [ ] does, [ ] does not provide covered telecommunications equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument.

(2) After conducting a reasonable inquiry for purposes of this representation, the offeror represents that it [ ] does, [ ] does not use covered telecommunications equipment or services, or any equipment, system, or service that uses covered telecommunications equipment or services.

(4) FAR 52.209-11, REPRESENTATION BY CORPORATIONS REGARDING DELINQUENT TAX LIABILITY OR A FELONY CONVICTION UNDER FEDERAL LAW (FEB 2016)

(a) As required by sections 744 and 745 of Division E of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L 113-235), and similar provisions, if contained in subsequent appropriations acts, the Government will not enter into a

contract with any corporation that--

(1) Has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability, where the awarding agency is aware of the unpaid tax liability, unless an agency has considered suspension or debarment of the corporation and made a determination that suspension or debarment is not necessary to protect the interests of the Government; or

(2) Was convicted of a felony criminal violation under any Federal law within the preceding 24 months, where the awarding agency is aware of the conviction, unless an agency has considered suspension or debarment of the corporation and made a determination that this action is not necessary to protect the interests of the Government.

(b) The applicant Offeror that—

(1) It is [ ] is not [ ] a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability; and

(2) It is [ ] is not [ ] a corporation that was convicted of a felony criminal violation under a Federal law within the preceding 24 months.

ii. Grant and Cooperative Agreement Proposals:

(1) Grant awards greater than $100,000 require a certification of compliance with a national policy mandate concerning lobbying. Statutes and Government-wide regulations require the certification to be submitted prior to award. When submitting your grant through Grants.gov, by completing blocks 18 and 19 of the SF 424 (R&R) Form, the grant applicant is providing the certification on lobbying required by 32 CFR Part 28; otherwise, a copy signed by the AOR must be provided. Below is the required certification:

CERTIFICATION AT APPENDIX A TO 32 CFR PART 28 REGARDING LOBBYING: Certification for Contracts, Grants, Loans, and Cooperative Agreements the undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any

Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit SF-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

(2) In accordance with Section 743 of P.L. 113-235 , none of the funds appropriated or otherwise made available by that or any other Act may be made available for a grant or cooperative agreement with an entity that requires its employees or contractors seeking to report fraud, waste, or abuse to sign internal confidentiality agreements or statements prohibiting or otherwise restricting those employees or contractors from lawfully reporting that waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive the information.

PROHIBITION ON CONTRACTING WITH ENTITIES THAT REQUIRED CERTAIN INTERNAL CONFIDENTIALITY AGREEMENTS – REPRESENTATION

Agreement with the representation below will be affirmed by checking the "I agree" box in block 17 of the SF424 (R&R) as part of the electronic proposal submitted via Grants.gov. The representation reads as follows:

By submission of its proposal or application, the applicant represents that it does not require any of its employees, contractors, or subrecipients seeking to report fraud, waste, or abuse to sign or comply with internal confidentiality agreements or statements prohibiting or otherwise restricting those employees, contractors, subrecipients from lawfully reporting that waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information.

*Note that: Section 743 states that it does not contravene requirements applicable

to SF 312, Form 4414, or any other form issued by a Federal department or agency governing the nondisclosure of classified information.

(3) Recipients are required to submit the following representation with the application package IAW the instructions at Section II.D.2.f.ii of this BAA:

REPRESENTATIONS UNDER DOD ASSISTANCE AGREEMENTS:

APPROPRIATIONS PROVISIONS ON TAX DELINQUENCY AND FELONY CONVICTIONS

The applicant is [ ] is not [ ] a "Corporation" meaning any entity, including any institution of higher education, other nonprofit organization, or for-profit entity that has filed articles of incorporation.

If the applicant is a "Corporation" please complete the following representations:

(a) The applicant represents that it is [ ] is not [ ] a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

(b) The applicant represents that it is [ ] is not [ ] a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

NOTE: If an applicant responds in the affirmative to either of the above representations, the applicant is ineligible to receive an award unless the agency suspension and debarment official (SDO) has considered suspension or debarment and determined that further action is not required to protect the Government's interests. The applicant therefore should provide information about its tax liability or conviction to the agency's SDO as soon as it can do so, to facilitate completion of the required considerations before award decisions are made.

PROHIBITION ON CONTRACTING WITH ENTITIES USING CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT

Section 889 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2019 (Public Law 115-232) prohibits the head of an executive agency from obligating or expending loan or grant funds to procure or obtain, extend, or renew a contract to procure or obtain, or enter into a contract (or extend or 105 renew a contract) to procure or obtain the equipment, services, or systems prohibited systems as identified in section 889 of the NDAA for FY 2019. For more information on how this applies to all grant recipients and sub-recipients after August 13, 2020, please see DoD Research General Terms and Conditions (SEP

2021) NP Article IV. Other national policy requirements, paragraph 18.

b. Policy Requirements:

The following list provides notable national policy requirements that may be applicable to an award. NOTE: The following is not an all-inclusive list of policy requirements. For assistance awards, refer to the DoD Research and Development General Terms and Conditions at https://www.onr.navy.mil/en/work-with-us/manage-your-award/manage-grant-award/grants-terms-conditions for additional national policy requirements that may apply. For contract awards, appropriate clauses will be added to award documents.

i. PROTECTION OF HUMAN SUBJECTS

(1) For Assistance Instruments:

(a) The recipient must protect the rights and welfare of individuals who participate as human subjects in research under this award and comply fully with the requirements at 32 CFR part 219, Department of Defense Instruction (DoDI) 3216.02, 10 U.S.C. 980, the National Policy Requirements Concerning Live Organisms Terms and Conditions (Section A.1., Human Subjects, at 81 Federal Register 78380, Appendix C to Part 1122), and when applicable, Food and Drug Administration (FDA) policies and regulations.

(b) The recipient must not begin performance of research involving human subjects, also known as human subjects research (HSR), that is covered under 32 CFR part 219, or that meets exemption criteria under 32 CFR 219.104(d), or expend funding on such effort, until the recipient receives a formal notification of approval from the cognizant DoD Human Research Protection Official (HRPO). Approval to perform HSR under this award is received after the HRPO has performed a review of the recipient's documentation of planned HSR activities and has officially furnished a concurrence with the recipient's determination as presented in the documentation.

(c) In order for the HRPO to accomplish this concurrence review, the recipient must provide sufficient documentation to enable his or her assessment as follows:

(i) If the HSR meets one or more exemption criteria under 32 CFR 219.104(d), the documentation must include a citation of the exemption category/ies under 32 CFR 219.104(d) and a rationale statement.

(ii) If the recipient's activity is determined as "non-exempt research involving human subjects," the documentation must include:

- Documentation of Assurance of Compliance (a written assurance that an institution will comply with requirements of 32 CFR Part 219, as well as the terms of the assurance) appropriate for the scope of work or program plan; and

- Institutional Review Board (IRB) approval, as well as all documentation reviewed by the IRB to make their determination.

(d) The HRPO retains final judgment on what activities constitute HSR, whether an exempt category applies, whether the risk determination is appropriate, and whether the planned HSR activities comply with the requirements in paragraph (a) of this section.

(e) The recipient must notify the Grants Officer/Agreements Officer immediately of any suspensions or terminations of the Assurance of Compliance.

(f) DoD staff, consultants, and advisory groups may independently review and inspect the recipient's research and research procedures involving human subjects and, based on such findings, DoD may prohibit research that presents unacceptable hazards or otherwise fails to comply with DoD requirements.

(g) Definitions for terms used in this section are found in DoDI 3216.02.

The Army Research Institute HRPO is:

Dr. Erica Michael, Senior Research Psychologist
U.S. Army Research Institute 6000 6th Street
Fort Belvoir, VA 22060-5586
(703) 545-9590, erica.b.michael.civ@army.mil

(2) For Contracts: DFARS clause 252.235-7004 is applicable to this solicitation and will be included in its entirety in any resultant contract award that supports research that includes or may include HSR.

ii. ANIMAL USE:

(1) Assistance Instruments:

(a) Prior to initiating any animal work under the award, the recipient must:

(i) Register the recipient's research, development, test, and evaluation or training facility with the Secretary of Agriculture in accordance with 7 U.S.C. 2136 and 9 CFR section 2.30, unless otherwise exempt from this requirement by meeting the conditions in 7 U.S.C. 2136 and 9 CFR parts 1-4 for the duration of the activity.

(ii) Have the recipient's proposed animal use approved in accordance with DoDI 3216.01, Use of Animals in DoD Programs by a DoD Component Headquarters Oversight Office.

(iii) Furnish evidence of such registration and approval to the grants officer.

(b) The recipient must make the animals on which the research is being conducted, and all premises, facilities, vehicles, equipment, and records that support animal care and use available during business hours and at other times mutually agreeable to the recipient, the United States Department of Agriculture Office of Animal and Plant Health Inspection

Service (USDA/APHIS) representative, personnel representing the DoD component oversight offices, as well as the grants officer, to ascertain that the recipient is compliant with 7 U.S.C. 2131 et seq., 9 CFR parts 1-4, and DoDI 3216.01.

(c) The recipient's care and use of animals must conform with the pertinent laws of the United States, regulations of the Department of Agriculture, and regulations, policies, and procedures of the DoD (see 7 U.S.C. 2131 et seq., 9 CFR parts 1-4, and DoDI 3216.01).

(d) The recipient must acquire animals in accordance with DoDI 3216.01.

(2) Contracts: The appropriate clauses shall be added to the award.

iii. BIOLOGICAL SAFETY PROGRAM REQUIREMENTS:

(1) Assistance Instruments and Contracts: Awards may be subject to biological safety program requirements IAW:

(a) Army Regulation (AR) 385-10, Chapter 20
https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN16777_ARN16343_AR385_10_FINAL.pdf

(b) Department of Army (DA) Pamphlet (PAM) 385-69 on safety standards for microbiological and biomedical laboratories. This pamphlet requires the mandatory use of the latest edition of the U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC) and National Institutes of Health's (NIH) Biosafety in Microbiological and Biomedical Laboratories (BMBL)
https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/p385_69.pdf

(c) DoD Manual 6055.18-M, Enclosure 4, Section 13
https://www.hsdl.org/?view&did=24365

iv. MILITARY RECRUITING:

(1) Assistance Instruments: This is to notify potential applicants that each grant or cooperative agreement awarded under this announcement to an institution of higher education must include the following term and condition:

(a) As a condition for receiving funds available to the DoD under this award, you agree that you are not an institution of higher education (as defined in 32 CFR part 216) that has a policy or practice that either prohibits, or in effect prevents:

(i) The Secretary of a Military Department from maintaining, establishing, or operating a unit of the Senior Reserve Officers Training Corps (ROTC)—-in accordance with 10 U.S.C. 654 and other applicable Federal laws—-at that institution (or any sub-element of that institution);

(ii) Any student at that institution (or any sub-element of that institution) from enrolling in a unit of the Senior ROTC at another institution of higher education.

(iii) The Secretary of a Military Department or Secretary of Homeland Security from gaining access to campuses, or access to students (who are 17 years of age or older) on campuses, for purposes of military recruiting in a manner that is at least equal in quality and scope to the access to campuses and to students that is provided to any other employer; or

(iv) Access by military recruiters for purposes of military recruiting to the names of students (who are 17 years of age or older and enrolled at that institution or any sub-element of that institution); their addresses, telephone listings, dates and places of birth, levels of education, academic majors, and degrees received; and the most recent educational institutions in which they were enrolled.

(b) If you are determined, using the procedures in 32 CFR part 216, to be such an institution of higher education during the period of performance of this award, we:

(i) Will cease all payments to you of DoD funds under this award and all other DoD grants and cooperative agreements; and

(ii) May suspend or terminate those awards unilaterally for material failure to comply with the award terms and conditions.

v. SUBCONTRACTING:

(1) Assistance Instruments: N/A

(2) Contracts: Pursuant to Section 8(d) of the Small Business Act (15 U.S.C. § 637(d)), it is the policy of the Government to enable small business and small disadvantaged business (SDB) concerns to be considered fairly as subcontractors. All other than U.S. small businesses proposing contracts expected to exceed $750,000 and that have subcontracting possibilities are required to submit a subcontracting plan IAW FAR 19.702(a), and shall do so with their proposal.

Subcontracting plans are determined to be acceptable or unacceptable based on the criteria established at FAR 19.705-4, DFARS 219.705-4, and AFARS 5119.705-4. Goals are established on an individual contract basis and should result in realistic, challenging and attainable goals that, to the greatest extent possible, maximize small business participation in subcontracting for Small Business, SDB, Woman-Owned Small Business (WOSB), Economically-Disadvantaged Women-Owned Small Business (EDWOSB), Service-Disabled Veteran-Owned Small Business (SDVOSB), Veteran-Owned Small Business (VOSB), and Historically Underutilized Business Zone (HUBZone) Small Business consistent with applicants' make-or-buy policy, the pool of and availability of qualified and capable small business subcontractors, their performance on subcontracts, and existing relationships with suppliers.

Subcontracting goals should result in efficient contract performance in terms of cost, schedule, and performance and should not result in increased costs to the Government or

undue administrative burden to the prime contractor. More information on the Subcontracting program and the DoD Subcontracting goals may be found at: https://business.defense.gov/About/Goals-and-Performance/

vi. EXPORT CONTROL LAWS

(1) Assistance Instruments: N/A

(2) Contracts: Applicants should be aware of current export control laws and are responsible for ensuring compliance with all export control laws, including International Traffic in Arms Regulation (ITAR) (22 CFR 120 et. Seq.) and the Export Administration Regulations (15 CFR 730) requirements, as applicable. In some cases, developmental items funded by the Department of Defense are now included on the United States Munition List (USML) and are therefore subject to ITAR jurisdiction. The USML is available online at http://www.ecfr.gov/cgi-bin/text-idx?node=pt22.1.121. Additional information regarding the President's Export Control Reform Initiative can be found at http://export.gov/ecr/index.asp.

vii. DRUG-FREE WORKPLACE:

(1) Assistance Instruments: The recipient must comply with drug-free workplace requirements in 32 CFR Part 26, which is the DoD implementation of 41 U.S.C. 701, "Drug-free workplace requirements for Federal contractors."

(2) Contracts: The appropriate clause(s) shall be added to the award.

viii. DEBARMENT AND SUSPENSION:

(1) Assistance Instruments: The recipient must comply with requirements regarding debarment and suspension in Subpart C of 2 CFR part 180, as adopted by DoD at 2 CFR part 1125. This includes requirements concerning the recipient's principals under an award, as well as requirements concerning the recipient's procurement transactions and subawards that are implemented in DoD Research and Development General Terms and Conditions.

(2) Contracts: The appropriate clause(s) shall be added to the award.

ix. REPORTING SUBAWARDS AND EXECUTIVE COMPENSATION:

(1) Assistance Instruments: The recipient must report information about subawards and executive compensation as specified in the award term in Appendix A to 2 CFR Part 170, "Reporting subaward and executive compensation information," modified as follows:

(a) To accommodate any future designation of a different Government wide Web site for reporting subaward information, the Web site "http://www.fsrs.gov" cited in paragraphs a.2.i. and a.3 of the award provision is replaced by the phrase "http://www.fsrs.gov or successor OMB-designated Web site for reporting subaward information";

(b) To accommodate any future designation of a different Government wide Web site for reporting executive compensation information, the Web site "http://www.sam.gov" cited in paragraph b.2.i. of the award provision is replaced by the phrase "https://www.sam.gov or successor OMB-designated Web site for reporting information on total compensation"; and

(2) Contracts: The appropriate clause(s) shall be added to the award.

x. CONFLICT OF INTEREST/CONFLICT OF COMMITMENT REVIEW:

This announcement requires all current and pending research support, as defined by Section 223 of the FY21 National Defense Authorization Act, must be disclosed at the time of proposal submission, for all covered individuals. Such disclosure will be updated annually during the performance of any research project selected for funding, and whenever covered individuals are added or identified as performing under the funded project. Covered Individuals are those who are listed as key personnel on proposals, including but not restricted to, the principal investigator or co-principal investigator.

Any decision to accept a proposal for funding under this announcement will include full reliance on the applicant's statements. Failure to report fully and completely all sources of project support and outside positions and affiliations may be considered a materials statement within the meaning of the False Claims Act, 31 U.S.C. 3729, and constitute a violation of Federal law.

ARI may conduct a pre-award conflict of interest/conflict of commitment review, as defined in the National Security Presidential Memorandum- 33, of any proposal selected for funding. Applicants are advised that any significant conflict of interest/conflict of commitment identified may be a basis for the rejection of an otherwise awardable proposal.

3. Reporting

a. Reporting requirements, including number and types, will be specified in the award document. The reports shall be prepared and submitted in accordance with the procedures contained in the award document and mutually agreed upon before award. Reports and briefing material will also be required as appropriate to document progress in accomplishing program metrics. A final report that summarizes the project and tasks will be required at the conclusion of the performance period for the award.

Reporting and Meeting Requirements. In addition to other requirements that the award proposal may specify, all awards shall be held to the following reporting and meeting requirements:

a. Kick-off meeting: A kick-off meeting will be scheduled within one (1) month of award.

b. Quarterly Progress Reports: Brief letter-style quarterly reports will be filed with the Contracting Officer's Representative (COR), Grants Officer's Representative

(GOR) or Cooperative Agreement Manager (CAM) as applicable summarizing progress during the prior quarter, activities projected for the following quarter, challenges and difficulties encountered, status report on level of effort, grant funds expended during the prior quarter, cumulative funds remaining, anticipated expenses for the upcoming quarter, and bibliometric information.

c. Annual Interim Progress Review Briefing: Meeting to be conducted once a year at Ft. Belvoir or other location on a date to be determined.

d. Site Visit: At the discretion of the government, the COR/GOR or other ARI representative may make a site visit to location where research is being performed. Site visits will be coordinated and arranged with the Principal Investigator.

e. Interim Progress Report(s): Interim reports will be required on a periodic basis for all multi-year awards. The proposed schedule of interim reports should conform to major tasks in the proposal.

f. Annual Research Summary: Research Summaries are due November 1st of each year, unless otherwise specified, while the award is in force. Formats for the written summary and briefing slides will be provided by ARI. A final research summary will be due in conjunction with the final report.

g. Final Project Review Meeting: A project close-out meeting will be scheduled in the final quarter of the award to review results and conclusions of the research effort.

h. Final Technical Report: Draft report is due no later than 3 months prior to end of award.

i. Journal Articles, Book Chapters, and Book: Copies of journal article, book chapter, and/book are requested simultaneous with final acceptance.

j. Data and Associated Files: Cleaned, de-identified data files in SPSS, SAS, or comma- delimited text formats along with associated syntax and dictionary files shall be provided on CD, DVD, or other format deemed appropriate by GOR or CAM as appropriate with the final report.

b. Service Contract Reporting (SCR). For Contracts Only. See FAR 52.204-14, SAM Users Guide and DoD Guidebook for Service Contract Reporting in the System for Award Management at https://dodprocurementtoolbox.com/cms/sites/default/files/resources/2020-10/SCR%20Guidebook%2021%20October%202020.pdf.

c. If the total Federal share exceeds $500,000 on any Federal award under a notice of funding opportunity, the post-award reporting requirements reflected in Appendix XII to 2 CFR 200 will be included in the award document. This requirement also applies to

modifications of awards that: 1) increase the scope of the award, 2) are issued on or after January 1, 2016, and 3) increase the federal share of the award's total value to an amount that exceeds $500,000.

(End of Section)

G. FEDERAL AWARD AGENCY CONTACTS:

Questions of a technical nature are to be directed to: ARI (FSRU) Point of Contact:

Dr. Alexander Wind, (703) 545-2409, alexander.p.wind.civ@army.mil

Questions of a business nature are to be directed to: ACC (APG) RTP Division Point of Contact:

Ms. Wilveria Sanders, (919) 549-4328, wilveria.a.sanders.civ@army.mil

Comments or questions submitted should be concise and to the point, eliminating any unnecessary verbiage. The e-mail subject line should cite "**ARI FSRU BAA W911NF-23-S-0009."** Additionally, the relevant part and paragraph of the Broad Agency Announcement (BAA) should be referenced.

(End of Section)

H. OTHER INFORMATION:

Below are two (2) samples of the cost proposal informational requirements for a procurement contract or Grants, cooperative agreements, and TIAs.

CONTRACT PROPOSALS:

Cover sheet to include:

(1) BAA number;
(2) Technical area;
(3) Lead Organization submitting proposal;
(4) Type of business, selected among the following categories: "LARGE BUSINESS", "SMALL DISADVANTAGED BUSINESS", "OTHER SMALL BUSINESS", "HBCU", "MI", "OTHER EDUCATIONAL", OR "OTHER NON-PROFIT";
(5) Contractor's reference number (if any);
(6) Other team members (if applicable) and type of business for each;
(7) Proposal title;
(8) Technical point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available);
(9) Administrative point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), and electronic mail (if available);
(10) Award instrument requested: cost-plus-fixed-free (CPFF), cost-contract—no fee, cost sharing contract – no fee, or other type of procurement contract (specify).
(11) Place(s) and period(s) of performance;
(12) Total proposed cost separated by basic award and option(s) (if any);
(13) Name, address, and telephone number of the proposer's cognizant Defense Contract Management Agency (DCMA) administration office (if known);
(14) Name, address, and telephone number of the proposer's cognizant Defense Contract Audit Agency (DCAA) audit office (if known);
(15) Date proposal was prepared;
(16) DUNS number;
(17) TIN number;
(18) CAGE Code;
(19) Subcontractor information; and
(20) Proposal validity period

Any Forward Pricing Rate Agreement, other such approved rate information, or such other documentation that may assist in expediting negotiations (if available)

I. Reasoning for Submitting a Strong Cost Proposal:

The ultimate responsibility of the Contracting Officer is to ensure that all prices/costs offered in a proposal are fair and reasonable before contract award [FAR 15.4]. To

establish the reasonableness of the offered prices/costs, the Contracting Officer may ask an Applicant to provide various supporting documentation that assists in this determination. The Applicant's ability to be responsive to the Contracting Officer's requests can expedite the award process. As specified in Section 808 of Public Law 105-261, an Applicant who does not comply with a requirement to submit information for a contract or subcontract in accordance with paragraph (a)(1) of FAR 15.403-3 may be ineligible for award.

II. DCAA-Accepted Accounting System:

A) Before a contract can be awarded, the Contracting Officer must confirm that the Applicant has a Defense Contract Audit Agency (DCAA)-accepted accounting system in place for accumulating and billing costs under Government contracts [FAR 53.209-1(f)]. If the Applicant has DCAA correspondence which documents the acceptance of their accounting system, this should be provided to the Contracting Officer (i.e., attached or referenced in the proposal). Otherwise, the Contracting Officer will submit an inquiry directly to the appropriate DCAA office and request a review of the Applicant's accounting system.

B) If an Applicant does not have a DCAA-accepted accounting system in place, the DCAA review process can take several months depending upon the availability of the DCAA auditors and the Applicant's internal processes. This will cause a delay in contract award.

C) For more information about cost proposals and accounting standards, view the link titled "Information for Contractors" on the main menu on their website.

III. Field Pricing Assistance:

During the pre-award cost audit process, the Contracting Officer will solicit support from DCAA to determine commerciality and price reasonableness of the proposal [FAR 15.404-2]. Any proprietary information or reports obtained from DCAA field audits will be appropriately identified and protected within the Government.

IV. Sample Cost Proposal – "Piece by Piece":

A) To help guide Applicant through the pre-award cost audit process, a sample cost volume is detailed below. This sample also allows the Applicant to see exactly what the Government is looking for; therefore, all cost and pricing back-up data can be provided to the Government in the first cost proposal submission. Review each cost element within the proposal and take note of the types of documentation that the Contracting Officer will require from the Applicant.

B) Direct Labor: The first cost element included in the cost proposal is Direct Labor. The Department of Defense (DoD) requires each proposed employee to be listed by name and labor category.

Below is the Direct Labor as proposed by our sample Applicant:

		YEAR 1			YEAR 2		
Employee Name	**Labor Category**	**Direct Hourly Rate**	**Hours**	**Total Direct Labor**	**Direct Hourly Rate**	**Hours**	**Total Direct Labor**
Smith	Program Manager	$55.00	720.00	$39,600.00	$56.65	720.00	$40,788.00
Jones	Senior Engineer	$40.00	672.00	$26,880.00	$41.20	672.00	$27,686.40
Kim	Principal Engineer	$50.00	512.00	$25,600.00	$51.50	512.00	$26,368.00
Garcia	Entry Level Engineer	$10.00	400.00	$4,000.00	$10.30	400.00	$4,120.00
Brown	Project Administrator	$25.00	48.00	$1,200.00	$25.75	48.00	$1,236.00

(1) For this cost element, the Contracting Officer requires the Applicant to provide adequate documentation in order to determine that each labor rate for each employee/labor category is fair and reasonable. The documentation will need to explain how these labor rates were derived. For example, if the rates are DCAA- approved labor rates, provide the Contracting Officer with copies of the DCAA documents stating the approval. This is the most acceptable means of documentation to determine the rates fair and reasonable. Other types of supporting documentation may include General Service Administration (GSA) contract price lists, actual payroll journals, or Salary.com research. If an employee listed in a cost proposal is not a current employee (maybe a new employee, or one contingent upon the award of this contract), a copy of the offer letter stating the hourly rate - signed and accepted by the employee - may be provided as adequate documentation.

Sometimes the hourly rates listed in a proposal are derived through subjective processes, i.e., blending of multiple employees in one labor category, or averaged over the course of the year to include scheduled payroll increases, etc. These situations should be clearly documented for the Contracting Officer.

Another cost element in Direct Labor is labor escalation, or the increase in labor rates from Year 1 to Year 2. In the example above, the proposed labor escalation is 3% (ex., Pat Smith increased from $55.00/hr in Year 1, by 3% to $56.65/hr in Year 2). Whatever the proposed escalation rate is, please be prepared to explain why it is fair and reasonable [ex., A sufficient explanation for our sample escalation rate would be the Government's General Schedule Increase and Locality Pay for the same time period (name FY) in the same location (name location) was published as 3.5%, therefore a 3% increase is fair and reasonable].

C) Other Direct Costs (ODCs): This section of the cost proposal includes all other directly related costs required in support of the effort i.e., materials, subcontractors,

consultants, travel, etc. Any cost element that includes various items will need to be detailed in a cost breakdown to the Contracting Officer.

(1) Direct Material Costs: This subsection of the cost proposal will include any special tooling, test equipment, and material costs necessary to perform the project. Items included in this section will be carefully reviewed relative to need and appropriateness for the work proposed, and must, in the opinion of the Contracting Officer, be advantageous to the Government and directly related to the specific topic.

a) The Contracting Officer will require adequate documentation from the Applicant to determine the cost reasonableness for each material cost proposed. The following methods are ways in which the Contracting Officer can determine this [FAR 15.403-1].

i) Adequate Price Competition: A price is based on adequate price competition when the Applicant solicits and receives quotes from two or more responsible vendors for the same or similar items or services. Based on these quotes, the Applicant selects the vendor who represents the best value to the Government. The Applicant will be required to provide copies of all vendor quotes received to the Contracting Officer.

Note: Price competition is not required for items at or below the micro-purchase threshold ($10,000.00). If an item's unit cost is less than or equal to $10,000.00, price competition is not necessary. However, if an item's total cost over the period of performance (unit cost * quantity) is higher than $10,000.00, two or more quotes must be obtained by the Applicant.

ii) Commercial Prices: Commercial prices are those published on current price lists, catalogs, or market prices. This includes vendors who have prices published on a General Services Administration (GSA) schedule contract. The Applicant will be required to provide copies of such price lists to the Contracting Officer.

iii) Prices set by law or regulation: If a price is mandated by the Government (i.e., pronouncements in the form of periodic rulings, reviews, or similar actions of a Governmental body, or embodied in the laws) that is sufficient to set a price.

Below is the list of Direct Material	YEAR 1	YEAR 2
Raw Materials	$35,000.00	$12,000.00
Computer for experiments	$4,215.00	$0.00
Cable (item #12-3657, 300 ft)	$1,275.00	$0.00
Software	$1,825.00	$1,825.00
Subtotal Direct Materials Costs (DM):		

iv) "Raw Materials": This is a generic label used to group many material items into one cost item within the proposal. The Contracting Officer will require a detailed breakout of all the items that make up this cost. For each separate item over $5,000.00 (total for Year 1 + Year 2), the Applicant must be able to provide either competitive quotes received, or show that published pricing was used.

v) "Computer for experiments": Again, this item is most likely a grouping of several components that make up one system. The Contracting Officer will require a detailed breakout of all the items that make up this cost. For each separate item over $5,000.00 (total for Year 1 + Year 2), the Applicant must be able to provide either competitive quotes received, or show that published pricing was used.

vi) "Cable": Since this item is under the micro-purchase threshold of $5,000.00, competitive quotes or published pricing are not required. Simply provide documentation to show the Contracting Officer where this price came from.

vii) "Software": This cost item could include either one software product, or multiple products. If this includes a price for multiple items, please provide the detailed cost breakdown.

Note: The price for Year 1 ($1,825.00) is below the micro-purchase threshold; however, in total (Year 1 + Year 2) the price is over $5,000.00, so competitive quotes or published pricing documentation must be provided.

b) Due to the specialized types of products and services necessary to perform these projects, it may not always be possible to obtain competitive quotes from more than one reliable source. Each cost element over the micro-purchase threshold ($5,000.00) must be substantiated. There is always an explanation for HOW the cost of an item was derived. Provide the Contracting Officer with an explanation of how a cost or price was derived.

c) When it is not possible for an Applicant to obtain a vendor price through competitive quotes or published price lists, a Contracting Officer may accept other methods to determine cost reasonableness. Below are some examples of other documentation, which the Contracting Officer may accept to substantiate costs:

i) Evidence that a vendor/supplier charged another Applicant a similar price for similar services. Has the vendor charged someone else for the same product? (Two (2) to three (3) invoices from that vendor to different customers may be used as evidence.)

ii) Previous contract prices: Has the Applicant charged the Government a similar price under another Government contract for similar services? If the Government has already paid a certain price for services, then that price may already be considered fair and reasonable. (Provide the contract number, and billing rates for reference.)

iii) DCAA approved: Has DCAA already accepted or verified specific cost items included in your proposal? (Provide a copy of DCAA correspondence that addressed these costs.)

2) Below is the remaining ODC portion of our proposal including equipment, subcontractors, consultants, and travel. Assume in this scenario that competitive quotes or catalog prices were not available for these items:

OTHER DIRECT COSTS:	YEAR 1	YEAR 2
Equipment Rental for Analysis	$5,500.00	$5,600.00
Subcontractor - Lockheed	$25,000.00	$0.00
Consultant: Taylor Bowers	$0.00	$12,000.00
Travel	$1,250.00	$1,250.00
Subtotal Other Direct Costs (ODC):		

a) "Equipment Rental for Analysis": The Applicant explains that the Year 1 costof $5,500.00 is based upon 250 hours of equipment rental at an hourly rate of $22.00/hr. One (1) invoice from the vendor charging another vendor the same price for the same service is provided to the Contracting Officer as evidence. Since this cost is over the micro-purchase threshold, further documentation to determine cost reasonableness is required. The Applicant is able to furnish another invoice charging a second vendor the same price for the same service.

b) "Subcontractor – Lockheed": The Applicant provides a copy of the subcontractor quote to the Contracting Officer in support of the $25,000.00 cost. This subcontractor quote must include sufficient detailed information (equivalent to the data included in the prime's proposal to the Government), so that the Contracting Officer can make a determination of cost reasonableness.

i) As stated in Section 3.5(c)(6) of the DoD Cost Proposal guidance, "All subcontractor costs and consultant costs must be detailed at the same level as prime contractor costs in regards to labor, travel, equipment, etc. Provide detailed substantiation of subcontractor costs in your cost proposal."

ii) In accordance with FAR 15.404-3, "the Contracting Officer is responsible for the determination of price reasonableness for the prime contract, including subcontracting costs". This means that the subcontractor's quote/proposal may be subject to the same scrutiny by the Contracting Officer as the cost proposal submitted by the prime. The Contracting Officer will need to determine whether the subcontractor has an accepted purchasing system in place and/or conduct appropriate cost or price analyses to establish the reasonableness of proposed subcontract prices. Due to the proprietary nature of cost data, the subcontractor may choose to submit their pricing information directly to the Contracting Officer and not through the prime. This is understood and encouraged.

iii) When a subcontractor is selected to provide support under the prime contract due to their specialized experience, the Contracting Officer may request sole source justification from the Applicant.

c) "Consultant – Taylor Bowers": Again, the Applicant shall provide a copy of the consultant's quote to the Contracting Officer as evidence. In this example, the consultant will be charging an hourly rate of $125.00/hour for 96 hours of support. The Applicant indicates to the Contracting Officer that this particular consultant was used on a previous contract with the Government (provide contract number), and will be charging the same rate. A copy of the consultant's invoice to the Applicant under the prior contract is available as supporting evidence. Since the Government has paid this price for the same services in the past, determination has already been made that the price is fair and reasonable.

d) "Travel": The Contracting Officer will require a detailed cost breakdown for travel expenses to determine whether the total cost is reasonable based on Government per diem and mileage rates. This breakdown shall include the number of trips, the destinations, and the number of travelers. It will also need to include the estimated airfare per round trip, estimated car rental, lodging rate per trip, tax on lodging, and per diem rate per trip. The lodging and per diem rates must coincide with the Joint Travel Regulations. Please see the following website to determine the appropriate lodging and per diem rates: http://www.defensetravel.dod.mil. Additionally, the Applicant must provide why the airfare is fair and reasonable as well. Sufficient supporting documentation for both airfare and car rental would include print-outs of online research at the various travel search engines (Expedia, Travelocity, etc.) documenting the prices for airfare and car rentals thus proving why your chosen rate is fair and reasonable.

i) Below is a sample of the travel portion:

TRAVEL		Trips	Travelers	Nights	Days	Unit Cost	Total Travel
Airfare	roundtrip	1	1			$996.00	$996.00
Lodging on	per day Tax	1	1	1		$75.00	$75.00
Lodging (12%)	per day	1	1	1		$9.00	$9.00
Per Diem	per day	1	1		2	$44.00	$88.00
Automobile Rental	per day	1	1			$41.00	$41.00

Subtotal Travel	$1,209.00

D) Indirect Rates: Indirect rates include elements such as Fringe Benefits, General & Administrative (G&A), Overhead, and Material Handling costs. The Applicant shall indicate in the cost proposal both the indirect rates (as a percentage) as well as how those rates are allocated to the costs in the proposal.

Below is the Indirect Rates portion of our Subtotal Direct Labor (DL):	YEAR 1 $97,280.00	YEAR 2 $100,198.40
Fringe Benefits, if not included in Overhead, rate (15.0000 %) X DL =	$14,592.00	$15,029.76
Labor Overhead (rate 45.0000 %) X (DL + Fringe) =	$50,342.40	$51,852.67
Total Direct Labor (TDL):	$162,214.40	$167,080.83

(1) In this example, the Applicant includes a Fringe Benefit rate of 15.00% that it allocated to the Direct Labor costs. They also propose a Labor Overhead rate of 45.00% that is allocated to the Direct Labor costs plus the Fringe Benefits.

(2) All indirect rates and the allocation methods of those rates must be verified by the Contracting Officer. In most cases, DCAA documentation supporting the indirect rates and allocation methods can be obtained through a DCAA field audit or proposal review. Many Applicants have already completed such reviews and have this documentation readily available. If an Applicant is unable to participate in a DCAA review to substantiate indirect rates, the Contracting Officer may request other accounting data from the Applicant to make a determination.

E) Cost of Money (COM): If Cost of Money (an imputed cost that is not a form of interest on borrowings- see FAR 31.205-20); an "incurred cost" for cost-reimbursement purposes under applicable cost-reimbursement contracts and for progress payment purposes under fixed-price contracts; and refers to— (1) Facilities capital cost of money (48 CFR 9904.414); and (2) Cost of money as an element of the cost of capital assets under construction (48 CFR 9904.417)) is proposed in accordance with FAR 31.205-10, a DD Form 1861 is required to be completed and submitted with the contractor's proposal.

F) Fee/Profit: The proposed fee percentage will be analyzed in accordance with

DFARS 215.404, the Weighted Guidelines Method.

G) Small Business Subcontracting Plan: If the total amount of the proposal exceeds $650,000.00 and the Applicant is a large business or an institute of higher education (other than HBCU/MI) and the resultant award is a contract, the Applicant shall be prepared to submit a subcontracting plan for small business and small disadvantaged business concerns. A mutually agreeable plan will be included in and made a part of the contract (see the goals listed at Section II, F, 2, b).

GRANT & COOPERATIVE AGREEMENT PROPOSALS (ASSISTANCE INSTRUMENTS)

Before award, it must be established that an approved accounting system and financial management system exist.

A) Direct Labor: Show the current and projected salary amounts in terms of man-hours, man-months, or annual salary to be charged by the Principal Investigator(s), faculty, research associates, postdoctoral associates, graduate and undergraduate students, secretarial, clerical, and other technical personnel either by personnel or position. State the number of man-hours used to calculate a man-month or man-year. For proposals from universities, research during the academic term is deemed part of regular academic duties, not an extra function for which additional compensation or compensation at a higher rate is warranted. Consequently, academic term salaries shall not be augmented either in rate or in total amount for research performed during the academic term. Rates of compensation for research conducted during non-academic (summer) terms shall not exceed the rate for the academic terms. When part or all of a person's services are to be charged as project costs, it is expected that the person will be relieved of an equal part or all of his or her regular teaching or other obligations. For each person or position, provide the following information:

(1) The basis for the direct labor hours or percentage of effort (e.g., historical hours or estimates)

(2) The basis for the direct labor rates or salaries: Labor costs should be predicted upon current labor rates or salaries. These rates may be adjusted upward for forecast salary or wage cost-of-living increases that will occur during the agreement period. The cost proposal should separately identify the rationale applied to base salary/wage for cost-of-living adjustments and merit increases. Each must be fully explained.

(3) The portion of time to be devoted to the proposed research, divided between academic and non-academic (summer) terms, when applicable

(4) The total annual salary charged to the research project

(5) Any details that may affect the salary during the project, such as plans for leave and/or remuneration while on leave

Fringe Benefits and Indirect Costs (Overhead, General and Administrative, and Other): The most recent rates, dates of negotiation, and the base(s) and periods to which the rates apply must be disclosed and a statement included identifying whether the proposed rates are provisional or fixed. If the rates have been negotiated by a Government agency, state when and by which agency. A copy of the negotiation memorandum should be provided. If negotiated forecast rates do not exist, Applicants must provide sufficient detail to enable a determination to be made that the costs included in the forecast rate are allocable according to 2 CFR Part 200, applicable OMB Circulars, and/or FAR/DFARS provisions. Applicants' disclosure should be sufficient to permit a full understanding of the content of the rate(s) and how it was established. As a minimum, the submission should identify:

(1) All individual cost elements included in the forecast rate(s);

(2) Bases used to prorate indirect expenses to cost pools, if any;

(3) How the rate(s) were calculated;

(4) Distribution basis of the developed rate(s);

(5) Bases on which the overhead rate is calculated, such as "salaries and wages" or "total costs," and

(6) The period of the Applicant's fiscal year

B) Permanent Equipment: If facilities or equipment are required, a justification why this property should be furnished by the Government must be submitted. State the organization's inability or unwillingness to furnish the facilities or equipment. Applicants must provide an itemized list of permanent equipment showing the cost for each item. Permanent equipment is any article or tangible nonexpendable property having a useful life of more than one year and an acquisition cost of $5,000.00 or more per unit. The basis for the cost of each item of permanent equipment included in the budget must be disclosed, such as:

(1) Vendor Quotes: Show name of vendor, number of quotes received and justification, if intended award is to other than lowest bidder

(2) Historical Cost: Identify vendor, date of purchase, and whether or not cost represents lowest bid; include reason(s) for not soliciting current quotes

(3) Engineering Estimate: Include rationale for quote and reason for not soliciting current quotes; if applicable, the following additional information shall be disclosed in the Applicant's cost proposal:

- Special test equipment to be fabricated by the awardee for specific research purposes and its cost

- Standard equipment to be acquired and modified to meet specific requirements, including acquisition and modification costs, listed

separately

- Existing equipment to be modified to meet specific research requirements, including modification costs; do not include equipment the organization will purchase with its funds if the equipment will be capitalized for Federal income tax purposes; proposed permanent equipment purchases during the final year of an award shall be limited and fully justified

- Grants and cooperative agreements may convey title to an institution for equipment purchased with project funds. At the discretion of the Contracting/Grants Officer, the agreement may provide for retention of the title by the Government or may impose conditions governing the equipment conveyed to the organization. The Government will not convey title to commercial contractors.

C) Travel: Forecasts of travel expenditures (domestic and foreign) that identify the destination and the various cost elements (airfare, mileage, per diem rates, etc.) must be submitted. The costs should be in sufficient detail to determine the reasonableness of such costs. Allowance for air travel normally will not exceed the cost of round-trip, economy air accommodations. Specify the type of travel and its relationship to the research project. Additional travel may be requested for travel to Army laboratories and facilities to enhance agreement objectives and to achieve technology transfer.

D) Materials, Supplies, and Consumables: A general description and total estimated cost of expendable equipment and supplies are required. The basis for developing the cost estimate (vendor quotes, invoice prices, engineering estimate, purchase order history, etc.) must be included. If possible, provide a material list.

E) Publication, Documentation, and Dissemination: The budget may request funds for the costs of preparing, publishing, or otherwise making available to others the findings and products of the work conducted under an agreement, including costs of reports, reprints, page charges, or other journal costs (except costs for prior or early publication); necessary illustrations, cleanup, documentation, storage, and indexing of data and databases; and development, documentation, and debugging of software.

F) Consultant Costs: Applicants normally are expected to utilize the services of their own staff to the maximum extent possible in managing and performing the project's effort. If the need for consultant services is anticipated, the nature of proposed consultant services should be justified and included in the technical proposal narrative. The cost proposal should include the names of consultant(s), primary organizational affiliation, each individual's expertise, daily compensation rate, number of days of expected service, and estimated travel and per diem costs.

I) Computer Services: The cost of computer services, including computer-based retrieval of scientific, technical, and educational information, may be requested. A justification/explanation based on the established computer service rates at the

proposing organization should be included. The budget also may request costs, which must be shown to be reasonable, for leasing automatic data processing equipment. The purchase of computers or associated hardware and software should be requested as items of equipment.

II) Subawards (subcontracts or subgrants): A precise description of services or materials that are to be awarded by a subaward must be provided. For subawards totaling $10,000.00 or more, provide the following specific information:

(1) A clear description of the work to be performed

(2) If known, the identification of the proposed subawardee and an explanation of why and how the subawardee was selected or will be selected

(3) The identification of the type of award to be used (cost reimbursement, fixed price, etc.)

(4) Whether or not the award will be competitive and, if noncompetitive, rationale to justify the absence of competition

(5) A detailed cost summary

G) Other Direct Costs: Itemize and provide the basis for proposed costs for other anticipated direct costs such as communications, transportation, insurance, and rental of equipment other than computer related items. Unusual or expensive items shall be fully explained and justified.

H) Profit/Fee: Profit/fee is not allowed for the recipient of an assistance instrument (grant or cooperative agreement) or TIA or a subawardee/subrecipient under an assistance instrument or TIA. A subaward is an award of financial assistance in the form of money, or property in lieu of money, made under a DoD grant or cooperative agreement by a recipient to an eligible subrecipient. The term includes financial assistance for substantive program performance by the subrecipient of a portion of the program for which the DoD grant or cooperative agreement was made.

I) Small Business Subcontracting Plan: Small Business Subcontracting Plan requirements do not apply to assistance instruments.

CONTRACT FACILITIES CAPITAL COST OF MONEY: If cost of money is proposed, a completed Contract Facilities Capital Cost of Money (FCCM) (DD Form 1861) is required.

Acronyms:

ACC (APG) RTP –	Army Contracting Command (Aberdeen Proving Ground) Research Triangle Park Division
AOR –	Authorized Organization Representative
ARI –	Army Research Institute for the Behavioral and Social Sciences ARL – Army Research Laboratory

BAA –	Broad Agency Announcement
CAGE –	Commercial and Government Entity
CFDA–	Catalogue of Federal Domestic Assistance
CFR –	Code of Federal Regulations
COM –	Cost of Money
CONUS –	Continental United States
CPFF –	Cost Plus Fixed Fee
D&B –	Dun and Bradstreet, Inc.
DCAA –	Defense Contract Audit Agency
DCMA –	Defense Contract Management Agency
DD –	Department of Defense
DFARS –	Defense Federal Acquisition Regulation Supplement
DLSC –	Defense Logistics Service Center
DoD –	Department of Defense
DoDI–	Department of Defense Instruction
DUNS –	Data Universal Numbering System
EIN –	Employer Identification Number
FAPIIS –	Federal Awardee Performance and Integrity Information
System FAR –	Federal Acquisition Regulation
FCCM –	Facilities Capital Cost of Money
FFP –	Firm Fixed Price
FFRDC –	Federally Funded Research and Development Center FOIA
–	Freedom of Information Act
FSC –	Federal Service Code
FY–	Fiscal Year
G&A –	General and Administrative
GFD –	Government Furnished Data
GFE –	Government Furnished Equipment
GFI –	Government Furnished Information
GFP –	Government Furnished Property
GSA –	General Services Administration
HBCU/MI –	Historically Black College or University/Minority Serving Institution
IR&D –	Independent Research and Development
MIPR –	Military Interdepartmental Purchase Request
ODC –	Other Direct Cost
OMB –	Office of Management and Budget
OPSEC –	Operations Security
PDF –	Portable Document Format
PI –	Principal Investigator
PL –	Public Law
PWS –	Performance Work Statement
R&D –	Research & Development
SAM –	System for Award Management
SF –	Standard Form
TIA –	Technology Investment Agreement
TIN –	Taxpayer Identification Number
TPOC –	Technical Point of Contact

UIC –	Unit Identification Code
USC –	United States Code
XML –	Extensible Markup Language