

W911NF-18-S-0005-FY2022

SOURCES SOUGHT NOTICE

REQUEST FOR WHITE PAPERS

BAA TOPIC A-8.c.5: IMPROVING UNIT PERFORMANCE AND COHESION IN
COMPLEX ENVIRONMENTS

“Front-End Analysis for Training Teamwork Skills and Team Processes”

INTRODUCTION

Broad Agency Announcement (BAA) W911NF-18-S-0005 was publicized on Sam.gov and [Grants.gov](https://www.grants.gov) on 1 May 2018. This Sources Sought Notice calls for White Paper submissions in reference to the BAA Topic A-8.c.5: IMPROVING UNIT PERFORMANCE AND COHESION IN COMPLEX ENVIRONMENTS. The United States Army Research Institute for the Behavioral and Social Sciences (ARI) Broad Agency announcement W911NF-18-S-0005, issued under the provisions of paragraph 6.102(d)(2) of the Federal Acquisition Regulation, provides for the competitive selection of basic and applied research and that part of development not related to the development of a specific system or hardware procurement. A Proposal submitted in response to this BAA and selected for award is 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. Funding of research and development (R&D) within ARI areas of interest will be determined by funding constraints and priorities set during each budget cycle. Any award related to the submission of a White Paper and subsequent Proposal requested by this Notice is subject to funds availability and priorities. ARI may choose not to select any new award due to unavailability of funds or other factors.

The sequence of steps leading to an award is:

- 1) Request for White Paper initiated by ARI through this Sources Sought Notice
- 2) Submission of a timely White Paper **no more than five pages in length** to the POC for the U.S. Army Contracting Command, wilveria.a.sanders.civ@army.mil, and copy furnish (CC) the ARI Technical Point of Contact (TPOC), nathanael.l.keiser.civ@army.mil.
- 3) Written or telephonic feedback provided to the Offeror regarding the White Paper’s scientific merit and potential contributions to the Army mission as per established criteria presented in Part III
- 4) If the White Paper merits it, a request of a formal proposal initiated by ARI
- 5) Submission of a timely, formal proposal
- 6) Evaluation of the formal proposal as per established criteria presented in Part III
- 7) Award for selected proposal based on availability of funds or other factors

This sequence allows earliest determination of the potential for funding and minimizes the labor and cost associated with submission of a full proposal that has minimal probability of being selected for funding. Note that an interested Offeror **must** submit a White Paper electronically in order to be eligible to submit a formal proposal under this Notice. This Notice requires that a White Paper be submitted electronically no later than **06 September 2022,, 5:00 PM Eastern Daylight Time**. See Part V, Deadlines, for additional details. BAA W911NF-18-S-0005 allows several potential instrument types (e.g., contract, grant, cooperative agreement) to result from a successful proposal. For this Notice, the intention of the Government is to award a contract.

THOSE SUBMITTING A WHITE PAPER/PROPOSAL ARE CAUTIONED THAT ONLY A GOVERNMENT CONTRACTING OR GRANTS OFFICER CAN OBLIGATE THE GOVERNMENT THROUGH AWARD OF A LEGAL INSTRUMENT INVOLVING EXPENDITURE OF GOVERNMENT FUNDS.

This Sources Sought Notice for a Requested White Paper consists of seven parts as follows:

- Part I: Research and Development Interests of the Requested White Paper
- Part II: Preparation and Submission
- Part III: Evaluation Criteria
- Part IV: Feedback
- Part V: Deadlines
- Part VI: Inquiries
- Part VII: References

ACC (APG) RTP Agency Point of Contact:

The POC for the US Army Contracting Command (Aberdeen Proving Ground) Research Triangle Park Division is: Ms. Wilveria Sanders, (919) 549-4328, wilveria.a.sanders.civ@army.mil.

ARI Agency Point of Contact:

The ARI POC for technical matters for this White Paper topic is: Dr. Nathanael (Nate) Keiser, (254) 392-8439, nathanael.l.keiser.civ@army.mil.

I. RESEARCH AND DEVELOPMENT INTERESTS OF THE REQUESTED WHITE PAPER:

The United States 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. ARI contracts with educational institutions, non-profit organizations, and private industry for research and development (R&D) in different areas, including the areas specifically identified in Paragraph 8 of W911NF-18-S-0005. Efforts funded under this White Paper request will only include Applied Research and/or Advanced Technology Development.

Applied Research provides a systematic expansion and application of knowledge to design and develop useful strategies, techniques, methods, tests, or measures that provide the means to meet a recognized and specific Army need. Applied Research precedes system specific technology investigations or development, but it should have a high potential to transition into the Advanced Technology Development (ATD) Program.

The ARI ATD Program includes the development of technologies, components, or prototypes that can be tested in field experiments and/or simulated environments. Projects in this category have a direct relevance to identified military needs. These projects should demonstrate the general military utility or cost reduction potential of technology in the areas of personnel selection, assignment, and retention; training strategies and techniques; leader education and development; performance measurement; and team and inter-organizational mission effectiveness. These projects should be focused on a more direct operational benefit and if successful, the technology should be available for transition.

WHITE PAPER TOPIC: Front-End Analysis for Training Teamwork Skills and Team Processes

Current trends suggest that the future operational environment will be characterized by an expanded battlespace across time, domains, geography, and actors, the convergence of capabilities through technology, and compression among strategic, operational, and tactical levels. Therefore, the Future Operational Environment (FOE) will present complexities not just in the operational context, but also in training. The multi-domain operations (MDO) concept requires that Army teams operate semi-independently but also utilize the capabilities across multiple domains in order to conduct sustained missions in highly contested environments. To do this, the Army needs a broad and deep research program that focuses on developing the talent of small teams as they acquire proficiency of both the critical tactical skills and the requisite team dimensions that will be required of them in the emerging operational environment.

There is a plethora of research in the teams literature on the taskwork and teamwork that are crucial to the effectiveness of teams, some of which is presumably pertinent to teams in the FOE. However, there is also considerable evidence that current teams in the Army, and in modern organizations more broadly, are vastly different from teams in the past (Jones et al., 2020; Shuffler et al., 2020). That reality is certainly not new to the teams literature; yet, despite some notable exceptions, researchers remain vetted to a traditional understanding of teams as fairly static and independent entities (Tannenbaum et al., 2012). The current state of the academic literature lacks specific practical insight about how to train Army teams to meet the dynamic complexities that they face, which is expected to become more pronounced in the FOE.

The aim of this research is to provide a front-end analysis that identifies the individual knowledge, skills, and behaviors (KSBs) and teamwork to meet the needs of the FOE. There are three main objectives of this research. The first objective is to identify critical individual and collective teamwork skills and team-level constructs that will be important for teams to form and develop, and subsequently, effectively operate in the FOE. The second objective is to conduct a training needs analysis that builds on existing efforts to identify gaps in the KSBs necessary for the effectiveness of teams in the FOE. The third and final objective is to combine the findings from the training needs analyses with current task and job analysis efforts at ARI and the Army Talent Attribute Framework to identify alterations to extant training approaches or novel approaches that align with the unique complexities of the FOE. The aim of the proposed research is to build from prior and ongoing efforts by identifying collective constructs that are trainable in a home-station training environment. The approach to accomplish those objectives will include reviews of the academic literature on teams and team training in connection with doctrine on the FOE, followed by a training needs analysis, encompassing a task, people, and organization analysis (Arthur et al., 2003; Surface, 2012). The needs analysis will include interviews, focus groups, and questionnaires with Soldiers and leaders across MOS, but likely specific to domains that are expected to

be more prevalent in the FOE (e.g., Cyber). This research will also include observations of current training in those domains.

The research is intended to produce two major products: (1) critical individual and collective teamwork skills and team processes/variables/emergent states etc. needed for the FOE, and (2) potential training approaches, suggested alterations to existing team training, or novel training for each (based on scientific literature, industry best practices, current Army approaches, etc.). White papers will be reviewed based on the rigor of their planned approach to produce those products.

The award will be approximately a 16-month (8-month base, 8-month option) period of performance with a budget not to exceed \$350,000.

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

II. PREPARATION AND SUBMISSION OF A WHITE PAPER:

Preparation of White Paper

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

A White Paper must be limited to five (5) pages plus the cover page and an addendum in which the Offeror must include a biographical sketch (up to 300 words per individual) of all key personnel (i.e., Principal Investigators and Co-Principal Investigators) who will perform the research, highlighting their qualifications and experience as discussed below. All files and forms must be compiled into a single PDF file or MS Word document before submitting. Reviewers will be advised that they are only to review the cover page and up to five pages plus the addendum. Any pages submitted in excess of the five (5) page limit will not be reviewed or evaluated.

TECHNICAL INFORMATION FOR A WHITE PAPERS:

1. Technical Approach: A detailed discussion of the effort's scientific research objectives, approach, relationship to similar research, level of effort, and estimated total cost; include the nature and extent of the anticipated results, and if known, the manner in which the work will contribute to the accomplishment of the Army's mission related to this request and how this would be demonstrated.
2. Requests for Government Support: 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). Offeror 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. Key Personnel Biographical Information: As an addendum to the White Paper, the Offeror must include a biographical sketch (up to 300 words per individual) of all key personnel (i.e., Principal Investigators and Co-Principal Investigators) who will perform the research, highlighting their qualifications and experience.

RESTRICTIVE MARKINGS ON WHITE PAPERS:

1. The Offeror must identify any proprietary data the Offeror intends to be used only by the Government. The Offeror must also identify any technical data or computer software contained in the White Paper that is to be treated by the Government as limited rights or restricted rights respectively. In the absence of such identification, the Government will assume to have unlimited rights to all technical data or computer software presented in the White Paper. Records or data bearing a restrictive legend may be included in the White Paper, but must be clearly marked. It is the intent of the Army to treat all White Papers as procurement sensitive information before the award and to disclose their contents only to Government employees or designated support contractors for the purpose of procurement related activities only. Classified, sensitive, or critical information on technologies should not be included in a White Paper.

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

Submission of White Paper

White Papers must be submitted by e-mail to the POC for the U.S. Army Contracting Command, wilveria.a.sanders.civ@army.mil, and cc'd to the ARI Point of Contact (POC), nathanael.l.keiser.civ@army.mil, in electronic MS Word document format or PDF file format. **Cite “ARI BAA W911NF-18-S-0005Y, Front-End Analysis for Training Teamwork Skills and Team Processes” in the e-mail subject line.**

III. EVALUATION CRITERIA:

A White Papers and full Proposals received in response to this request will be evaluated by the ARI designated point of contact identified in this request using the following factors/criteria:

1. Overall scientific and/or technical merits of the proposed research: The Offeror must demonstrate a thorough understanding of the research problem and articulate a clear approach to addressing the research objectives. The proposed approach must be based on feasible and realistic scientific methods and provide the Government with a high level of confidence of successful completion within proposed timeline.
2. Potential contributions of the effort to the U.S. Army Research Institute’s mission: In addition to showing how the proposed research aligns with the solicited topic, the Offeror must also specify how the proposed research will contribute to or advance the current U.S. Army Research Institute’s behavioral and social science research mission.
3. The Offeror’s capabilities, related experience, facilities, techniques or unique combination of these which are integral factors for achieving the proposed research objectives: the Offeror must demonstrate relevant organizational capabilities [e.g., experience, facilities, techniques] beyond individual capability to ensure the proposed research objectives can be achieved by the organization as a whole.
4. The qualifications, capabilities, and experience of the proposed Principal Investigator and other key personnel who are critical to the achievement of the proposed research objectives: The Offeror must demonstrate that the key personnel have the education and experience necessary to successfully complete the research objectives. Personnel capabilities need to be aligned with the expertise needed to achieve the required research objectives.
5. The Offeror’s record of past performance: Past performance information obtained from the Offeror’s White Paper, centralized past performance databases, and other sources will be used to evaluate past performance on projects of similar size, scope, and complexity to determine timely compliance with Government specifications. For an Offeror with no relevant past performance, the Government may take into account information regarding the past performance of predecessor companies, subcontractors, or proposed personnel that will perform key aspects of the proposed research.
6. Realism, affordability, and appropriateness of proposed costs: The Offeror must demonstrate that the proposed costs are appropriate given the suggested research approach. The Government will also evaluate the proposed costs in relation to the scope of the research objectives and the U.S. Army Research Institute’s budget.

7. Current and/or future relationship or interface with ongoing activities in academia and/or industry: The Offeror must demonstrate how the research findings and/or products could inform current or future scientific research, impact industry, and/or meet Army needs and goals.

The request for a proposal will be made based on the overall evaluation of a White Paper using the seven criteria listed above. The overall scientific and/or technical merit of the proposed approach will be weighted more strongly than all of the other factors combined. A request for proposal may not necessarily be made to the lowest proposed price. During the evaluation of White Papers, ARI's POC for technical matters may request a discussion with an Offeror, but discussions are not guaranteed nor required for competition and award purposes. ARI's POC for technical matters reserves the right to evaluate a White Paper and request a proposal without discussions. The Offeror's initial submission should contain the Offeror's best terms from a technical and price standpoint. Once a full proposal has been requested, all communications must go through the POC for the U.S. Army Contracting Command.

If the White Paper evaluation results in the request and submission of a full proposal, the proposal will be evaluated by a panel of scientific peers using the same factors/criteria as those listed above under Evaluation Criteria. A request for a full proposal does not guarantee an award. The decision to award will be based on feedback from the panel, considerations presented by ARI's POC for technical matters identified in this document, and other factors like budgetary constraints. ARI may choose not to select any award due to unavailability of funds or other factors.

IV. FEEDBACK:

Written or telephonic feedback will be provided to the Offeror regarding the White Paper's scientific merit and potential contributions to the Army mission. If the Government decides to request a full proposal, a written request will be sent to the Offeror. The Written Request will, at a minimum, invite a full proposal. The request may also include feedback intended to improve the proposal's potential for award.

V. DEADLINES:

Electronic versions of the White Paper must be received by the POC for the U.S. Army Contracting Command and the ARI POC, with e-mail subject line "**ARI BAA W911NF-18-S-0005Y, Front-End Analysis for Training Teamwork Skills and Team Processes**" by e-mail no later than **5:00 PM Eastern Daylight Time on 06 September 2022,**. Any extension to the White Paper submission deadline will be posted to Sam.gov as an amendment to this Notice. Note that a timely White Paper received under this Notice will be evaluated and considered for proposal requests throughout the period beginning **06 September 2022,** and ending **06 December 2022,**. **An extension of this timeline may be granted based on the number of White Papers submitted or other factors out of the control of the designated point of contact reviewing the White Papers. An Offeror will be notified by email if the White Paper evaluation timeline is extended beyond 06 December 2022,**.

Instructions for the submission of a full Proposal will be provided by the U.S. Army Contracting Command to an Offeror invited to submit based on the evaluation of their White Paper.

An Offeror is responsible for submitting an electronic White Paper or full proposal so as to be received and accepted at the Government site indicated in this Notice no later than the date and time specified above. When sending electronic files, an Offeror shall account for potential delays in file transfer from the originator's computer to the Government website/computer server. An Offeror is encouraged to submit their response early to avoid potential file transfer delays due to high demand or problems encountered in the course of submission.

An Offeror should receive confirmation of delivery at the Government site, not just successful relay from the Offeror's system. Acceptable evidence to establish the time of receipt at the Government site includes documentary and electronic evidence of receipt maintained by the Government site. All submissions shall be submitted before the deadline identified above in order to be considered – no exceptions.

If an emergency or unanticipated event interrupts normal Government processes so that a White Paper or full proposal cannot be received at the site designated for receipt by the date and time specified above, then the date and time specified for receipt will be deemed to be extended to the same day and time specified in this Notice on the first work day on which normal Government processes resume.

An Offeror agrees to hold the terms of their White Paper and any subsequent proposal valid for 180 calendar days from the date of submission.

VI. INQUIRIES:

ACC (APG) RTP Agency Point of Contact (Contractual Questions)

The POC for the US Army Contracting Command (Aberdeen Proving Ground) Research Triangle Park Division is: Ms. Wilveria Sanders, (919) 549-4328, wilveria.a.sanders.civ@army.mil.

ARI Agency Point of Contact (Technical Questions)

The ARI POC for technical matters for this White Paper topic is: Dr. Nathanael (Nate) Keiser, (254) 392-8439, nathanael.l.keiser.civ@army.mil.

VII. REFERENCES:

- Arthur, W., Jr., Bennett, W., Jr., Edens, P. S., & Bell, S. T. (2003). Effectiveness of training in organizations: A meta-analysis of design and evaluation features. *Journal of Applied Psychology*, 88(2), 234-245. <https://psycnet.apa.org/doi/10.1037/0021-9010.88.2.234>
- Jones, J. M., Mohan, G., Trainer, H. M., & Carter, D. R. (2020). The changing nature of teams: Recommendations for managing twenty-first century teamwork. In B. J. Hoffman, M. K. Shoss, & L. A. Wegman (Eds.), *The cambridge handbook of the changing nature of work* (pp. 406-424). Cambridge: Cambridge University Press. <https://doi.org/10.1017/9781108278034.019>
- Shuffler, M. L., Salas, E., & Rosen, M. A. (2020). The evolution and maturation of teams in organizations: Convergent trends in the new dynamic science of teams. *Frontiers in Psychology*, 11(2128), 1-6. <https://doi.org/10.3389/fpsyg.2020.02128>
- Surface, E. A. (2012). Training needs assessment: Aligning learning and capability with performance requirements and organizational objectives. In M. A. Wilson, W. Bennett, Jr., S. G. Gibson, & G. M. Alliger (Eds.), *Series in applied psychology. The handbook of work analysis: Methods, systems, applications and science of work measurement in organizations* (p. 437–462). New York, NY: Routledge/Taylor & Francis Group.
- Tannenbaum, S. I., Mathieu, J. E., Salas, E., & Cohen, D. (2012). Teams are changing: Are research and practice evolving fast enough? *Industrial and Organizational Psychology*, 5(1), 2-24. <https://psycnet.apa.org/doi/10.1111/j.1754-9434.2011.01396.x>