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-15-R-0007

19 February 2015 – 5 June 2015

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:

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 2015 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 competitive selection of proposals. 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, "The Competition in Contracting Act of 1984" and subsequent amendments.

The U.S. Army Research Institute for the Behavioral and Social Sciences 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, training, and leader development issues. The basic research program supports research projects that are designed to expand fundamental knowledge and discover general principles in the behavioral and social sciences.

In addition to programmatic efforts to develop and evaluate psychological and behavioral theory, we **strongly** encourage researchers to propose novel, state-of-the-art, and multidisciplinary approaches that address difficult problems. 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. Proposals may address both traditional behavioral issues as well as psychophysiological (to include neuroscience) and network science approaches to social phenomena, memory, cognition, and personality. **The agency cannot support proposals through this BAA that are primarily applied research projects (e.g., human factors studies or training program evaluations) or purely focused on physiology, psychopathology or behavioral health.** Collaboration is encouraged among educational institutions, non-profit/not-for-profit organizations, commercial organizations, and the other U.S. Military Services. A portion of available funding may be made available for meritorious proposals from minority serving institutions and historically black colleges and universities, and individuals who are early in their research careers and have never received ARI funding as a Principal Investigator. Funding of basic research proposals within ARI areas of interest will be determined by funding constraints and priorities set during each budget cycle.

The decision to fund a new basic research proposal consists of two stages. During the first phase, at least two behavioral scientists within the ARI basic research program review each proposal for responsiveness and technical merit. Additionally, other ARI behavioral and social scientists are invited to provide reviews. In some cases, an external subject matter expert may be asked to review a proposal. ARI may solicit input on technical aspects of proposals from non-Government consultants/experts who are strictly bound by non-disclosure requirements.

During the second phase, ARI research unit chiefs are asked to identify responsive proposals that may transition to their basic research programs. Each proposal will be reviewed by at least three behavioral research scientists. Funding priority will be given to those proposals that are rated as highly responsive, innovative, having strong technical merit, and identified as having transition potential.

Proposals should describe their contribution to theory and how their results might lead to basic behavioral research that would be meaningful to the Army. Those contemplating submission of a proposal are encouraged to submit a white paper before submitting a full proposal (see page 24 of this BAA). This sequence allows earliest determination of the potential for funding and minimizes the labor and cost associated with submission of full proposals that have minimal probability of being selected for funding. Costs associated with white paper or full proposal submissions 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. Offerors submitting proposals are cautioned that only a Government Contracting or Grants Officer may obligate the Government to any legal instrument involving expenditure of Government funds.

Decisions to award new basic research awards are subject to funds availability, and ARI may choose to not award any new basic research awards 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.

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 select, classify, train, and develop Soldiers, leaders, and units that can:

- Adapt quickly to dynamic missions, operational environments, and a wide spectrum of cultures and languages;
- Function effectively in complex digital, information rich, and semi-autonomous environments;
- Collaborate effectively in quickly formed units and in high stress environments, and
- 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.

To be eligible for an award under this announcement, a prospective 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.

A. Required Overview Content

1. 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 Division

2. Research Opportunity Title:

U.S. Army Research Institute for the Behavioral and Social Sciences Broad Agency Announcement for Basic Research (Fiscal Year 2015)

3. Announcement Type:

Initial Announcement

4. Research Opportunity Number:

W911NF-15-R-0007

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

12.431 – Basic Scientific Research

6. Response Dates:

White paper submissions will be considered until 3 April 2015. Full proposals must be received by 5 June 2015 to be considered for award under this BAA. New start awards are intended to be obligated between 1 November 2015 and 31 January 2016. Amendments to this BAA will be posted to https://www.fbo.gov (FedBizOpps) and http://www.grants.gov when they occur. Interested parties are encouraged to periodically check these websites for updates and amendments.

II. DETAILED INFORMATION ABOUT THE FUNDING OPPORTUNITY

II-A: FUNDING OPPORTUNITY DESCRIPTION

The funding opportunity is divided into two types of proposals for basic research: (1) Standard Basic Research proposals and (2) Early Career Basic Research proposals. ARI will consider both Standard and Early Career proposals in response to this BAA.

Standard Proposals. Most basic research awards are awarded in response to Standard Proposals provided by experienced researchers. In recent years, the performance period of these has typically been two to three years, with a median total award of $556,000.00. 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.

Early Career Proposals. To foster the development of innovative and creative researchers, ARI solicits proposals from individuals 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 Page 37, II-E: "APPLICATION REVIEW INFORMATION", "Criteria", Section 5 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. Investigators 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) can be included in the proposal should the initial work prove promising. These years should be denoted as option years in the proposal.
3. The research must fit into one of the stated 6 domains of the BAA Basic Research areas of interest.
4. The Principal Investigators 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.
5. While there is no specific amount of funding set aside for these proposals, initial budgets should be modest: approximately $110K for the initial year.

In some cases, where a proposal is of interest but the underlying theory or research approach needs additional development, ARI may choose to offer a smaller facilitating award designed to help the investigator develop his/her ideas. Such awards are made at the discretion of ARI, and will be in the $20-25K range for one year.

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 which address theoretical issues in ARI research interest domains are also considered.
The use of military participants is neither necessary nor encouraged; and, moreover, ARI cannot arrange access to military participants to support basic research investigations.

II-A-1: BAA Basic Research Areas of Interest

Basic Research is defined as 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. 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, and facilitate the transition of basic research results to applied programs for eventual use by the operational Army.

While all proposals will be considered, ARI has identified the following six 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. Furthermore, proposals that adopt multi- or interdisciplinary approaches to research questions are encouraged.

These domains include:

1. **Learning in Formal and Informal Environments**
2. **Leader Development**
3. **Personnel Testing and Performance**
4. **Organizational Effectiveness**
5. **Socio-Cultural Capabilities**
6. **Psychophysiology of Individual Differences**

For additional information on these domains, and potential areas of interest, proposal developers may also consult the following reports by the National Research Council of the National Academy of Science:

- "Human Behavior in Military Contexts" (2008) 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

These reports are available from the National Academies Press at 800-624-6242 or 202-334-3313 or on the internet at http://www.nap.edu.

Detailed descriptions of these six 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) key research objectives, and (c) a list of high priority research questions. The broad overview and research objectives reflect the long-term priorities for the domain; whereas, the high priority research questions reflect more immediate, urgent research questions. Proposals addressing any of the issues or questions raised in the overview, long-term research objectives, or high priority research questions are welcomed. While the research objectives are long-term priorities, they should not be considered an exhaustive list of Army-relevant topics for the broader research domain. Proposals addressing the high priority research questions are particularly encouraged, as these are research needs within the next one (1) to three (3) years.

1. Learning in Formal and Informal Environments

Overview:

The operating environment of the Army over the last ten years has created significant pressure on the Army training and educational institutions and individual Soldiers and leaders to maximize all opportunities for learning. These pressures will continue in the future as the Army reduces its number of personnel while also fulfilling the necessary emphasis on a diverse range of operations (e.g., combat, peacekeeping missions). In addition to defensive and stability operations, non-state adversaries that embed within local populations will continue to present unique challenges for detecting threats to U.S. and coalition personnel. Soldiers and leaders will be responsible for developing a broader array of skills and to higher levels of proficiency earlier in their careers. This will require a sustained focus on maximizing learning from formal learning environments, including classroom training, collective field training exercises, 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 identify critical operational areas in need of change/development and to learn quickly from informal learning experiences, including their battlefield experiences, mentoring, shared experiences of others, and self-development.

The overarching research goal is to advance theoretical understanding and develop specific learning methods to maximize the development, retention, and transfer of complex tactical/technical, interpersonal, and resiliency-related skills, via learning from both formal and informal learning environments and experiences.

Objectives:

I. Learning Theory

a. Develop 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 and across a variety of formal and informal learning environments (e.g., formal training, on-the-job experiences, small group training, self-development).
b. Develop and/or refine theory explaining how the effectiveness of different learning methods may vary by the learning domain (e.g., tactical/technical, interpersonal skills, perceptual skills, or resiliency/adaptability and other non-technical/tactical skills), learner expertise and other individual differences of the learner, instructor characteristics, and contextual factors external to the learner.

II. Learning Methods
a. Develop innovative theory and learning methods to maximize collective learning processes and outcomes for individual and group tasks.
b. Develop innovative theory and methods to tailor training to a given learner or work group's needs and to reduce the length of time to achieve skill mastery.

III. Learning Assessment
a. Develop measurement techniques to objectively and/or automatically assess learning processes and learner performance/progress in a variety of training domains, within both individual and small work group training environments.
b. Develop measurement techniques to assess metalearning ('learning to learn') and identify factors that impact metalearning in different learning environments.

<u>High Priority Research Questions</u>:

- How can we objectively and/or automatically assess learning processes and learner/group status on skills being learned within a variety of learning environments (e.g., technology-delivered training, small group field training) in order to provide corrective feedback or tailor training to the given learner/work group's needs?
- What are effective learning methods for developing self-awareness, self-management, and metalearning, and what factors impact their effectiveness?
- How can we assess collective performance from a multi-level perspective in a manner that incorporates both the individual-level performance contributions of each group member as well as factors attributable to the collective? Further, how can changes in performance over time be assessed, incorporating both individual and collective proficiency development?
- What learning methods and theory can be leveraged or developed to maximize individual and collective learning processes and outcomes under various conditions (e.g., high or low physiological or psychological stress, high or low work group cohesion or resilience)?

2. Leader Development

<u>Overview</u>:

As the Army reduces the number of personnel in the Service, fewer commissioned and non-commissioned officers will be represented at all levels of the Army. Yet, the Army has a constant need to retain the highest quality leaders, which necessitates an understanding of how to identify, develop, and retain quality leaders. Increased leader capabilities will also be required in order to be adaptive and resilient across the full range of operations (e.g., combat, stabilization missions). Leaders at all levels in the Army must possess the critical strategic thinking, command and sense-making, perceptual, interpersonal, and resiliency-related skills to effectively lead and influence a variety of stakeholders both inside and outside the Army (e.g., both up and down the chain of command, interagency partners, local populations). Soldiers will also face increased time at home station compared to the last ten years, requiring an understanding of how leaders can develop, mentor, and motivate their Soldiers in both the operational environment when deployed and at home station. In order to overcome such challenges, a systematic reevaluation concerning how the Army's leadership development process can optimize leader growth is necessary.

The overarching research goal is to advance theoretical understanding of leadership and leadership development within the operational environment and at home station, and create leader development methods for maximizing the requisite cognitive, perceptual, and interpersonal skills for effective leadership across all levels of command.

Objectives:

I. Leadership Processes
   a. Develop and/or refine theory and methods for identifying the requisite knowledge, skills, and abilities (e.g., critical strategic thinking, command and sense-making, perceptual, interpersonal, and resiliency-related skills) that underlie effective leader influence at various levels of leadership.
   b. Develop theory for understanding how leaders make rational, ethical decisions during both positive and negative emotionally-laden situations, as well as how they build a positive, ethical command climate to guide behavior of their subordinates.
   c. Develop and/or refine theory and methods related to leadership located within networks and systems.

II. Leader Development
   a. Develop and/or refine theory and methods for training the skills and behaviors necessary for leaders to effectively mentor and develop subordinates within both the operational environment and at home station.
   b. Develop and/or refine theory and methods to instantiate leader flexibility, resiliency, and adaptability in novel missions and operational environments, including how to quickly adapt and learn from both positive and negative on-the-job experiences.
   c. Develop theory and methods to develop strategic thinking and mission command skills in small unit to mid-level leaders, including the development of trust, cohesion, and shared cognition among subordinates.

d. Develop theory to understand the training and retention of quality leaders, including construct definition of high potential talent development programs and identification of the consequences of these development programs with regard to individual, work group, and organizational-level outcomes.
e. Develop theory and methods to understand the development of leader identity, including implicit theories of leadership and how it impacts sensemaking, shocks and their impact on leader development, and gain and loss cycles in leader development.

III. Leadership Assessment
a. Develop measurement techniques to objectively measure effective and ineffective, verbal and nonverbal leader behaviors.
b. Develop and/or refine theory and methods related to ways leaders seek and integrate feedback.

High Priority Research Questions:

- What factors (e.g., organizational, situational, personal, temporal) influence the effectiveness of individual and collaborative strategic thinking and how can these factors be assessed and developed at all levels of leadership?
- How can leader resiliency and adaptability in novel situations, including adapting and learning from both positive and negative work experiences, be developed; and how do the leader characteristics of resiliency and adaptability impact work group resilience?
- How do leaders make ethical, yet effective decisions during emotionally-laden situations, and positively shape their subordinates' behavior in such situations?
- How do leaders effectively mentor their subordinates on leadership, social, technical, resiliency-related skills and appropriate organizational values; and how can such mentoring skills/behaviors be objectively assessed and developed?
- How may the interaction between rank and status produce positive or negative leadership outcomes?

3. Personnel Testing and Performance

Overview:

The Army has historically undergone cycles of rapidly growing and contracting the force, and will likely continue to do so in the future. Maintaining readiness requires that the Army possess high quality personnel throughout the force structure. To do this, it needs to identify and assess aptitude and skill requirements for Soldiers and leaders, and to place personnel into jobs matched with their capabilities to encourage productivity, optimal performance, and resilience in the Army. Current personnel tests assess general cognitive abilities, some vocational aptitudes, and an array of temperament dimensions, which provide good prediction of success in initial training, first assignment after training, and career continuance. However, improvements in test efficiency, accuracy, and coverage continue to be sought to allow for improved prediction of Soldier success, as well as the possibility of expanding the application scope to include prediction of collective performance, improvements in job classification, and occupational

assignments. In order to achieve greater testing efficiency and accuracy, limitations of current testing methods and theory must be overcome.

The goal of research in this area is to identify and understand fundamental processes underlying stable individual differences related to Soldier success, and develop efficient, accurate assessment tools and classification measures useful in mass-administration testing contexts.

Objectives:

I. Assessment Methods

a. Explore assessment of complex constructs implicated in Soldier and leader success to include cognitive complexity, cognitive flexibility, curiosity, creativity, spatial reasoning, social/interpersonal skills, resilience, and fundamental cognitive abilities (such as working memory and executive function).
b. Investigate testing and assessment methods as well as associated statistical analysis approaches to accurately and efficiently assess multiple constructs simultaneously to improve selection and classification techniques.
c. Explore new and emerging testing methods that resist socially desirable responding with regard to self or others.

II. Measurement Theory

a. Explore boundaries of existing test theory and develop novel contributions that provide for a better understanding of sources of variability in trait/ability expression and observed score variance (e.g., test context, test-taker motivation and perspective, and other contextual factors), and ways to use information about such variability to improve the quality of organizational decisions.
b. Develop multi-level theory of selection and occupational classification processes to provide understanding of how individuals contribute to performance in different collectives (including both small groups and larger units).
c. Develop job analysis theory to assess relatedness (i.e., similarities and differences) across many jobs to create overarching criteria for job classification and competency assessment while minimizing or eliminating reliance on subject matter experts.

III. Personnel Systems

a. Advance understanding of motivational, psychological, demographic organizational and societal factors that influence personnel enlistment, retention, and productivity.

High Priority Research Questions:

- How can constructs such as cognitive flexibility, creativity, curiosity, adaptability, and resilience be objectively assessed and linked to job performance in individual and group settings?

- What measurement techniques exist or can be developed to assess dynamic skills, such as social, interpersonal, or communication skills, or ethical response tendencies in dynamic, emotionally-charged environments?
- How to develop and validate models which integrate applicant attributes (e.g., cognitive, personality, interest, motivation) with broader contextual factors (e.g., the skills and capabilities of other work group members, task types, and social norms) for the purpose of making job assignment and selection decisions?
- Can new analytic methods be created to determine similarities and differences in job criteria across many jobs and cluster jobs without using information obtained from subject matter experts from those positions?

4. Organizational Effectiveness

Overview:

Military organizations reflect a hierarchical nested structure, with Soldiers and leaders embedded in small work groups, which in turn are embedded in larger units and the organization as a whole. Given this hierarchical nested structure, it is critical to better understand the multi-level and cross-level influences at the individual, small unit, and organizational level, and how these influences relate to organizational effectiveness. Moreover, military units are currently operating in a Joint-Interagency context, and this trend is expected to continue in the future. Combined and joint efforts by personnel from different services, agencies, and nations create numerous challenges, such as how understanding and assumptions of work processes will develop and be managed, and how organizational goals are defined. The fluid and often ambiguous environment of military operations demands that military personnel be able to rapidly adapt to changing circumstances. In short, to achieve maximal effectiveness at all echelons, it is critical to understand how the processes, structure, and characteristics of these multi-echelon organizations impact performance and resiliency at the individual, small unit, and organizational level.

The overall goal of research in this area is to expand our knowledge of the complex social, cognitive and behavioral processes, structures, and characteristics of multi-echelon organizations, and to develop improved methods for identifying, measuring, and modeling these factors for predicting and improving organizational performance and effectiveness.

Objectives:

I. Organizational Theories: Processes & Dynamics
   a. Develop theories of group structure and processes that can address cross-level causal influences, temporal variation and dynamics, inter-organizational communication and collaboration, and resilience and adaptability within and across organizations.
   b. Develop, expand, and test theories about how individuals and groups in collectives generate and transmit meaning within and across levels. Use these to better understand the causes and consequences of social norms, organizational culture, organizational learning, social identity, social structure and sense-making.

II. Multi-Level Methods & Models
   a. Develop new measurement techniques for assessing complex multi-level constructs (such as power and status, group norms, and culture) that incorporate unobtrusive approaches and are useful for detecting and understanding variation across relevant timeframes.
   b. Develop methods and models for identifying, detecting, and analyzing types of organizational structure (explicit and implicit), and use information about explicit and implicit social structures to better understand organizational adaptability, effectiveness, and resilience in different mission contexts.
   c. Identify ways to develop and validate basic mathematical and scientific methods that will yield improved tools (such as statistical models, mathematical frameworks, and computational algorithms), principles, and data to support the analysis and study of dynamic multilevel systems.

High Priority Research Questions:

- Are there identifiable "best practices" in the area of unobtrusive measurement (including target constructs and applications of these techniques)? What constructs can be effectively assessed using such techniques today? What constructs are likely to be good candidates for future research?
- How do individual-level capabilities (e.g., adaptability, resilience) combine to yield work group- and organizational-level capabilities?
- Are there predictable patterns of change in group cognition and interpersonal relationships when group composition (including leadership) changes? Alternatively, when a group member is replaced, what internal functions/processes/states does a work group need to focus on in order to ensure the continuity of performance?
- What factors affect effective/ineffective information transmission, opinion formation (e.g., about lessons learned, perceptions of potential costs and benefits), and judgment and decision-making (including strategic planning) in organizations?
- What group, organizational, and situational factors promote or inhibit negative leadership, group, or individual behaviors?

5. Socio-Cultural Capabilities

Overview:

Army Soldiers and leaders are expected to plan and operate in ways that require them to interact with and support individuals from other military services, organizations (civilian and military), nations, and ethnic/cultural backgrounds. Understanding how differences in culture affect interpersonal interactions, social influence, leadership, and other social phenomena is critical to the operational effectiveness of the Army. Further, understanding how cultures develop and change may provide key insights into the broader context for these interpersonal interactions. The future success of Joint/Interagency and multinational operations is likely to be affected by the manner in which the underlying cultures differ, how those differences affect cognition and behavior, and the ability of individuals and organizations to recognize, plan for, and deal with

these differences. In addition to the operational importance of cross-cultural capability, the Army is also interested in understanding and influencing the development and change of organizational culture within Army units and organizations. The Army's ability to assess and influence the organizational culture of units within the Army may be a significant factor in the Army's adaptability, resilience, and effectiveness in a dynamic geopolitical context.

The overall goal of this area of research is to develop theories and models of culture that can be used to improve understanding and prediction of individual perceptions, cognition, and behavior within different cultural contexts, and to develop improved processes for assessing culture and culture-related behavior and cognition.

Objectives:

I. Defining and refining the meaning of culture
   a. Expand models of culture and identity to fully incorporate perspectives offered by multiple disciplines (e.g., psychology, sociology, anthropology, behavioral economics, linguistics) to examine intra and inter-cultural variability across a wider range of overlapping contexts, including geographic, organizational, social, and familial.
   b. Identify specific dimensions of culture applicable to ethnic, national, regional, organizational, and professional contexts (including military-specific contexts), which can be meaningfully applied to improve our understanding of individual and small group norms, behavior, and cognition.
   c. Develop theoretical models of how cultures at different levels (including subcultures within organizations) form and maintain themselves across time.

II. Understanding cultural differences in teams and groups
   a. Develop an improved understanding of the antecedents of culturally-relevant cognition such as cultural awareness and identity; and psychological and behavioral reactions to violations of cultural norms, including cultural and individual differences that moderate such reactions.
   b. Develop theories to explain how or why real or perceived differences in culture (e.g., organizational, national) are associated with differences in relevant outcomes such as attitudes, cohesion, or performance.

III. Assessing culture and understanding cultural change
   a. Develop improved methods for assessing culture that integrate methods from psychology, sociology, ethnography, and anthropology. These methods should include or address concepts such as situation strength, cultural memes, cultural artifacts, norms, beliefs, and behaviors.
   b. Identify the sources of change in culture and enculturation and relevant social processes across different levels and time scales, including the effects of formal organizational structures and leadership.
   c. Improve the understanding of how aspects of culture at various levels may influence individual and group resilience and adaptability.

High Priority Research Questions:

- To what extent do organizational cultures and subcultures arise from (or are prevented from arising by) selection/attrition processes vs. social dynamics and leadership processes? What individual and group-level factors predict the relative importance of each for different aspects of culture across different time scales?
- Which aspects of organizational culture are associated with organizational robustness and adaptability across different types of social and task environments? What are the relevant characteristics of these environments?
- How is culture communicated and reinforced? What can leaders do to proactively influence the culture of their organization?

6. Psychophysiology of Individual Differences

Overview:

The formal study of how social, psychological, and behavioral phenomena relate to physiological activity has existed for over 100 years. Recent advances in measurement technology, such as compact sensors resting on the skin surface to non-invasively record internal body functioning and neuroimaging devices to assess brain activity and statistical approaches have led to a proliferation of research on the interrelationships of the mind and body. Examining key areas of significant promise is central to maximizing the usefulness of research from this domain. The great emergence of scientific potential from this discipline has not yet been fully harnessed by the Army, particularly in understanding and improving the cognitive and behavioral capabilities of the Soldier. Fundamental research in the psychophysiological underpinnings of behavior and individual differences holds promise for making innovative strides in personnel testing, training, and leader development, specifically advancing the understanding of the underlying basis of why people think and behave differently, to enhance the performance, resilience and readiness of the force. In the simplest terms, the central focus of this domain is the identification and understanding of what happens or exists inside the brain and body that gives rise to variations between people which lead others to label some individuals as ‘smart’, ‘empathetic’, ‘sociable’, or ‘extraverted’ among other characteristics.

The goal of research in this area is to understand underlying physiological dissimilarities that give rise to observable individual differences in behavior and identify useful biological correlates for psychological constructs with an emphasis on psychological primitives, while advancing understanding of the theoretical framework linking internal body functions to cognitive processes.

Objectives:

I. Individual Differences
   a. Advance fundamental understanding of physiological processes, both central (e.g., brain activity) and peripheral (e.g., muscle tension, heart rate), associated with distinct cognitive, affective, and motivational characteristics of individuals.

b. Identify and/or explicate measureable biological and neurological correlates (emphasis on activity and function, not location) of psychological individual differences with the intent of improving the understanding of human behavior.

II. A Theory of the Human Mind

a. Advance the theory of mind to elucidate the theoretical meaning of physiological activity from a psychological perspective, with particular emphasis on developing a broad theoretical framework connecting physiological function to psychological concepts (e.g., motivation, cognition, affect).
b. Refine existing theory of individual differences (e.g., temperament, affect, resilience, ability, and aptitude) to link traditional psychological theory with the biological and neurological basis of individual variation, as well as explore the fundamental relationships among classes of individual differences.

High Priority Research Questions:

- What are the physiological bases of affect and affect cognition, and how can understanding the neurophysiologic underpinnings lead to prediction of how emotions influence actions and cognitions?
- Are there psychophysiological indicators of individual differences related to core military skills (e.g., "Shoot", "Move" and associated individual differences in fine motor control, eye-hand coordination, and spatial ability); and, if so, how can these be used to make inferences about performance?
- Are there reliable psychophysiological indicators of resilience and how can these be used to make inferences about performance?

II-B: AWARD INFORMATION

The Army Contracting Command- Aberdeen Proving Ground, RTP Division has the authority to award a variety of instruments. The ACC (APG) RTP Division reserves the right to use the type of instrument most appropriate for the effort proposed. Offerors 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.

   This instrument is appropriate for basic, applied, or advanced research awards when the principal purpose 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.

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.

   This instrument is appropriate for basic research awards when 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. No substantial involvement is expected between the Department of Defense and the award recipient when carrying out the grant activity.

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.

   This instrument is appropriate for basic, applied, or advanced research awards when 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. Substantial involvement is expected between the Department of Defense and the award recipient when carrying out the cooperative agreement activity.

   Grants and cooperative agreements are currently governed by the guidance in 2 Code of Federal Regulations (CFR) Part 200, "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards," as modified and supplemented by the Department of Defense's (DoD) interim implementation found at 2 CFR Part 1103, "Interim Grants and Cooperative Agreements Implementation of Guidance in 2 CFR Part 200" (79 FR 76047, December 19, 2014).

4. **Technology Investment Agreement (TIA) Assistance Transaction other than a Grant or Cooperative Agreement:** A legal instrument, consistent with 10 U.S.C. 2371 and as implemented by 32 CFR Part 37, which may be used when the use of a contract, grant, or cooperative agreement is not feasible or appropriate for basic, applied, and advanced research projects. The research covered under a TIA shall not be duplicative of research being conducted under an existing DoD program. To the maximum extent practicable, TIA's shall provide for a 50/50 cost share between the Government and the Offeror. An Offeror's cost share may take the form of cash, independent research and development (IR&D), foregone intellectual property rights, equipment, or access to unique facilities, as well as others. Due to the extent of cost share, and the fact that an 'other transaction' does not qualify as a "funding agreement" as defined at 37 CFR 401.2(a), the intellectual property provisions of a TIA can be negotiated to provide expanded protection to an Offeror's intellectual property. No fee or profit is allowed.

5. **Other Transaction for Prototype (OTA):** A legal instrument, consistent with 10 U.S.C. 2371 (as authorized by Public Law 106-398, Section 803 and Public Law 103-160, Section 845), which may be used when the use of a contract, grant, or cooperative agreement is not feasible or appropriate for prototype projects directly relevant to weapons or weapon systems proposed to be acquired or developed by the DoD. The effort covered under an 'other transaction for prototype' shall not be duplicative of effort being conducted under an existing DoD program (please refer to the "Other Transactions" OT Guide for Prototype Projects at www.acq.osd.mil/dpap/Docs/otguide.doc).

II-C: ELIGIBILITY INFORMATION

1. Eligible Applicants:

Proposals are sought from educational institutions, non-profit/not-for-profit organizations, and commercial organizations, domestic or foreign, for research and development (R&D) in those areas specified in Part II Section A of this BAA. The U.S. Army Research Institute for the Behavioral and Social Sciences encourages Historically Black Colleges and Universities/ Other Minority Serving Institutions (HBCU/MI) (FAR Part 26.3) small businesses, and small disadvantaged businesses (FAR Part 19) to submit proposals for consideration. 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. However, they may be able to participate as subcontractors or subrecipients (eligibility will be determined on a case by case basis). If a proposal selected for award includes one or more subawards to a Government laboratory, Federally Funded Research and Development Center, or U.S. Service Academy, award funds allocated for Government laboratories, FFRDCs,

and/or U.S. Service Academies will be directly provided from ARI to the 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 to a Government laboratory, FFRDC, or U.S. Service Academy subawardee.

2. Cost Sharing or Matching:

There is no required cost sharing, matching, or cost participation by an Offeror to be eligible under this BAA. However, Offerors are encouraged to consider cost sharing schemes in cooperation with ARI.

3. Duns and Bradstreet Universal Numbering System (DUNS) Number and System for Award Management (SAM) Registrations:

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.

II-D: APPLICATION AND SUBMISSION INFORMATION

1. Address to View Broad Agency Announcement:

This BAA may be accessed from the following websites:

https://www.fbo.gov

http://www.grants.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 Offeror 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@mail.mil prior to the proposal's 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, Offerors' use of color in proposals should be minimal and used only when necessary for details. Do not use color if it is not necessary.

Government Property/Government Furnished Equipment and Facilities: Normally, title to equipment or other tangible property purchased with Government funds vests with non-profit institutions of higher education or with non-profit research organizations if vesting will facilitate scientific research performed for the Government. Commercial organizations are expected to possess the necessary plant facilities and equipment to conduct the proposed research. Deviations may be made on a case-by-case basis. Government equipment, research facilities, and operational military units may be available and may be considered as potential Government-furnished equipment/facilities. An Offeror should explain, as part of their proposal, if any Government resources could be useful to the success of a proposed project.

Continuation Projects: A proposal for continuation of an existing ARI award will be considered on the same basis as proposals for new awards. The proposal should be submitted sufficiently in advance of the completion of the existing award so that if it is accepted, support may be continued without interruption.

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 a prospective Offeror believes a conflict of interest may exist, the situation should be discussed with the ARI legal counsel, Ms. Peggy Gieseking, (410) 278-6487, peggy.l.gieseking.civ@mail.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?Action=29&Page=218#baaforms. 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:

> The 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 Offeror 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 these

data if they are obtained from another source without restriction. The data subject to this restriction are contained in sheets _____.

The Offeror shall also mark each sheet of data it wished 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- Verify the accuracy of your Dun & Bradstreet (D&B) registration at the D&B website http://fedgov.dnb.com/webform before registering with the System for Award Management (SAM) Registration at https://www.sam.gov. Prospective Offerors must be registered in SAM prior to award.

Stage 2 - Prospective proposers are 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. Feedback on a white paper will be provided to the proposer regarding the concept's scientific merit and potential contributions to the Army mission.

Stage 3 - Interested Offerors are required to submit full proposals. All proposals submitted under the terms and conditions cited in this BAA will be reviewed regardless of the feedback on, or lack of, a white paper.

Section 3 – White Paper Preparation:

White Papers (formally referred to as "Concept Papers" in prior BAAs) 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 the 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 Papers must reference the specific research areas found on page 6, sect II-A-1, (e.g. II-A, "Basic Research Areas of Interest" listed Domains 1-6).

White Papers are limited to six (6) pages plus the cover page and an addendum with brief (300 word max) bio-sketches of the key personnel as discussed below. Combine all files and forms into a single PDF file or Word document before submitting. Reviewers will only review the White Paper cover page and up to six pages plus the addendum.

TECHNICAL INFORMATION FOR WHITE PAPERS:

1. A detailed discussion of the effort's scientific research objectives, approach, relationship to similar research, level of effort, and estimate of total cost shall be submitted. Also, include the nature and extent of the anticipated results and, if known, the manner in which the work will contribute to the accomplishment of Army's mission and how this would be demonstrated.

2. The type of support, if any, that the Offeror 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). Offerors 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.

3. As an addendum to the white paper, include a biographical sketch (up to 300 words) for each of the 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. Any proprietary data that the Offeror intends to be used only by the Government for feedback purposes must be identified. The Offeror must also identify any data contained in the white paper that is to be treated by the Government as limited rights in technical data and restricted rights in computer software. In the absence of such identification, the Government will assume to have unlimited rights to all data in the white paper. Records or data bearing a restrictive legend may be included in the white paper. It is the intent of the Army to treat all white papers as privileged information before the award and to disclose their contents only for the purpose of providing feedback. Care must be exercised to ensure that classified, sensitive, critical technologies are not included. If such information is required, appropriate restrictive markings and procedures should be applied.

2. The Offerors are cautioned, however, that portions of the white papers may be subject to release under terms of the Freedom of Information Act, 5 U.S.C. 552, as amended.

Section 4 – White Paper Submission:

1. A white paper of the proposed effort may be submitted to:

   Stefanie A. Plemmons (703) 545-2346 at the following e-mail address: (preferred) stefanie.a.plemmons.civ@mail.mil, with e-mail subject line "ARI FSRU BAA W911NF-15-R-0007 White Paper" addressing specific technical area(s) of basic research and an estimate of proposed cost (see page 8, Part II Section A of this BAA),

OR via U.S. Postal Service at:

U.S. Army Research Institute
ATTN: DAPE-ARI-FS (Stefanie A. Plemmons)
6000 6th Street-Building 1464
FT Belvoir, VA 22060-5610

Do NOT send any correspondence to the postal address above by any means other than the U.S. Postal Service, as it will not be delivered.

2. Offerors preparing a White Paper for submission may follow any convenient format desired as long as you follow guidance above in Section 3, "White Paper Submission."

Note: Please enclose an e-mail address and a telephone number where you can be reached. Please submit white papers no later than 3 April 2015. White papers submitted later than this date are not guaranteed a review or response.

Section 5 – Preparation of Complete Research Proposals:

PROPOSAL PREPARATION INSTRUCTIONS:

General Information: The proposal is the only vehicle available to the Offeror 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 proposal must be accompanied by a fully supported cost proposal as cost and technical considerations are reviewed simultaneously. In preparing proposals, it is important that the Offeror keep in mind the characteristics of a suitable proposal acceptable for formal evaluation. A proposal should include all the information specified in this announcement in order to receive full consideration. All proposals must include:

1. An Abstract, Background, Application Potential, Technical Approach, Reference List, Curriculum Vitae/Resumes of proposed researchers, and cost proposal, 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, time frames for all phases of the project, and detailed accounts of proposed work and cost by task.

4. Offerors are requested to provide the name, address, and phone number of their cognizant Defense Contract Audit Agency (DCAA) office, if known. All Offerors must be

registered in the System for Award Management (SAM) before an award can be made. Offerors must also provide their DUNS number (Duns and Bradstreet Data Universal Numbering System).

Proposals should be very well written, and author 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. (see pg. 37)

Proposal Format and Content: To ensure all technical proposals receive proper consideration, the Government-recommended proposal format shown below (Volume I Technical Proposal) should be followed as closely as possible. This format can most easily be incorporated as the proposal table of contents and serves as a final checklist as well. Proposals must reference at least one of the six domains for basic research (See Sect II A, page 6).

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

- Page Size – 8 ½ x 11 inches
- Margins – 1 inch
- Spacing – single
- Font – Times New Roman, 12 point

Note: The Abstract, Background, Application Potential, Technical Approach sections of the proposals, including any appendices, tables, or figures, must be no greater than 23 pages in length. (The cover page, table of contents, proposal reference list, curriculum vitae, cost proposal and institutional information are not included in the 23-page limit). **Reviewers will not review any pages beyond the 23-page limit.**

VOLUME I – RESEARCH PROPOSAL OUTLINE

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

VOLUME II – COST PROPOSAL

NOTE: USE THE ABOVE DECIMAL NUMBERING SYSTEM FOR PROPOSAL PREPARATION.

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 Complete Research Proposals)

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

Note: If an Offeror elects to submit a contract proposal via Grants.gov instead of via 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 1-6), 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. 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], Federal agencies shall obtain each awardee's Taxpayer Identification Number (TIN). This number may be the Employer Identification Number (EIN) for a business or non-profit entity or the Social Security Number for an individual. The TIN is being obtained for purposes of collecting and reporting on any delinquent amounts that may arise out of an awardee's relationship with the Government.

Offerors shall provide their organization's Data Universal Numbering System (DUNS) number. The DUNS number is a nine-digit number assigned by Dun and Bradstreet Information Services.

Offerors shall 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 Offeror follow the above table of contents (Volume I, "Research Proposal Outline") and use it for a final quality-control checklist.

iii. Abstract: The abstract allows the Offeror 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 OMB circular A-11), it should be relevant to the Army mission, and ideally would be considered use-inspired basic research[1]. The basic research proposal should describe how possible results may support research that would be meaningful to the Army. Authors should reference the most relevant sections of the BAA and link these sections to the proposed effort. Authors 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 method. 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 are available in the research literature for analysis. It is possible that an intermediate or final product of research will include training packages, simulation models, or other software-based devices. In this case, 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. This plan 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: Any good technology discussion must present the basis for and reference the findings cited in the literature. 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 6th Edition.

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[1] Stokes, D. E. (1997). *Pasteur's Quadrant: Basic Science and Technological Innovation*. Brookings Institute Press: Washington, DC.

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.

VOLUME II – COST PROPOSAL

The cost proposal must estimate the total cost broken down by month for the duration of the basic research proposal. The cost proposal must also list the number of person hours per year and the total amount for the life of the award broken out by personnel type: senior scientist/full associate or assistant professor, post doc or research associate, graduate student or undergraduate student, information technology personnel, administrative personnel, etc.; the rate per hour for each such category; describe miscellaneous expenses; and justify the need for these personnel. All Offerors should budget one trip each 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. Offerors who are outside the Washington, DC area should plan these trips for the ARI offices at Ft. Belvoir, VA. Offerors who are in the Washington, DC area should cost these trips using Kansas City, Missouri as the destination for cost estimation purposes.

The cost proposal 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. Note that the cost proposal should clearly and closely align with the planned methodology presented in the technical approach section. The estimate should be detailed for each task of the proposed work and should include the following information and all supporting documentation:

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 (**Note: Profit/Fee not allowed for assistance awards or TIAs**.)

COST PROPOSAL PREPARATION:

1. Cost Reimbursement or Fixed Price Award (**Contracts Only**): 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 Offeror's cost experience in performing the contract. Offerors 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.

2. Cost Proposal Content: Cost proposals should represent an Offeror's best response to the solicitation. 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 Offeror's lack of understanding of the nature and scope of the work required. Accordingly, cost proposals must be sufficient to establish the reasonableness and realism of the proposed cost/price. Further, any modifications made to the initial proposal 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 proposal 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 proposal is not necessary or desired. If computer-generated data is essential to support the cost proposal, it may be submitted as an addendum and must be clearly cross-referenced to the material it supports in the cost proposal.

   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 request 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 proposal 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 item should be explained clearly.

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

Assistance Awards & TIAs:	2 CFR Part 200
Contracts:	FAR Part 31, DFARS Part 231, FAR Subsection 15.403-5, and DFARS Subsection 215.403-5

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

<u>The following specific information is required</u>:

1. Summary by cost element and profit or fee for total proposal (**Note: Profit/Fee not allowed for assistance awards or TIAs**.)

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 Offeror's price/cost analysis of subcontractor's proposal (if subcontract was not competed, include justification)

3. Subcontractor Cost Proposals: Subcontractors' 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 Offeror, it is Offeror's responsibility to see that the subcontractor simultaneously submits a complete detailed proposal properly identified directly to the Government Contracting or Grants Officer. An Offeror'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 6 – Submission of Complete Research Proposals:

Proposals must be submitted through the Offeror'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-15-R-0007 (ATTN: Maria D. Nelson) along with the name of the basic research scientific area of interest(s) (see Part II Section A of this BAA). Offerors 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: stefanie.a.plemmons.civ@mail.mil.

CONTRACT PROPOSAL SUBMISSION:

Proposals for contracts may be e-mailed directly to usarmy.rtp.aro.mbx.baa@mail.mil or submitted online via Grants.gov, http://grants.gov.

Requests for waiver of electronic submission may be submitted as follows:

1) via e-mail to usarmy.rtp.aro.mbx.baa@mail.mil or

2) via regular mail at the following address:

Army Research Office
ATTN: RDRL-RO (Proposal Processing)
P.O. Box 12211, RTP, NC 27709-2211

E-MAIL SUBMISSION (for contract proposals only)

a. Proposals for contracts may be e-mailed directly to **usarmy.rtp.aro.mbx.baa@mail.mil.** Please e-mail a courtesy copy of full proposals to **stefanie.a.plemmons.civ@mail.mil**. **All submissions must include "ARI FSRU BAA W911NF-15-R-0007" in the subject line.**

   All e-mailed proposals must contain the information outlined in Section II, D, 2 (Section 5- Preparation of Complete Research 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. Under the 'Business' section, select 'Broad Agency Announcements' and then 'Forms- BAA.'

b. 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.

Proposals are to be provided in electronic MS Word or Adobe PDF format. The proposal must include the complete technical and cost sections of the proposal. Electronic versions of the technical and cost sections 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 Offeror, the Government Procurement Contracting Officer must be provided a signed copy prior to award if selected.

GRANT AND COOPERATIVE AGREEMENT PROPOSAL SUBMISSION:

GRANTS.GOV SUBMISSION (mandatory submission portal for grant and cooperative agreement proposals; optional submission portal for contract proposals)

a. Grants.gov registration (see Section 7 below) must be accomplished prior to application through this process.

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

b. Specific forms are required for submission of a proposal via Grants.gov. The forms are contained in the Application Package available through the Grants.gov application process. The following documents are mandatory: (1) Application for Federal Assistance (Research and Related) (SF 424 (R&R)), and (2) Attachments Form.

(1) The SF 424 (R&R) Form is to be used as the cover page for all proposals. Authorized Organization Representative (AOR) usernames and passwords serve as "electronic signatures" when your organization submits applications through Grants.gov. By using the SF 424 (R&R), Offerors are providing the certification required by 32 CFR Part 28 regarding lobbying. The SF 424 (R&R) must be fully completed. Block 11, "Descriptive Title of Applicant's Project," must reference the research topic area(s) being addressed in the effort by identifying the specific paragraph from Part II Section A of this BAA (one or more of six basic research "domains")

(2) The Attachments Form must contain the information outlined in Section II, D, 2 (Section 5- Preparation of Complete Research 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

Under the 'Business' section, select 'Broad Agency Announcements' and then 'Forms- BAA.'

The fillable PDF forms may be saved to a working directory on a computer and opened and filled in using the latest compatible Adobe Reader software application recommended per the Grants.gov website.

(3) All documents must be combined into a single PDF formatted file titled "W911NF-15-R-0007 Proposal" and uploaded into the mandatory Attachments Form.

(4) If you encounter any problems, contact customer support at 1-800-518-4726 or at support@grants.gov.

(5) 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 deadlines established 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.

Section 7 – Grants.Gov Registration:

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 Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the System for Award Management (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 the 'Appplicants' link from the Grants.gov homepage.

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.

3. Submission Dates and Times:

White papers will be considered from the issuance of this BAA until **3 April 2015**. Full proposals will be considered from the issuance of this BAA until **5 June 2015.**

4. Intergovernmental Review:

Not Applicable

5. Funding Restrictions:

There are no funding restrictions associated with this BAA.

6. Other Submission Requirements:

Information to be Requested from Successful Offerors: Offerors 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.

II-E: APPLICATION REVIEW INFORMATION

1. Criteria:

Proposals will initially be evaluated as to whether they constitute basic or applied research. Proposals for applied research will not be considered further.

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.

(a) The overall scientific and/or technical merits of the proposal
(b) Importance of the research to ARI's mission and Army concerns
(c) Originality, innovativeness, and multi-disciplinarity of the proposed research
(d) Scientific significance and potential impact on the scientific field
(e) The qualifications, capabilities, and experience of the proposed principal investigator and key personnel, and institutional resources and facilities (this dimension will not be rated for Early Career proposals)
(f) Realism, affordability, and appropriateness of proposed costs

Each factor/criterion, as well as the overall proposal, will be given a letter grade between A and F as described below:

A-Outstanding, of the highest quality
B-Good, but could be improved
C-Average
D-Below average
F-Totally inadequate and without merit

2. Review and Selection Process:

a. Upon receipt of a proposal, the ARI staff will perform an initial review of whether the proposed research is appropriately classified as basic research, and whether it is at relevant to Army needs. Proposals not considered to be appropriately classified as basic research or of insufficient relevance to the Army's needs may be declined without further review.

b. All proposals are treated as privileged information prior to award and the contents are disclosed only for the purpose of evaluation. Proposals not declined as a result of an initial review will be subject to an extensive peer review by highly qualified scientists. The Offeror 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.

c. Each proposal will be evaluated against the evaluation criteria stated above.

d. Early Career proposals will be evaluated on their merits, except for the experience of the Principal Investigator, and relevance to the overall basic research program.

3. Recipient Qualification:

For CONTRACT Proposals:

The Federal Awardee Performance and Integrity Information System (FAPIIS), https://www.fapiis.gov/fapiis/index.jsp, will be checked prior to making a contract award. The applicant representing the entity may comment in this system on any information about itself 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.

II-F: AWARD ADMINISTRATION INFORMATION

1. Award Notices:

Offerors whose proposals are recommended for award will be contacted by a Government Contract/Grant Specialist to discuss any additional information required for award. Additional information required may include representations and certifications, revised budgets or budget explanations, certificate of current cost or pricing data, subcontracting plan for small businesses, and other information as applicable to the proposed award. The anticipated award start date will be determined at this time. The appropriate award document, when signed by the Government Contracting/Grants Officer, is the authorizing award document.

2. Administrative and National Policy Requirements:

a. Required Certifications

For CONTRACT Proposals:

Certifications Required for Contract Awards: Certifications and representations shall be completed by successful Offerors prior to award. These certifications and representations shall be completed online via the System for Award Management (SAM) website, https://www.sam.gov.

For GRANT and COOPERATIVE AGREEMENT Proposals:

Grant awards greater than $100,000.00 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. The certification is set forth at Appendix A to 32 CFR 28 regarding lobbying. When submitting a grant or cooperative agreement proposal through Grants.gov, by completing blocks 18 and 19 of the Standard Form 424 Research and Related (R&R) Form, the applicant is providing the certification on lobbying required by 32 CFR Part 28. Otherwise, a copy of the certification signed by the authorized representative 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 Standard Form-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 Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000.00 and not more than $100,000.00 for each such failure.

b. Policy Requirements

1) HUMAN SUBJECTS:

Assistance Instruments Only (Grants and Cooperative Agreements): By accepting funds under this award, the Recipient assures that it will comply with applicable provisions of the Common Federal Policy for the Protection of Human Subjects codified by the Department of Health and Human Services at 45 CFR Part 46 and implemented by the Department of Defense at 32 CFR Part 219 and DoD Directive 3216.02, Protection of Human Subjects and Adherence to Ethical Standards in DoD Supported Research.

Additionally, the Recipient will be required to comply with 48 CFR 252.235-7004, Protection of Human Subjects, and the applicable provisions of ARI Procedures Memo, “Use of Human Subjects in Research.” No research involving human subjects will be conducted until the research protocol has been approved by the ARI Institutional Review Board (IRB) and the Human Research Protection Official (HRPO) and both approvals have been provided to the Grants/Contracting Officer. **If the Recipient has its own in-house human subjects IRB committee, it must be used in addition to the ARI Institutional Review Board.** The Recipient must submit the complete results of its in-house human use committee findings to the ARI Cooperative Agreement Manager (CAM) immediately upon their receipt and before actual research involving use of human subjects begins.

The Principal Investigator will notify the Grants/Contracting Officer within 24 hours if any of the following occur: (i) the protocol is suspended; (ii) a death occurs as a consequence of the research protocol; or (iii) a life-threatening, adverse event occurs as a consequence of the research protocol.

(a) Definitions-

(1) “Assurance of compliance” means a written assurance that an institution will comply with requirements of 32 CFR Part 219, as well as the terms of the assurance, which the Human Research Protection Official determines to be appropriate for the research supported by the Department of Defense (DoD) component (32 CFR 219.103).

(2) “Human Research Protection Official (HRPO)” means the individual designated by the head of the applicable DoD component and identified in the component’s Human Research Protection Management Plan as the official who is responsible for the oversight and execution of the requirements of this clause, although some DoD components may use a different title for this position.

(3) “Human subject” means a living individual about whom an investigator (whether professional or student) conducting research obtains data through intervention or interaction with the individual, or identifiable private information (32 CFR 219.102(f)). For example, this could include the use of human organs, tissue, and body fluids from individually identifiable living human subjects as well as graphic, written, or recorded information derived from individually identifiable living human subjects.

(4) “Institution” means any public or private entity or agency (32 CFR 219.102(b)).

(5) “Institutional Review Board (IRB)” means a board established for the purposes expressed in 32 CFR Part 219 (32 CFR 219.102(g)).

(6) “IRB approval” means the determination of the IRB that the research has been reviewed and may be conducted at an institution within the constraints set forth by the IRB and by other institutional and Federal requirements (32 CFR 219.102(h)).

(7) “Research” means a systematic investigation, including research, development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. Activities that meet this definition constitute research for purposes of 32 CFR Part 219, whether or not they are conducted or supported under a program that is considered research for other purposes. For example, some demonstration and service programs may include research activities (32 CFR 219.102(d)).

(b) The Recipient shall oversee the execution of the research to ensure compliance with this clause. The Recipient shall comply fully with 32 CFR Part 219 and DoD Directive 3216.02, applicable DoD component policies, 10 U.S.C. 980, and, when applicable, Food and Drug Administration policies and regulations.

(c) The Recipient shall not commence performance of research involving human subjects that is covered under 32 CFR Part 219 or that meets exemption criteria under 32 CFR 219.101(b), or expend funding on such effort, until and unless the conditions of either the following paragraph (c)(1) or (c)(2) have been met:

(1) The Recipient furnishes to the HRPO, with a copy to the Grants/Contracting Officer, an assurance of compliance and IRB approval and receives notification from the Grants/Contracting

Officer that the HRPO has approved the assurance as appropriate for the research under the Statement of Work/Performance Work Statement and also that the HRPO has reviewed the protocol and accepted the IRB approval for compliance with the DoD component policies. The Recipient may furnish evidence of an existing assurance of compliance for acceptance by the HRPO, if an appropriate assurance has been approved in connection with previous research. The Recipient shall notify the Grants/Contracting Officer immediately of any suspensions or terminations of the assurance.

(2) The Recipient furnishes to the HRPO, with a copy to the Grants/Contracting Officer, a determination that the human research proposed meets exemption criteria in 32 CFR 219.101(b) and receives written notification from the Grants/Contracting Officer that the exemption is determined acceptable. The determination shall include citation of the exemption category under 32 CFR 219.101(b) and a rationale statement. In the event of a disagreement regarding the Recipient's furnished exemption determination, the HRPO retains final judgment on what research activities or classes of research are covered or are exempt under the Agreement.

(d) 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 procedures.

(e) Failure of the Recipient to comply with the requirements of this clause will result in termination of the Agreement, in whole or in part, or will result in the issuance of suspension of work and further payment for as long as determined necessary at the discretion of the Grants/Contracting Officer.

(f) The Recipient shall include the substance of this clause, including this paragraph (f), in all subawards that may include research involving human subjects in accordance with 32 CFR Part 219, DoD Directive 3216.02, and 10 U.S.C. 980, including research that meets exemption criteria under 32 CFR 219.101(b). This clause does not apply to subawards that involve only the use of cadaver materials.

For Contracts, the appropriate Defense Federal Acquisition Regulations Supplement (DFARS) clause, 48 CFR 252.235-7004 - Protection of Human Subjects (July 2009), shall be added.

2) ANIMAL SUBJECTS:

Assistance Instruments Only (Grants and Cooperative Agreements): By accepting funds under this agreement, the Recipient assures that it will comply with applicable provisions of the following national policies concerning the use of live animals: the Laboratory Animal Welfare Act of 1966 (7 U.S.C. 2131-2156) as implemented by Department of Agriculture rules on animal acquisition, transport, care, handling, and use in 9 CFR Parts 1-4; DoDI 3216.01; AR 40-33 and guidelines in the National Research Council "Guide for the Care and Use of Laboratory

Animals" (1996), including the Public Health Service Policy and Government Principles Regarding the Care and Use of Animals in Appendix D to the guide.

Notwithstanding any other provision contained in this award or incorporated by reference herein, the Recipient is expressly forbidden to use or subcontract for the use of laboratory animals in any manner whatsoever without the prior express written approval of the applicable protocol proposed for this award as required by AR 40-33 in addition to the institution's approval. Non-compliance with this provision may result in withholding of funds and/or termination of the award.

The Principal Investigator will notify the Army and technical representatives within 24 hours if any of the following occur: (1) the protocol is suspended; or (2) a life-threatening, adverse event occurs as a consequence of the research protocol.

For Contracts, the appropriate Defense Federal Acquisition Regulations Supplement (DFARS) clause, 252.235-7002- Animal Welfare (December 2014), shall be added.

3) MILITARY RECRUITING:

Assistance Instruments Only (Grants and Cooperative Agreements): This is to notify potential Offerors that each in accordance with 32 CFR 22.520 grant or cooperative agreement awarded under this announcement to an institution of higher education must include the following term and condition:

"As a condition for receipt of funds available to the Department of Defense (DoD) under this award, the recipient agrees that it is 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:

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

(B) 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;

(C) 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

(D) 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 subelement 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.

If the recipient is determined, using the procedures in 32 CFR part 216, to be such an institution of higher education during the period of performance of this agreement, the Government will cease all payments of DoD funds under this agreement and all other DoD grants and cooperative agreements to the recipient, and it may suspend or terminate such grants and agreements unilaterally for material failure to comply with the terms and conditions of award."

For Contracts Only: This is to notify potential Offerors that each contract awarded under this announcement to an institution of higher education shall include the following clause: Defense Federal Acquisition Regulation Supplement (DFARS) clause 252.209-7005, Military Recruiting on Campus.

4) SUBCONTRACTING:

For Contracts Only: This section is applicable to contracts where the dollar threshold is expected to exceed to $650,000.00. 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 concerns to be considered fairly as subcontractors under all research agreements awarded to prime contractors. The required elements of the Subcontracting Plan are set forth by FAR 52.219-9 and DFARS 252.219-7003. The Offeror's plan shall depict the percentage values of the option requirements separately. The information in the Small Business Subcontracting Plan must properly correlate with that of the Offeror's Small Business Participation Plan. The Government's subcontracting goals can be found at: http://www.acq.osd.mil/osbp/statistics/sbProgramGoals.shtml.

3. Reporting:

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 three months 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 activities and expenditures during the prior quarter, as well as highlighting challenges and difficulties encountered.
c. Annual Interim Progress Review Briefing: Meeting to be conducted once a year on or about the anniversary date of the award.

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.
g. Bibliometrics Update: Complete bibliometric information related to research work are due November 1st of each year, unless otherwise specified, while the award is in force.
h. 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.
i. Final Technical Report: Draft report is due no later than 2 months prior to end of award).
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 or DVD as appropriate with the final report.

5) ARMY MANPOWER CONTRACTOR REPORTING:

For Contracts Only: The Office of the Assistant Secretary of the Army (Manpower & Reserve Affairs) operates and maintains a secure Army data collection site where the contractor will report ALL contractor manpower (including subcontractor manpower) required for performance of this contract. The contractor is required to completely fill in all the information in the format using the following web address: ***http://www.ecmra.mil/*** The required information includes: (1) Contracting Office, Contracting Officer, Contracting Officer's Technical Representative; (2) Contract number, including task and delivery order number; (3) Beginning and ending dates covered by reporting period; (4) Contractor name, address, phone number, e-mail address, identity of contractor employee entering data; (5) Estimated direct labor hours (including subcontractors); (6) Estimated direct labor dollars paid this reporting period (including subcontractors); (7) Total payments (including subcontractors); (8) Predominate Federal Service Code (FSC) reflecting services provided by contractor (and separate predominant FSC for each subcontractor if different); (9) Estimated data collection cost; (10) Organizational title associated with the Unit Identification Code (UIC) for the Army Requiring Activity (the Army Requiring Activity is responsible for providing the contractor with its UIC for the purposes of reporting this information); (11) Locations where contractor and subcontractors perform the work (specified by zip code in the United States and nearest city, country, when in an overseas location, using standardized nomenclature provided on website); (12) Presence of deployment or contingency contract language; and (13) Number of contractor and subcontractor employees deployed in theater this reporting period (by country). As part of its submission, the contractor will also provide

the estimated total cost (if any) incurred to comply with this reporting requirement. The reporting period will be the period of performance not to exceed 12 months ending 30 September of each Government fiscal year and must be reported by 31 October of each calendar year. Contractors may use a direct XML data transfer to the database server or fill in the fields on the website. The XML direct transfer is a format for transferring files from a contractor's systems to the secure web site without the need for separate data entries for each required data element at the web site. The specific formats for the XML direct transfer may be downloaded from the web site.

6) DFARS PROVISIONS 252.209-7998-252.209-7999: Offerors must respond to the following certifications (Note- the required signed certifications for assistance awards (grants and cooperative agreements) will be requested by the Government Grants Officer at the time the grant or cooperative agreement is processed for award. For contract awards, the two representations below will be added to the award document or file.

DFARS 252.209-7998 REPRESENTATION REGARDING CONVICTION OF A FELONY CRIMINAL VIOLATION UNDER ANY FEDERAL OR STATE LAW (DEVIATION)

(a) In accordance with section 514 of Division H of the Consolidated Appropriations Act, 2012, none of the funds made available by that Act may be used to enter into a contract with any corporation that was convicted of a felony criminal violation under any Federal or State law within the preceding 24 months, where the awarding agency is aware of the conviction, unless the agency has considered suspension or debarment of the corporation and made a determination that this further action is not necessary to protect the interests of the Government.

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

DFARS 252.209-7999 REPRESENTATION BY CORPORATIONS REGARDING AN UNPAID DELINQUENT TAX LIABILITY OR A FELONY CONVICTION UNDER ANY FEDERAL LAW (DEVIATION)

(a) In accordance with sections 8124 and 8125 of Division A of the Consolidated Appropriations Act, 2012, (Pub. L. 112-74) none of the funds made available by that Act may be used to 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 the agency has considered suspension or debarment of the corporation and made a determination that this further action is not necessary to protect the interests of the Government.

(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 the 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 Offeror represents 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,

(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-G: AGENCY CONTACTS

Questions of a technical nature are to be directed to:

ARI (FSRU) Technical Point of Contact:
Dr. Stefanie A. Plemmons, (703) 545-2346,
stefanie.a.plemmons.civ@mail.mil

Questions of a business nature are to be directed to:

ACC (APG) RTP Division Point of Contact:
Ms. Maria D. Nelson, (919) 541-4992,
maria.d.nelson.civ@mail.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-15-R-0007.**" Additionally, the relevant part and paragraph of the Broad Agency Announcement (BAA) should be referenced.

II-H: OTHER INFORMATION

1. Samples for Reference:

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; and
(18) CAGE Code;
(19) Subcontractor information; and
(20) Proposal validity period
(21) 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 Offeror to provide various supporting documentation that assists in this determination. The Offeror'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 Offeror 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 Offeror 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

Offeror 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 Offeror's accounting system.

B) If an Offeror 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 Offeror'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 Offerors through the pre-award cost audit process, a sample cost proposal is detailed below. This sample also allows the Offeror 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 Offeror.

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 Offeror:

DIRECT LABOR:		YEAR 1			YEAR 2		
Employee Name	Labor Category	Direct Hourly Rate	Hours	Total Direct Labor	Direct Hourly Rate	Hours	Total Direct Labor
Andy Smith	Program Manager	$55.00	720.00	$39,600.00	$56.65	720.00	$40,788.00
Bryan Andrew	Senior Engineer	$40.00	672.00	$26,880.00	$41.20	672.00	$27,686.40
Cindy	Principal	$50.00	512.00	$25,600.00	$51.50	512.00	$26,368.00

Thomas	Engineer						
David Porter	Entry Level Engineer	$10.00	400.00	$4,000.00	$10.30	400.00	$4,120.00
Edward Bean	Project Administrator	$25.00	48.00	$1,200.00	$25.75	48.00	$1,236.00
				$97,280.00			**$100,198.40**

1) For this cost element, the Contracting Officer requires the Offeror 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.

2) 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., Andy 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 Offeror 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 Offeror solicits and receives quotes from two or more responsible vendors for the same or similar items or services. Based on these quotes, the Offeror selects the vendor who represents the best value to the Government. The Offeror 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 ($3,000.00). If an item's unit cost is less than or equal to $3,000.00, price competition is not necessary. However, if an item's total cost over the period of performance (unit cost * quantity is higher than $3,000.00, two or more quotes must be obtained by the Offeror.

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 Offeror 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.

b) Below is the list of Direct Material costs included in our sample proposal:

DIRECT MATERIAL COSTS:	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):	$42,315.00	$13,825.00

ii) "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 $3,000.00 (total for Year 1 + Year 2), the Offeror must be able to provide either competitive quotes received, or show that published pricing was used.

iii) "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 $3,000.00 (total for Year 1 + Year 2), the Offeror must be

able to provide either competitive quotes received, or show that published pricing was used.

iv) "Cable": Since this item is under the micro-purchase threshold of $3,000.00, competitive quotes or published pricing are not required. Simply provide documentation to show the Contracting Officer where this price came from.

v) "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 $3,000.00, so competitive quotes or published pricing documentation must be provided.

c) 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 ($3,000.00) 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.

d) When it is not possible for an Offeror 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 Offeror 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 Offeror 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: John Bowers	$0.00	$12,000.00
Travel	$1,250.00	$1,250.00
Subtotal Other Direct Costs (ODC):	$31,750.00	$18,850.00

a) "Equipment Rental for Analysis": The Offeror explains that the Year 1 cost of $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 Offeror is able to furnish another invoice charging a second vendor the same price for the same service.

b) "Subcontractor – Lockheed": The Offeror 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 Offeror.

c) "Consultant – John Bowers": Again, the Offeror 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 Offeror 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 Offeror 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 Offeror 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	per roundtrip	1	1			$996.00	$996.00
Lodging	per day	1	1	1		$75.00	$75.00
Tax on 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		2	$41.00	$82.00
Subtotal Travel							$1,250.00

D) Indirect Rates: Indirect rates include elements such as Fringe Benefits, General & Administrative (G&A), Overhead, and Material Handling costs. The Offeror 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 sample proposal:

INDIRECTS	YEAR 1	YEAR 2
Subtotal Direct Labor (DL):	$97,280.00	$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 Offeror 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 Offerors have already completed such reviews and have this documentation readily available. If an Offeror is unable to participate in a DCAA review to substantiate indirect rates, the Contracting Officer may request other accounting data from the Offeror 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 Offeror is a large business or an institute of higher education (other than HBCU/MI) and the resultant award is a contract, the Offeror 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

B) 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, Offerors must provide sufficient detail to enable a determination to be made that the costs included in the forecast rate are allocable according to applicable OMB Circulars or FAR/DFARS provisions. Offerors' 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 Offeror's fiscal year

C) 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. Offerors 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 Offeror'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.

D) 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.

E) 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.

F) 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.

G) Consultant Costs: Offerors 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.

H) 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.

I) 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

J) 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.

K) 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.

L) 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.

2. Unsuccessful Proposal Disposition: Unless noted in an Offeror's proposal to the contrary, unsuccessful proposals will be retained for six (6) months from declination and then properly destroyed.

3. 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
ARO –	Army Research Office
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
OTA –	Other Transaction for Prototype
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