

NOTICE OF FUNDING OPPORTUNITY



DEPARTMENT OF DEFENSE MINERVA RESEARCH INITIATIVE'S UNIVERSITY RESEARCH ANNOUNCEMENT

ANNOUNCEMENT TYPE: Initial Announcement
FUNDING OPPORTUNITY NUMBER: HQ003424NFOEASD02
ASSISTANCE LISTING: 12.630 Basic, Applied, and Advanced Research in
Science and Engineering
KEY DATES: White Papers: 15 January 2024 at 1500 Eastern
Full Applications: 2 April 2024 at 1500 Eastern

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I. PROGRAM DESCRIPTION

A. SHORT DESCRIPTION OF FUNDING OPPORTUNITY

Minerva's University Research program aims to support innovative basic research projects that contribute to the advancement of social science and provides new methods and understandings on social and behavioral questions of security and defense-related interest.

B. BACKGROUND

Minerva aims to improve DoD's basic understanding of the social, cultural, behavioral, and political forces that shape regions of the world of strategic importance to the U.S. The research program seeks to:

- Leverage and focus the resources of the Nation's top universities;
- Define and develop foundational knowledge about sources of present and future conflict with an eye toward better understanding of the political trajectories of key regions of the world; and
- Improve the ability of DoD to develop cutting-edge social science research and foreign area and interdisciplinary studies that is developed and vetted by the best scholars in these fields.

Minerva brings together universities, research institutions, and individual scholars and supports interdisciplinary and cross-institutional projects addressing specific topic areas determined by the Office of the Secretary of Defense.

C. PROGRAM DESCRIPTION/OBJECTIVE

The Minerva Research Initiative (Minerva) emphasizes questions of strategic importance to U.S. national security policy. It seeks to increase the Department's intellectual capital in the social sciences and improve its ability to address future challenges and build bridges between the Department and the social science community. Minerva brings together universities and other research institutions around the world and supports multidisciplinary and cross-institutional projects addressing specific interest areas determined by the Department of Defense. The Minerva program aims to promote research in specific areas of social science and to promote a candid and constructive relationship between DoD and the social science academic community.

The Minerva Research Initiative competition is for research related to eight (8) topics listed below. Innovative white papers and applications related to these research areas are highly encouraged. Detailed descriptions of the interest areas—which are intended to provide a frame of reference and are not meant to be restrictive—can be found in Appendix B: Minerva Research Topics of Interest.

- Topic 1: Societal Cohesion in Crisis
- Topic 2: Considering Societal Resilience at Multiple Scales
- Topic 3: Sociotechnical Adaptation to Climate, Food, and Water Stress
- Topic 4: Social Impact of Technological Change
- Topic 5: Parasocial Relationships, Social Media, and Radicalization

- Topic 6: Temporal Orientation and Strategic Considerations
- Topic 7: Evolving Contexts of Deterrence
- Topic 8: War Termination Processes and Prospects

NB: Each proposal should be submitted to only one topic area, even if there is overlap with another topic area.

Proposals will be considered both for single-investigator awards as well as larger teams. A team of university investigators may be warranted because the necessary expertise in addressing the multiple facets of the interest areas may reside in different universities, or in different departments of the same university. The research questions addressed should extend across a broad range of linked issues where there is clear potential synergy among the contributions of the distinct disciplines represented on the team. Team proposals must name only one Principal Investigator as the responsible technical point of contact. Similarly, one institution will be the primary recipient for the purpose of award execution. The relationship among participating institutions and their respective roles, as well as the apportionment of funds including sub-awards, if any, must be described in both the proposal text and the budget. As well, the basic research contribution of the project must be clearly described in the proposal text.

The Minerva Research Initiative is a multi-service effort. Ultimately, however, funding decisions will be made by OSD personnel, with technical inputs from the Services.

D. OVERVIEW OF FUNDING PRIORITIES

The award made under this announcement will be governed by the general terms and conditions in effect at the time of the award that conform to DoD's implementation of OMB guidance applicable to financial assistance in 2 CFR 200, "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards." Additionally, the requirements of the DoD Grant and Agreement Regulations at 32 CFR Subchapter C are applicable to this award. These terms and conditions are incorporated by reference in this announcement.

E. FUNDING PRIORITIES

In accordance with 10 USC §4001, Research and Development Projects, OUSD(R&E), Minerva's University Research program aims to support innovative basic research projects that contribute to the advancement of social science and provides new methods and understandings on social and behavioral questions of security and defense-related interest.

F. AUTHORIZATION

The authorization to make awards under this NFO may be found via the Assistance Listing (formerly, the Catalog of Federal Domestic Assistance [CFDA] Number) [12.630](#).

II. FEDERAL AWARD INFORMATION

A. TYPE OF INSTRUMENT

The Government intends to award grants as a result of this NFO. Substantial government involvement is not expected between the Government and the recipient under these awards. The Government reserves the right to award other assistance instruments, if deemed in the best interests of the Government. Additionally, the Minerva program description does not describe or require substantial involvement from the DoD in carrying out the assistance. Consequentially, as substantial government involvement is not required, the grants officer has determined that a grant is the appropriate vehicle for this assistance.

B. ESTIMATED PROGRAM FUNDING

The Federal Government (DoD) anticipates awarding 15 grants, with each valued up to \$1,000,000.00 per year with a three to five year period of performance. The total amount awarded from this NFO is not expected to exceed \$25,000,000.00. These funding amounts include both direct and indirect costs. Subject to the availability of funds, the total value of this effort may also be augmented by Congress or by other federal government agencies.

C. ANTICIPATED NUMBER OF AWARDS

The Government reserves the right to make 15 awards or no award as a result of this NFO.

III. ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

All responsible sources from academia, including DoD institutions of higher education and foreign universities, may submit applications under this NFO.

Historically Black Colleges and Universities (HBCUs), Minority Institutions (MIs), and Tribal Colleges and Universities (TCUs) are encouraged to apply. No portion of this NFO, however, will be set aside for HBCU, MI, or TCU participation.

Teams are encouraged and may submit proposals applications in any and all areas. Non-profit institutions and commercial entities may be included on a university-led team as subawardees only, receiving funding for their efforts accordingly. Federally Funded Research & Development Centers (FFRDCs), including Department of Energy National Laboratories, are not eligible to receive awards under this NFO. However, teaming arrangements between FFRDCs and eligible principal applicants are allowed provided they are permitted under the sponsoring agreement between the Government and the specific FFRDC.

Grants to a university may be terminated if the Principal Investigator (PI) severs connections with the university or is unable to continue active participation in the research. Grants to a university may also be terminated if the university severs connections with the PI.

Number of PIs: A single PI must be designated on the application to serve as administrative and technical project lead. There is no restriction on the number of additional key research personnel who can be included on a single application, but each position should be justified by the scope and focus of the research.

B. COST SHARING OR MATCHING

Cost sharing is not required.

C. CONFLICT OF INTEREST

The organization must disclose any potential or actual scientific or nonscientific conflict of interest(s) and must also disclose any potential or actual conflict(s) of interest for any identified sub recipient included in the application. The Government may follow-up with questions.

Depending on the circumstances, the Government may request a conflict of interest mitigation plan. The plan must be approved by the Government. Conflicts of interest which are unable to be mitigated will deem the applicant ineligible for award.

Scientific collaborations on research and development projects are generally the result of close collaboration prior to the submission of applications for support.

Accordingly, these collaborations should be considered when considering potential conflicts of interest. The potential conflict is mitigated by the disclosure of these collaborations, and the list of current and pending support provided for senior and key researchers. Therefore, all collaborators must be included in the list of current and pending support, even if they did not formally provide support.

The Applicant must include the Acknowledgment of Support and Disclaimer on all materials created or produced under our awards. This language may be found in the Terms and Conditions included in the award documents.

IV. APPLICATION AND SUBMISSION INFORMATION

Proposals submitted shall be in accordance with this announcement. Proposed sub-recipients or formal collaborators may, however, team on multiple proposals. The proposal must be valid for at least 180 days. All proposals must reference this announcement number. Offerors should be alert for any amendments to this NFO that may adjust submission dates or other submission requirements. All submissions must be unclassified. The Government will not reimburse any cost associated with participation in the proposal process.

The Government reminds offerors that only warranted Grants Officers could bind or otherwise commit contractually the Government. The cost of preparing proposals in response to this announcement is not an allowable direct charge to any resulting agreement (or any other federal award/contract).

A. SUBMISSION DATE AND TIME

The DoD will only accept applications submitted on or before the date specified in this NFO announcement. Read the instructions in <https://www.grants.gov/web/grants/grantors/grantor-standard-language.html> about registering to apply for DoD funds. If the offeror experiences difficulties with their submission, Grants.gov provides support via the toll-free number 1-800-518-4726 and email at support@grants.gov. This ticket number will allow the DoD to verify the issue if it cannot be resolved by the application date.

The application package for this NFO is available on Grants.gov. Amendments to this NFO will be posted to the above website if and when they occur. Interested parties are encouraged to periodically check the above website for updates and amendments.

B. APPLICATION PROCEDURES AND REQUIREMENTS

The Minerva application process is conducted in two stages:

- Stage 1 – White Paper submission (via email to osd.minerva@mail.mil AND the “Appendix B: Minerva Research Topics of Interest” technical point of contact)
 - Deadline: 15 January 2024 at 1500 Eastern
- Stage 2 – Full Application submission (via Grants.gov)
 - Deadline: 2 April 2024 at 1500 Eastern

Stage One – Based on an assessment of the white papers submitted, the grants officer will advise prospective proposers whether the applications outlined in their white papers were judged to be competitive for Minerva University Research award selection, and will then invite the most promising subset of applications to submit a full application for funding consideration. **NB: White Papers are optional, though strongly encouraged.**

Stage Two – Interested entities will submit full applications. All applications submitted under the terms and conditions cited in this NFO will be evaluated in accordance with the evaluation criteria stated herein. Full applications submitted after the posted deadline will not be evaluated for funding consideration. Subsequent to white paper feedback, interested entities are required to submit full proposals. All proposals submitted under the terms and conditions cited in this NFO will be evaluated in accordance with the evaluation criteria stated herein. **NB: Entities may submit a proposal without submitting a white paper, though this is discouraged.** Interested parties who do not participate in the white paper review stage should contact the appropriate POC prior to submission of a full proposal to discuss options, though feedback at that late stage is not guaranteed. Full proposals submitted after the posted deadline will not be evaluated for funding consideration. Time of receipt will be determined by the date and time the submission is recorded by Grants.gov. Early submission is encouraged.

Applications will be submitted through Grants.gov. The narrative portion of the application will be submitted in .pdf format. NOTE: If using Excel for any portion of

the application, ensure the document is converted to .pdf format prior to uploading to Grants.gov.

DO NOT SEND: Hardcopies (including facsimiles)

DO NOT SEND: ZIP files

DO NOT SEND: Adobe Acrobat files in portfolio mode

DO NOT SEND: Password protected files.

Full application packages—as indicated by Stage—must be submitted electronically (via E-mail for Stage 1 and via Grants.gov for Stage 2) no later than the dates and times indicated on the Grants.gov listing, the cover page of this NFO, and in Section IV.B. Feedback may be provided by the Program Director or appropriate POC after reviews have been completed.

UNIQUE ENTITY IDENTIFIER (UEI)/SYSTEM FOR AWARD MANAGEMENT (SAM)

Applications will only be accepted if submitted through Grants.gov. Organizations must have a Unique Entity Identifier (UEI), active System for Award Management (SAM) registration, and Grants.gov account to apply for grants and cooperative agreements. Please consult SAM.gov and Grants.gov for assistance in registering for SAM and Grants.gov.

The Government may not make a Federal award until the applicant has complied with all unique entity identifier and SAM requirements and, if an applicant has not fully complied with the requirements by the time the Federal awarding agency is ready to make a Federal award, the Federal awarding agency may determine that the applicant is not qualified to receive a Federal award and use that determination as a basis for making a Federal award to another applicant.

The Federal Assistance Certifications Report is an attestation that the entity will abide by the requirements of the various laws and regulations; therefore, as applicable, you are still required to submit any documentation, including the SF-LLL Disclosure of Lobbying Activities (if applicable), and informing DoD of unpaid delinquent tax liability or a felony conviction under any Federal law.

Any attachment containing additional certifications should be prefaced by the following statement: “By checking “I Agree” on the SF-424 Block 21 you agree to abide by the following statement: “By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)”

Offerors are responsible for submitting their applications in sufficient time to allow them to reach Grants.gov by the date and time specified in this announcement. It is strongly recommended that applications be uploaded at least two days before the

closing date and time. This will help avoid problems caused by high system usage or any potential technical and/or input problems involving the offeror's own equipment. It will also allow any application errors detected by Grants.gov to be corrected in time for the application to be resubmitted. If the application is received by Grants.gov after the exact time and date specified as the deadline for receipt, it will be considered "late" and cannot be considered for review.

C. APPLICATION WITHDRAWAL

An offeror may withdraw an application at any time before award by written notice or by email. Notice of withdrawal shall be sent to the grants officer identified in this announcement. Withdrawals are effective upon receipt of notice by the grants officer.

D. WHITE PAPERS (STAGE ONE)

1. WHITE PAPER PACKAGE COMPONENTS

Submitted documentation should be in PDF format and include in a single document:

- A cover letter (optional), not to exceed one page.
- A cover page, labeled "APPLICATION WHITE PAPER," that includes the NFO number, proposed project title, and prospective applicant's technical point of contact with telephone number, e-mail address, and most relevant area number(s) and title(s) (see Appendix B: Minerva Research Topics of Interest).
- Curriculum vitae (CV) of key investigators (optional)
- The white paper (**four (4) page limit, single-sided**) including:
 - Identification of the research and issues including the state of the field
 - Proposed methods
 - Potential contribution to fundamental social science basic research
 - Potential implications for national defense
 - Potential team and management plan
 - Data management plan for data or tools to be generated in the course of research
 - Summary of estimated costs
 - Reference citations are not required but may be included outside the four-page limit

The white paper should provide sufficient information on the research being proposed (e.g., hypothesis, theories, concepts, methods, approaches, data collection, measurement and analyses) to allow for an assessment by a subject matter expert.

2. WHITE PAPER SUBMISSION

White papers and supporting documentation must be submitted as email attachments to osd.minerva@mail.mil and the research topic's technical point of contact no later than 1500 Eastern on 15 January 2024. E-mail transmission is not instantaneous and delays in transmission may occur anywhere along the route. The Government takes no responsibility for any delays in the transmission of an

e-mail. The prospective applicant is responsible for allowing enough time to complete the required application components upload the white paper and submit the proposal via e-mail before the deadline. It is not necessary for white papers to carry official institutional signatures.

The submission email subject line should indicate relevant area categories (see Appendix B: Minerva Research Topics of Interest), written as: 2023 Minerva NFO WP - Area [Topic Number]

An e-mail confirmation will be sent to the applicant within four days of submission. Documents submitted after the deadline or found to be non-compliant with the requirements described above will not be reviewed.

E. FULL PROPOSALS (STAGE TWO)

1. PACKAGE REQUIREMENTS

The below chart specifies which forms and attachments are required for the Full Proposal submission and specifies the maximum page lengths for attachments to be submitted along with the completed form.

SF424 (R&R)(V5.0)
Assurances for Non-construction Programs (SF-424B – R&R) (V1.1)
Budget Information for Non-construction Programs (SF-424A) (V1.0)
Disclosure of Lobbying Activities (SF-LLL) (V2.0)
Project Abstract Summary (V2.0) (Suggested length no more than two pages)
Project Narrative Attachment Form (V1.2) (No more than 25 pages)
Research & Related Budget (V3.0)
Research & Related Personal Data (V1.2)
Research & Related Senior/Key Person Profile (V3.0)

The application consists of a narrative with supporting documentation, and required forms. Both are explained below.

The Narrative is a twenty-five (25) page document consisting of the following items:

- Identification of the research and issues including the state of the field
- Proposed methods
- Potential contribution to fundamental social science basic research
- Potential implications for national defense
- Team and management plan
- Data management plan for data or tools to be generated in the course of research. Additionally, information on how the data will be shared, organized, and preserved should be included. In instances where this is not possible, the Data Management Plan must explain why it is not possible or scientifically appropriate. Information on the Data Management Plan can be found in DoDI 3200.12, Section 3.c. of Enclosure 3.

<https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/320012p.pdf?ver=2019-04-30-073122-220>).

- Project Schedule and Milestones
- Summary of estimated costs
- Reference citations are not required but may be included outside the 25-page limit

Narratives exceeding the 25-page limit may not be evaluated.

EXCLUDED from the 25-page limit are resumes, curricula vitae (limited to two pages each), references, Initial Work Plan, letters of support (limited to 10 pages), and data management plan. These may be included in the same document as appendices, after the page limit.

Additionally, the following items are EXCLUDED from the 25-page limit:

- A cover letter (optional, but not to exceed one (1) page)
- A cover page, labeled “FULL PROPOSAL” that includes the NFO number, proposed project title, and prospective applicant’s technical point of contact with telephone number, e-mail address, and most relevant topic number(s) and title(s) (see Appendix B: Minerva Research Topics of Interest).
- Table of Contents – A listing of the sections within the application, including corresponding page numbers.
- Executive Summary – An Executive Summary is requested and may be constructed in any manner in which the applicant feels summarizes the entire application.
- Financial Breakdown – The application must include a narrative cost proposal detailing direct labor, administrative and clerical labor, fringe benefits and indirect costs, travel, sub-awards, subcontracts, consultants, materials and supplies, recipient acquired equipment of facilities, and other direct costs.
 - The cost proposal, which is a narrative explaining and justifying budget figures in enough detail so the government can determine reasonableness. It must include all figures, calculations, and supporting documentation for determining cost allowability, allocability, and reasonableness. Justifications for costs must be explicitly stated.
 - Additional information may be requested, if needed. If composite rates are used, provide the calculations used in deriving the composite rates. A Negotiated Indirect Cost Rate Agreement (NICRA) may be required in order for an awardee to invoice for indirect costs. If the Offeror does not currently hold a NICRA, describe the status of the organization’s request for such an agreement with its cognizant agency.
 - IAW 2 CFR §200.414(f), any non-Federal entity that has never received a negotiated indirect cost rate, except for those non-Federal entities described in Appendix VII to 2 CFR §200, may elect to charge a de minimis rate of 10% of modified total direct costs (MTDC) which may be used indefinitely.

- If subject to Federal Single Audit coverage requirements, the offeror must submit the latest Single Audit with the application.
- NOTE: Failure to adequately provide detailed cost data will require the Grants Officer to contact the proposing organization for the requisite information. All Offerors are required to submit a thoroughly detailed cost breakdown. The Grants Officer must be able to determine that all proposed costs are allowable and reasonable. A detailed budget will facilitate this cost analysis.
- Letter(s) of Support (optional) – There is no specified format or content required for the letter(s) of support other than being authored by the appropriate representative on organizational letterhead, and supporting commitment to the offeror and his or her project. Commitment may include (but is not limited to) funding, related materials and/or computer investments, technical advisement, and organizational or infrastructure support. The letter(s) can include any and all commitments and investments made by the representative towards the offeror and the overall statement about the relevance of the project to the Minerva Research Initiative.
- Principal Investigator Qualifications (Curricula Vitae/Resumes) – A discussion of the qualifications of the proposed Project Director/Principal Investigator and any other key personnel. Include resumes or curricula vitae for the Project Director/Principal Investigator and other key personnel. The resumes/curricula vitae shall be attached to the application and must be limited to two (2) pages each.
- Responsibility – Offerors must provide the following information to the DoD in order to assist in the DoD’s evaluation of the offeror’s responsibility:
 - Describe how you have adequate resources or the ability to obtain such capability as required to complete the activities proposed;
 - Describe how you have the ability to comply with the agreement conditions, taking into account all existing and currently prospective commitments of the offeror, nongovernmental and governmental;
 - Describe your performance history; specifically, your record in managing Federal awards and the extent to which any previously awarded amounts will be expended prior to future awards;
 - Describe your record of integrity and business ethics;
 - Describe qualifications and eligibility to receive an award under applicable laws and regulations; and
 - Describe your organization, experience, accounting, and operational controls and technical skills, or the ability to obtain them (including as appropriate such elements as property control systems, quality assurance measures, and safety programs applicable to the services to be performed).
- Initial Work Plan – Offerors must submit an Initial Work Plan. The Work Plan will become part of the resulting award if the application is selected to be funded. Please review Section XII Appendix A for further guidance regarding the work plan. A completed Work Plan is required for selected application to receive funding.

- Budget Justification – A separate document (PDF format) should be included in the application that provides appropriate justification and/or supporting documentation for each element of cost proposed. This document shall be attached under Section K. “Budget Justification” of the Research and Related Budget form. Click “Add Attachment” to attach. This document may be prepared in Excel, but must be converted to Adobe .pdf format when submitted. The itemized budget should include direct and indirect costs, including rates and quantities. This may include the following:
 - Direct Labor – Individual labor categories or persons, with associated labor hours and unburdened direct labor rates. Provide escalation rates for out years.
 - Administrative and Clerical Labor – Salaries of administrative and clerical staff are normally indirect costs (and included in an indirect cost rate). Direct charging of these costs may be appropriate when a major project requires an extensive amount of administrative or clerical support significantly greater than normal and routine levels of support. Budgets proposing direct charging of administrative or clerical salaries must be supported with a budget justification which adequately describes the major project and the administrative and/or clerical work to be performed.
 - Fringe Benefits and Indirect Costs (F&A, Overhead, G&A, etc.) – The application should show the rates and calculation of the costs for each rate category. If the rates have been approved/negotiated by a government agency, provide a copy of the memorandum/agreement. If the rates have not been approved/negotiated, provide sufficient detail to enable a determination of allowability, allocability and reasonableness of the allocation bases, and how the rates are calculated. Additional information may be requested, if needed. If composite rates are used, provide the calculations used in deriving the composite rates.
 - Travel – The proposed travel costs must include the following for each trip: the purpose of the trip, origin and destination if known, approximate duration, the number of travelers, and the estimated cost per trip must be justified based on the organizations historical average cost per trip or other reasonable basis for estimation. Such estimates and the resultant costs claimed must conform to the applicable Federal cost principals.
 - Sub-awards/Subcontracts – Provide a description of the work to be performed by the subrecipient/subcontractor. For each sub-award, a detailed budget is required to be submitted by the subrecipient(s). An application and any supporting documentation must be received and reviewed before the Government can complete its cost analysis of the application. The DoD’s preferred method of receiving subcontract information is for this information to be included with the Prime’s application. The email should identify the application title, the prime Offeror and that the attached application is a subcontract.

- Consultants – Provide a breakdown of the consultant’s hours, the hourly rate proposed, any other proposed consultant costs, a copy of the signed Consulting Agreement or other documentation supporting the proposed consultant rate/cost, and a copy of the consultant’s proposed statement of work if it is not already separately identified in the prime contractor’s application.
- Materials & Supplies – Provide an itemized list of all proposed materials and supplies including quantities, unit prices, and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).
- Recipient Acquired Equipment or Facilities – Equipment and/or facilities are normally furnished by the Recipient. If acquisition of equipment and/or facilities is proposed, a justification for the purchase of the items must be provided. Provide an itemized list of all equipment and/or facilities costs and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists). Allowable items normally are limited to research equipment not already available for the project. General purpose equipment (i.e., equipment not used exclusively for research, scientific or other technical activities, such as personal computers, laptops, office equipment) should not be requested unless they will be used primarily or exclusively for the project. For computer/laptop purchases and other general purpose equipment, if proposed, include a statement indicating how each item of equipment will be integrated into the program or used as an integral part of the research effort.
- Other Direct Costs – Provide an itemized list of all other proposed other direct costs such as Graduate Assistant tuition, laboratory fees, report and publication costs, and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists).
- Fee/Profit – Fee/profit is unallowable under assistance agreements at either the prime or sub-award level but may be permitted on subcontracts issued by the prime awardee.

Formatting requirements:

- Single-spaced lines are acceptable.
- Font: Minimum font size is 12 points. The preferred font is Times New Roman, but other fonts are acceptable.
- Tables/Figures: 10 point fonts are acceptable for tables/figures and captions.

2. FULL PROPOSAL STRUCTURE

- Cover Letter (Optional)
- Cover Page (Required)
- Table of Contents (Required)
- Executive Summary (Required)
- Narrative Proposal (25-page limit, described above)
- Curriculum Vitae of Principal Investigator(s) (Required)
- Responsibility (Required)
- Letter(s) of Support (Optional)

- Financial Breakdown (Required)
- Initial Work Plan (Required)
- Budget Justification (Separate Document, Required)

V. APPLICATION REVIEW INFORMATION

A. SELECTION CRITERIA

The Minerva program seeks to invest in basic research and to identify challenging fundamental scientific areas of investigation that may have potential for long term benefit to DoD. Proposed research should describe cutting-edge efforts on basic scientific problems. Subject to funding availability, white papers and proposals will be evaluated under the following criteria:

Principal Criteria

- Scientific merit, soundness, and programmatic strategy of the proposed basic social science research; and
- Relevance and potential contributions of the proposed research to research areas of DoD interest as described in Appendix B: Minerva Research Topics of Interest. The Minerva Research Initiative is particularly interested in applications that align with and support the 2022 National Defense Strategy.

Other Criteria

- Potential impact of the basic research on the defense-relevant social sciences and defense communities that apply them. DoD encourages innovative submissions that, in addition to knowledge generation in critical areas, also build new communities, new frameworks, and new opportunities for dialogue.
- The qualifications and availability of the university Principal Investigators and other key investigators (if applicable) and the overall management approach; and
- The realism and reasonableness of cost.

The Principal Criteria are of equal importance and are more important than Other Criteria. Other Criteria are of equal importance to each other. The U.S. Government does not guarantee an award in each research area. Further, be advised that as funds are limited, otherwise meritorious applications may not be funded.

All information necessary for the review and evaluation of an application must be contained in the application itself. No other material will be provided to the panel. Applications should contain sufficient technical detail to allow for in-depth technical assessment.

An initial review of the applications will be conducted to ensure compliance with the requirements of this NFO. Failure to comply with the requirements of the NFO may result in an application receiving no further consideration for award.

An award under this NFO will be made on the basis of the evaluation criteria listed above.

WHS/AD reserves the right to remove Offerors from award consideration if the parties fail to reach agreement on award terms, conditions, or cost/price within a reasonable time; or if the Offerors fail to provide requested or required additional information in a timely manner.

B. REVIEW AND SELECTION PROCESS

The Minerva Research Initiative selects awards using merit-based competitive procedures according to 32 CFR 22.315. Preparation and submission requirements for the two-stage proposal process are described in Section IV of this document. Evaluation processes are described below.

WHITE PAPERS

White papers will be reviewed by the responsible Research Area POC for the interest area and may be reviewed by one or more subject matter experts. Systems Engineering and Technical Assistance (SETA) contractor employees may provide technical and administrative assistance to the evaluation team. Individuals other than the POC will sign a conflict-of-interest statement prior to receiving white papers.

White papers that best fulfill the evaluation criteria will be identified by the white paper reviewers and recommended to the OSD Minerva Steering Committee. The Steering Committee is composed of representatives from the research and policy organizations within OSD and may include representatives from academia, the DoD Military Components, and/or Defense Agencies. The Minerva Steering Committee expects to invite up to forty (40) PIs to submit full proposals. Thorough feedback on white papers will be provided to those invited to submit a full proposal. Feedback will be provided to all other proposers upon request.

FULL APPLICATIONS

Full applications submitted under this NFO undergo another multi-stage evaluation procedure. Technical applications will be evaluated through a peer or scientific review process. Reviewers may include Government personnel and Non-Government reviewers including university faculty and staff researchers.

Each reviewer is required to sign a conflict-of-interest and confidentiality statement attesting that the reviewer has no known conflicts of interest, and that application and evaluation information will not be disclosed outside the evaluation panel. The names and affiliations of reviewers are not disclosed.

Cost proposals will be evaluated by Government business professionals and support contractors. Findings of the various interest area evaluators will be forwarded to senior DoD officials who will make funding recommendations to the awarding officials. Restrictive notices notwithstanding, one or more support contractors or peers from the university community will be utilized as subject-matter-expert technical consultants. However, proposal selection and award decisions are solely the responsibility of Government personnel. Each support contractor's employees and peers from the university community having access to technical and cost proposals

submitted in response to this NFO will be required to sign a non-disclosure statement prior to receipt of any proposal submission.

The recommendations of the various area POCs will be forwarded to senior officials from the OSD who will make final funding recommendations to the awarding officials based on reviews, portfolio balance interests, and funds available.

Due to the nature of the Minerva program, the reviewing officials may recommend that less than an entire Minerva proposal be selected for funding. This may be due to several reasons, such as insufficient funds, research overlap among proposals received, or potential synergies among proposals under a research interest area. In such cases, the government will discuss proposal adjustments with the applicant prior to final award.

Each application will be reviewed using merit-based selection criteria rather than against other applications submitted under this Announcement.

Offerors are advised that employees of commercial firms under contract to the government may be used to administratively process applications. By submitting an application, an offeror consents to allowing access to its application(s) by support contractors. These support contracts include nondisclosure agreements prohibiting their contractor employees from disclosing any information submitted by offerors.

In addition to the technical/program review, the DoD does a budget review and a risk review as directed by 2 CFR 200.206, including a review of the Federal Awardee Performance and Integrity Information System (FAPIIS). Offerors may review information in FAPIIS and comment on any information entered into that system. Comments made by offerors will be taken into account in addition to other information in considering offerors' integrity, business ethics, and record of performance.

Note: At the time of application, there is no additional material to be submitted for this review. However, there may be additional requests for clarification as these reviews progress.

Options: The agreement allows for the exercise of options via a modification to the agreement and may allow for award and concurrent execution of the exercised option-effort alongside ongoing efforts.

Evaluation Panel: Technical details and budgets submitted under this NFO will be protected from unauthorized disclosure. The cognizant Government Program Officer and other Government subject matter experts will perform the evaluation of technical applications. Restrictive notices notwithstanding, one or more OSD covered support contractors may be utilized as subject matter experts providing technical support, but will not participate in the evaluation of proposals. Each support contractor employee that has access to technical and cost applications submitted in response to this NFO

will be required to sign a nondisclosure statement prior to receipt of any application submissions.

VI. FEDERAL AWARD ADMINISTRATION INFORMATION

A. FEDERAL AWARD NOTICES

The government will notify the recipient of the award via email. The notification e-mail regarding a selection is not authorization to commit or expend DoD funds. A DoD grants officer is the only person authorized to obligate and approve the use of Federal funds. This authorization is in the form of a signed Notice of Award. After selection but prior to award, the government may request additional information. This may include representations and certifications, revised budgets or budget explanations, or other information as applicable to the proposed award. The award start date will be determined after successfully coordinating all pre-award requirements.

B. NATIONAL POLICY (NP) REQUIREMENTS

NP Article I. Nondiscrimination National Policy Requirements. (December 2014)
Section A. Cross-cutting nondiscrimination requirements. By signing this award or accepting funds under this award, you assure that you will comply with applicable provisions of the national policies prohibiting discrimination:

1. On the basis of race, color, or national origin, in Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.), as implemented by Department of Defense (DoD) regulations at 32 CFR part 195.
2. On the basis of gender, blindness, or visual impairment, in Title IX of the Education Amendments of 1972 (20 U.S.C. 1681 et seq.), as implemented by DoD regulations at 32 CFR part 196.
3. On the basis of age, in the Age Discrimination Act of 1975 (42 U.S.C. 6101 et seq.), as implemented by Department of Health and Human Services regulations at 45 CFR part 90.
4. On the basis of disability, in the Rehabilitation Act of 1973 (29 U.S.C. 794), as implemented by Department of Justice regulations at 28 CFR part 41 and DoD regulations at 32 CFR part 56.
5. On the basis of disability in the Architectural Barriers Act of 1968 (42 U.S.C. 4151 et seq.) related to physically handicapped persons' ready access to, and use of, buildings and facilities for which Federal funds are used in design, construction, or alteration.

Section B. [Reserved]

NP Article II. Environmental National Policy Requirements. (December 2014)

Section A. Cross-cutting environmental requirements. You must:

1. Comply with all applicable Federal environmental laws and regulations. The laws and regulations identified in this section are not intended to be a complete list.
2. Comply with applicable provisions of the Clean Air Act (42 U.S.C. 7401, et seq.) and Clean Water Act (33 U.S.C. 1251, et seq.).
3. Comply with applicable provisions of the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4821-4846), as implemented by the Department of Housing and

Urban Development at 24 CFR part 35. The requirements concern lead-based paint in buildings owned by the Federal Government or housing receiving Federal assistance.

4. Immediately identify to us, as the Federal awarding agency, any potential impact that you find this award may have on:
 - a. The quality of the “human environment”, as defined in 40 CFR 1508.14, including wetlands; and provide any help we may need to comply with the National Environmental Policy Act (NEPA, at 42 U.S.C. 4321 et seq.), the regulations at 40 CFR 1500-1508, and E.O. 12114, if applicable; and assist us to prepare Environmental Impact Statements or other environmental documentation. In such cases, you may take no action that will have an environmental impact (e.g., physical disturbance of a site such as breaking of ground) or limit the choice of reasonable alternatives to the proposed action until we provide written notification of Federal compliance with NEPA or E.O. 12114.
 - b. Flood-prone areas and provide any help we may need to comply with the National Flood Insurance Act of 1968, as amended by the Flood Disaster Protection Act of 1973 (42 U.S.C. 4001 et seq.), which require flood insurance, when available, for federally assisted construction or acquisition in flood-prone areas.
 - c. A land or water use or natural resource of a coastal zone that is part of a federally approved State coastal zone management plan and provide any help we may need to comply with the Coastal Zone Management Act of 1972 (16 U.S.C. 1451, et seq.) including preparation of a Federal agency Coastal Consistency Determination.
 - d. Coastal barriers along the Atlantic and Gulf coasts and Great Lakes' shores and provide help we may need to comply with the Coastal Barrier Resources Act (16 U.S.C. 3501 et seq.), concerning preservation of barrier resources.
 - e. Any existing or proposed component of the National Wild and Scenic Rivers system and provide any help we may need to comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271 et seq.).
 - f. Underground sources of drinking water in areas that have an aquifer that is the sole or principal drinking water source and in wellhead protection areas, and provide any help we may need to comply with the Safe Drinking Water Act (42 U.S.C. 300f et seq.).
5. Comply fully with the Endangered Species Act of 1973, as amended (ESA, at 16 U.S.C. 1531 et seq.), and implementing regulations of the Departments of the Interior (50 CFR parts 10-24) and Commerce (50 CFR parts 217-227). You also must provide any help we may need in complying with the consultation requirements of ESA section 7 (16 U.S.C. 1536) applicable to Federal agencies or any regulatory authorization we may need based on the award of this grant. This is not in lieu of responsibilities you have to comply with provisions of the Act that apply directly to you as a U.S. entity, independent of receiving this award.

6. Must fully comply with the Marine Mammal Protection Act of 1972, as amended (MMPA, at 16 U.S.C. 1361 et seq.) and provide any assistance we may need in obtaining any required MMPA permit based on an award of this grant.

Section B. [Reserved]

NP Article III. National Policy Requirements Concerning Live Organisms.
(December 2014)

Section A. Cross-cutting requirements concerning live organisms.

1. *Human subjects.*

- a. You must protect the rights and welfare of individuals who participate as human subjects in research under this award and comply with the requirements at 32 CFR part 219, DoD Instruction (DoDI) 3216.02, 10 U.S.C. 980, and when applicable, Food and Drug Administration (FDA) regulations.
- b. You must not begin performance of research involving human subjects, also known as human subjects research (HSR), that is covered under 32 CFR part 219, or that meets exemption criteria under 32 CFR 219.101(b), until you receive a formal notification of approval from a DoD Human Research Protection Official (HRPO). Approval to perform HSR under this award is received after the HRPO has performed a review of your documentation of planned HSR activities and has officially furnished a concurrence with your determination as presented in the documentation.
- c. In order for the HRPO to accomplish this concurrence review, you must provide sufficient documentation to enable his or her assessment as follows:
 - i. If the HSR meets an exemption criterion under 32 CFR 219.101(b), the documentation must include a citation of the exemption category under 32 CFR 219.101(b) and a rationale statement.
 - ii. If your activity is determined as “non-exempt research involving human subjects”, the documentation must include:
 - (A) Assurance of Compliance (i.e., Department of Health and Human Services Office for Human Research Protections (OHRP) Federal Wide Assurance (FWA)) appropriate for the scope of work or program plan; and
 - (B) Institutional Review Board (IRB) approval, as well as all documentation reviewed by the IRB to make their determination.
- d. The HRPO retains final judgment on what activities constitute HSR, whether an exempt category applies, whether the risk determination is appropriate, and whether the planned HSR activities comply with the requirements in paragraph 1.a of this section.
- e. You must notify the HRPO immediately of any suspensions or terminations of the Assurance of Compliance.
- f. DoD staff, consultants, and advisory groups may independently review and inspect your research and research procedures involving human subjects and, based on such findings, DoD may prohibit research that presents unacceptable hazards or otherwise fails to comply with DoD requirements.

- g. Definitions for terms used in paragraph 1 of this article are found in DoDI 3216.02.
2. *Animals*
- a. Prior to initiating any animal work under the award, you must:
 - i. Register your research, development, test, and evaluation or training facility with the Secretary of Agriculture in accordance with 7 U.S.C. 2136 and 9 CFR 2.30, unless otherwise exempt from this requirement by meeting the conditions in 7 U.S.C. 2136 and 9 CFR parts 1–4 for the duration of the activity.
 - ii. Have your proposed animal use approved in accordance with Department of Defense Instruction (DoDI) 3216.01, Use of Animals in DoD Programs by a DoD Component Headquarters Oversight Office.
 - iii. Furnish evidence of such registration and approval to the grants officer.
 - b. You must make the animals on which the research is being conducted, and all premises, facilities, vehicles, equipment, and records that support animal care and use available during business hours and at other times mutually agreeable to you, the United States Department of Agriculture Office of Animal and Plant Health Inspection Service (USDA/APHIS) representative, personnel representing the DoD component oversight offices, as well as the grants officer, to ascertain that you are compliant with 7 U.S.C. 2131 et seq., 9 CFR parts 1–4, and DoDI 3216.01.
 - c. Your care and use of animals must conform with the pertinent laws of the United States, regulations of the Department of Agriculture, and regulations, policies, and procedures of the Department of Defense (see 7 U.S.C. 2131 et seq., 9 CFR parts 1–4, and DoDI 3216.01).
 - d. You must acquire animals in accordance with DoDI 3216.01.
3. *Use of Remedies.* Failure to comply with the applicable requirements in paragraphs 1–2 of this section may result in the DoD Component's use of remedies, e.g., wholly or partially terminating or suspending the award, temporarily withholding payment under the award pending correction of the deficiency, or disallowing all or part of the cost of the activity or action (including the federal share and any required cost sharing or matching) that is not in compliance. See OAR Article III.

Section B. [Reserved]

NP Article IV. Other National Policy Requirements. (December 2014)

Section A. Cross-cutting requirements.

- 1. *Debarment and suspension.* You must comply with requirements regarding debarment and suspension in Subpart C of 2 CFR part 180, as adopted by DoD at 2 CFR part 1125. This includes requirements concerning your principals under this award, as well as requirements concerning your procurement transactions and subawards that are implemented in PROC Articles I through III and SUB Article II.

2. *Drug-free workplace.* You must comply with drug-free workplace requirements in Subpart B of 2 CFR part 26, which is the DoD implementation of 41 U.S.C. chapter 81, “Drug-Free Workplace.”
3. *Lobbying.*
 - a. You must comply with the restrictions on lobbying in 31 U.S.C. 1352, as implemented by DoD at 32 CFR part 28, and submit all disclosures required by that statute and regulation.
 - b. You must comply with the prohibition in 18 U.S.C. 1913 on the use of Federal funds, absent express Congressional authorization, to pay directly or indirectly for any service, advertisement or other written matter, telephone communication, or other device intended to influence at any time a Member of Congress or official of any government concerning any legislation, law, policy, appropriation, or ratification.
 - c. If you are a nonprofit organization described in section 501(c)(4) of title 26, United States Code (the Internal Revenue Code of 1968), you may not engage in lobbying activities as defined in the Lobbying Disclosure Act of 1995 (2 U.S.C., chapter 26). If we determine that you have engaged in lobbying activities, we will cease all payments to you under this and other awards and terminate the awards unilaterally for material failure to comply with the award terms and conditions.
4. *Officials not to benefit.* You must comply with the requirement that no member of Congress shall be admitted to any share or part of this award, or to any benefit arising from it, in accordance with 41 U.S.C. 6306.
5. *Hatch Act.* If applicable, you must comply with the provisions of the Hatch Act (5 U.S.C. 1501-1508) concerning political activities of certain State and local government employees, as implemented by the Office of Personnel Management at 5 CFR part 151, which limits political activity of employees or officers of State or local governments whose employment is connected to an activity financed in whole or part with Federal funds.
6. *Native American graves protection and repatriation.* If you control or possess Native American remains and associated funerary objects, you must comply with the requirements of 43 CFR part 10, the Department of the Interior implementation of the Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C., chapter 32).
7. *Fly America Act.* You must comply with the International Air Transportation Fair Competitive Practices Act of 1974 (49 U.S.C. 40118), commonly referred to as the “Fly America Act,” and implementing regulations at 41 CFR 301-10.131 through 301-10.143. The law and regulations require that U.S. Government financed international air travel of passengers and transportation of personal effects or property must use a U.S. Flag air carrier or be performed under a cost sharing arrangement with a U.S. carrier, if such service is available.
8. *Use of United States-flag vessels.* You must comply with the following requirements of the Department of Transportation at 46 CFR 381.7, in regulations implementing the Cargo Preference Act of 1954:
 - a. Pursuant to Public Law 83-664 (46 U.S.C. 55305), at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise

obtained with funds under this award, and which may be transported by ocean vessel, must be transported on privately owned United States-flag commercial vessels, if available.

- b. Within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, “on-board” commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph 8.a of this section must be furnished to both our award administrator (through you in the case of your contractor's bill-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.
9. *Research misconduct.* You must comply with requirements concerning research misconduct in Enclosure 4 to DoD Instruction 3210.7, “Research Integrity and Misconduct.” The Instruction implements the Governmentwide research misconduct policy that the Office of Science and Technology Policy published in the FEDERAL REGISTER (65 FR 76260, December 6, 2000, available through the U.S. Government Printing Office website: <https://www.federalregister.gov/documents/2000/12/06/00-30852/executive-office-of-the-president-federal-policy-on-research-misconduct-preamble-for-research>).
10. *Requirements for an Institution of Higher Education Concerning Military Recruiters and Reserve Officers Training Corps (ROTC).*
- a. As a condition for receiving funds available to the DoD under this award, you agree that you are not an institution of higher education (as defined in 32 CFR part 216) that has a policy or practice that either prohibits, or in effect prevents:
 - i. The Secretary of a Military Department from maintaining, establishing, or operating a unit of the Senior Reserve Officers Training Corps (ROTC) - in accordance with 10 U.S.C. 654 and other applicable Federal laws - at that institution (or any sub-element of that institution);
 - ii. Any student at that institution (or any sub-element of that institution) from enrolling in a unit of the Senior ROTC at another institution of higher education.
 - iii. The Secretary of a Military Department or Secretary of Homeland Security from gaining access to campuses, or access to students (who are 17 years of age or older) on campuses, for purposes of military recruiting in a manner that is at least equal in quality and scope to the access to campuses and to students that is provided to any other employer; or
 - iv. Access by military recruiters for purposes of military recruiting to the names of students (who are 17 years of age or older and enrolled at that institution or any sub-element of that institution); their addresses, telephone listings, dates and places of birth, levels of education, academic majors, and degrees received; and the most recent educational institutions in which they were enrolled.

- b. If you are determined, using the procedures in 32 CFR part 216, to be such an institution of higher education during the period of performance of this award, we:
 - i. Will cease all payments to you of DoD funds under this award and all other DoD grants and cooperative agreements; and
 - ii. May suspend or terminate those awards unilaterally for material failure to comply with the award terms and conditions.
- 11. *Historic preservation.* You must identify to us any:
 - a. Property listed or eligible for listing on the National Register of Historic Places that will be affected by this award, and provide any help we may need, with respect to this award, to comply with Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as implemented by the Advisory Council on Historic Preservation regulations at 36 CFR part 800 and Executive Order 11593, "Identification and Protection of Historic Properties," [3 CFR, 1971-1975 Comp., p. 559]. Impacts to historical properties are included in the definition of "human environment" that require impact assessment under NEPA (See NP Article II, Section A).
 - b. Potential under this award for irreparable loss or destruction of significant scientific, prehistorical, historical, or archeological data, and provide any help we may need, with respect to this award, to comply with the Archaeological and Historic Preservation Act of 1974 (54 U.S.C. chapter 3125).
- 12. *Relocation and real property acquisition.* You must comply with applicable provisions of 49 CFR part 24, which implements the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 U.S.C. 4601, et seq.) and provides for fair and equitable treatment of persons displaced by federally assisted programs or persons whose property is acquired as a result of such programs.
- 13. *Confidentiality of patient records.* You must keep confidential any records that you maintain of the identity, diagnosis, prognosis, or treatment of any patient in connection with any program or activity relating to substance abuse education, prevention, training, treatment, or rehabilitation that is assisted directly or indirectly under this award, in accordance with 42 U.S.C. 290dd-2.
- 14. *Pro-Children Act.* You must comply with applicable restrictions in the Pro-Children Act of 1994 (Title 20, Chapter 68, subchapter X, Part B of the U.S. Code) on smoking in any indoor facility:
 - a. Constructed, operated, or maintained under this award and used for routine or regular provision of kindergarten, elementary, or secondary education or library services to children under the age of 18.
 - b. Owned, leased, or contracted for and used under this award for the routine provision of federally funded health care, day care, or early childhood development (Head Start) services to children under the age of 18.
- 15. *Constitution Day.* You must comply with Public Law 108-447, Div. J, Title I, Sec. 111 (36 U.S.C. 106 note), which requires each educational institution receiving Federal funds in a Federal fiscal year to hold an educational program on the United States Constitution on September 17th during that year for the students served by the educational institution.

16. *Trafficking in persons.* You must comply with requirements concerning trafficking in persons specified in the award term at 2 CFR 175.15(b), as applicable.
17. *Whistleblower protections.* You must comply with 10 U.S.C. 2409, including the:
 - a. Prohibition on reprisals against employees disclosing certain types of information to specified persons or bodies; and
 - b. Requirement to notify your employees in writing, in the predominant native language of the workforce, of their rights and protections under that statute.

Section B. [Reserved]

VII. REPORTING REQUIREMENTS

A. PERFORMANCE REPORTING

This will be negotiated with the Government based on the project circumstances.

B. FINANCIAL REPORTING

1. Interim Federal Financial Report (SF 425). A quarterly Federal Financial Report (SF 425) is required within 30 calendar days after the end of reported quarter period: 3/31, 6/30, 9/30, and 12/31 and must include in the remarks the location of financial records and a point of contact for the Government to obtain access to the financial records associated with this agreement.
2. Final Federal Financial Report (SF 425) is required within 90 calendar days of the completion date for the term of this Assistance Award and must include in the remarks the location of financial records and a point of contact for the Government to obtain access to the financial records associated with this agreement.
3. Federal Financial Report (SF 425) is required if receiving advance payments; the awardee shall submit a Report of Federal Cash Transactions (SF 425) within 15 calendar days following the end of each quarter. The Recipient shall provide forecasts of Federal cash requirements in the "Remarks" section of the report.

C. AUDIT REPORTS

The Recipient shall ensure that if an independent auditor is used for this award, copies of any audits conducted shall be provided to the Government. At a minimum, the following should be provided a certified statement from the independent auditor evidencing that Recipient has complied with all requirements of this agreement. Upon completion or termination of this Grant, the Recipient shall provide a list of all audits conducted which reviewed expenditures under this Assistance Award.

D. PROPERTY REPORTS

The recipient shall submit annual inventory listing to all equipment in excess of \$5,000 acquired under this Assistance Award.

E. DOCUMENT SUBMISSION

All reporting requirements above shall be sent via email to the Government Technical Program Point of Contact.

The terms and conditions of the award will provide the specifics on how to submit the reports and any required sections for those reports.

VIII. OTHER ADMINISTRATIVE REQUIREMENTS

Not applicable.

IX. FEDERAL CONTACTS

General questions regarding the Minerva Research Initiative should be directed to: <https://minerva.defense.gov/Contact/>. Many questions may also be answered at <https://minerva.defense.gov/FAQ/>.

Technical questions should be directed to:

Dr. David Montgomery, Basic Research Office

Office of the Undersecretary of Defense for Research and Engineering (OUSD(R&E))

E-mail: David.w.montgomery61.civ@mail.mil

For all other questions on this NFO, please contact Jonathan Bertsch at

jonathan.e.bertsch.civ@mail.mil.

X. OTHER INFORMATION

All information systems, electronic or hard copy which contain Federal data need to be protected from unauthorized access. This also applies to information associated with DoD grants and contracts. Congress and the OMB have instituted laws, policies and directives that govern the creation and implementation of federal information security practices that pertain specifically to grants and contracts. The current regulations are pursuant to the Federal Information Security Management Act (FISMA), 44 U.S.C. 3541 et seq. The applicability of FISMA to NIH recipients applies only when recipients collect, store, process, transmit or use information on behalf of HHS or any of its component organizations. In all other cases, FISMA is not applicable to recipients of grants, including cooperative agreements. The recipient retains the original data and intellectual property, and is responsible for the security of this data, subject to all applicable laws protecting security, privacy, and research. If and when information collected by a recipient is provided to HHS, responsibility for the protection of the HHS copy of the information is transferred to HHS and it becomes the agency's responsibility to protect that information and any derivative copies as required by FISMA.

Per 2 CFR § 200.216, funds may not be used to procure telecommunications equipment or video surveillance services or equipment produced by:

- Huawei Technologies Company,
- ZTE Corporation Hytera Communications Corporation,
- Hangzhou Hikvision Digital Technology Company,
- Dahua Technology Company,
- any subsidiary or affiliate of such entities

XI. APPENDIX A: INITIAL WORK PLAN REQUIREMENTS

Applicants may use the format they feel best depicts their project. The work plan should only cover the fiscal years that are supported by the budget included in the application.

In addition to the above, applicants must include the Reporting Requirements in their work plan, as well as the following:

Acknowledgment of Support

The Recipient is responsible for assuring that an acknowledgment of support is made in any publication (including World Wide Web pages) of any material based on or developed under this project, in the following terms: “This material is based upon work supported by the Office of the Secretary of Defense (OSD) Minerva Research Initiative program under Grant No. <Insert Grant No.>. The views expressed in written materials or publications, and/or made by speakers, moderators, and presenters, do not necessarily reflect the official policies of the Department of Defense nor does mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government.”

Review for Sensitive Information

Prior to the public release of these materials, the Recipient is responsible for assuring that the Technical Representative is provided access to an electronic version of every publication of material based on or developed under this award, clearly labeled with the award number and other appropriate identifying information, so that the content can be assessed for proper release of sensitive information.

Copies for Minerva

Promptly after publication, the Recipient will provide the Technical Representative access to an electronic version of every publication of material based on or developed under this award, clearly labeled with the award number and acknowledgement of support (see above).

XII. APPENDIX B: MINERVA RESEARCH TOPICS OF INTEREST

A. TOPIC 1: SOCIETAL COHESION IN CRISIS

POC: David Montgomery, Office of the Under Secretary of Defense for Research and Engineering, david.w.montgomery61.civ@mail.mil

The ability of a group, or society more broadly, to hold together is central to social life. As the nature of the social unit varies cross-culturally and across political systems, this topic seeks to understand the nuances of shifting social and political cohesion in the face of diverse and evolving crisis situations. While part of the concern is a question of societal resilience (the focus of Topic 2), a related fundamental interest is in the endogenous and exogenous factors that bring groups together/apart, the temporal and situational nature of group solidarity, collective memory, and the relationship between cohesion and motivation toward a stated end. A comparative focus should be given to individual and group behavior within individualist and collectivist societies and how the scale of cohesion—micro-, meso-,

macro-scales—influences the response and its sustainment in face of adverse conditions. New approaches to measure social, cultural, religious, political, and economic cohesion—as well as key intermediary variables, including expectations of (self-) performance, perception of status, trust, and morale—that can utilize existing data streams or for which data can be collected quickly and remotely with qualitative fidelity, are encouraged.

This topic seeks to develop or elaborate upon descriptive models that can be used to assess or predict societal cohesion, as well as analytical models that offer new insights into individual and group formation, particularly in response to crises. Approaches should employ empirical testing and explicitly consider the generalizability of findings across contexts. Particular value will be placed on approaches that can mediate between assessing individual commitment to anticipate the behavior of groups and organizations. This includes not only the resolve of national political leadership, but also those segments of the population who would engage in popular resistance—including armed combatants at different levels of organization and the interactions between these actors—and a group's willingness to take actions, including deterring or preparing for conflict.

Specific foci may include, but are not limited to:

Will-to-resist

- Generate frameworks and models of will-to-resist—both passive and active forms of resistance, including those leading to violence—that identify pathways of internal and external influence that may impact national political leadership, key populations sectors, and/or organizations of armed combatants.
- Consider how models of will-to-resist apply in cases of proxy or regional conflict. How does external support influence commitment to a cause of resistance and what types of factors shape the evolution of resolve?
- How do potential third-party entrants (allies and partners) into conflicts influence will-to-resist of the varied parties involved? To what degree are political, economic, and military elites influenced versus general populations?
- In what ways do pre-conflict, early conflict, and protracted conflict influence will-to-resist dynamics?

Trusted relationships

- What is the role of leadership and morale in sustaining cohesion and how does this vary by role? Does the role change based on social, cultural, religious, or political leadership?
- How do factors like well-being, inequality, status, and social division impact sociological distinctions between trust and confidence in relation to social and political cohesion? To what extent do these factors have different impacts on various types of crises?
- To what extent are relationships of cohesion within individual and group control, and what leads to breaking down or building up commitments to a particular cause?

- How does collective memory impact social cohesion and relationships in light of contemporary crises?
- What is the relationship between social identity and societal cohesion, and how does diversity of identities across different levels impact cohesion development and sustainment?
- How is cohesion repaired or reformed at the micro-, meso-, and macro-levels in face of and following a crisis, particularly one of adverse outcomes?

Technological impact

- How does technology and evolving relationships with it (the focus of Topic 4) impact cohesion? Does it do so differently in different quotidian and crisis contexts?
- In what ways do time and scale influence the extent to which technology influences will-to-resist and/or trusted relationships within/between/among coordinating groups?

B. TOPIC 2: CONSIDERING SOCIETAL RESILIENCE AT MULTIPLE SCALES

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Resilience as a concept has existed for centuries. It has received increasing attention during the world's COVID pandemic experience, as societies had to adjust not only to a life-threatening disease, but also the effects that it imposed that had social, cultural, economic, and political consequences with unequal impact, an impact of increasing complexity when considered in conjunction with the opportunities and challenges of globalized societies, such as fragile global supply chains. Resilience today has multiple definitions, many of which are discipline-, location-, and/or context-specific. There are models that consider resilience in terms of socio-ecological systems, socio-technical networks, and complex adaptive systems. While these approaches, considerations, and models continue to advance resilience research, there are some gaps in understanding how different societies of the world respond and recover from systemic shocks.

Social science has seen a steady growth on resilience research. Current literature tends to follow two primary tracts: conservative resilience, which is akin to achieving stability after disruption and persist in its current state, and transformative resilience, which considers systemic renewal or adaptation after experiencing shock(s) resulting in a change. Many studies concentrate on specific shocks, such as disaster response, climate change, or specific traumas. The most recent theoretical addition is equitable resilience, which considers social vulnerabilities and [un]equal access to power and resources (Matin, Forrester, & Ensor, 2018). Within this literature, a small subset uses the term "social resilience," which generally combines the two tracts mentioned above, focuses on a specific shock, and examines one or more social effects on the group level. Most recently, in response to the recent pandemic, societal resilience

research has begun to expand. This growth is important because a large percentage of existing resilience research focuses on the individual level, which while important, does not usually consider different societal structures, social networks, and models that may espouse differing preferences for collectivism, family, generation, culture, language, gender, relationship to nature, lifestyle, communication, technology, health, societal norms, and worldview, among other potential variables and values. Understanding these variables in the context of absorbing and recovering from multiple systemic shocks and in co-occurrence with other systems at different timescales underscores the need for more research on societal resilience globally, which may require interconnected but distinct conceptualizations at various levels/scales. This topic calls for development of the science of societal resilience with consideration for societal variations and values.

For purposes of this topic, societal resilience is meant broadly as a society's ability to absorb, and when necessary, adapt to and/or bounce back from multiple disruptive external and/or internal shocks experienced at the same time, in close proximity, or as consequences to previous shock(s), with consideration for that society's organization, culture, and values. Because this preliminary definition is meant as a starting point and does not distinguish between conservative and transformative resilience or consider specific variables or regions, proposers should refine as needed to support the proposed research. Differences that may occur societally across the world are critical aspects of this topic, particularly as these societies experience complex, systemic, shocks or disruptions that may include sociotechnical components and affect people globally, albeit unevenly.

The topic does not prescribe any particular use case(s) but does anticipate that focusing solely on one type of shock or societal sector will be insufficient to meet the topic's intent. Experimental approaches are encouraged.

Key areas of interest include, but are not limited to:

- Develop theory/ies and refined definition(s) that consider societal resilience with co-occurring systems across the globe at multiple levels/scales
- Conduct cross-cultural comparative studies on societal resilience in various regions or contexts and explore the techniques used in different societies to absorb and recover from systemic shocks
- Discover how societal resilience as a concept should be constructed from non-Western perspectives and explore whether new methods are required to understand and assess such resilience
- Assess and test whether the concept of equitable societal resilience can be developed and measured
- Explore how to integrate local, indigenous knowledge systematically best and appropriately into societal resilience and determine how this knowledge revises the construct, if it does, and if so, how it affects different levels and scales
- Measure societal resilience worldwide at national and, if possible, sub-national or other levels/scales, with consideration for local assessment of societal resilience, and determine how best to normalize these measures, if appropriate

- Identify key variables that influence type of and effectiveness of co-occurring societal resilience responses and outcomes (conservative, transformational) and how that differs based on shock characteristics (intensity, duration, timescale, etc.)
- How does co-occurring societal resilience look under different types of stress, atypical compared to systemic, and when types differ between systems (e.g., societal resiliency in response to a prolonged, low intensity systemic shock and economic resiliency in response to an acute, momentary shock), and how does this look at different levels
- Develop methods and/or models to understand when societal resilience(s) will yield a conservative compared to a transformational outcome, to incorporate any new resilience methods/models resulting from data analysis

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Matin, Nilufar, John Forrester, and Jonathan Ensor. 2018. What is Equitable Resilience? *World Development* 109: 197-205.

C. TOPIC 3: SOCIOTECHNICAL ADAPTATION TO CLIMATE, FOOD, AND WATER STRESS
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Climate and environmental change are increasingly accepted as a major issue facing societies, and a defining global challenge with significant potential to reshape future security and stability. As outlined in the DoD Climate Risk Analysis Report (2021) the associated risks include mass migration, altered patterns of infectious disease, water and food insecurity, degraded livelihood systems, political instability, supply chain disruptions, global conflict, and social fracturing, as well as adverse effects on an array of key economic sectors. The pace at which developed and emerging economies and nations can formulate a response to mitigate the complex social impact of climate change, including stress put on food, water, and shelter, is certain to be uneven and likely to require scientific, political, and ultimately pragmatic solutions that differ by location. This topic thus focuses on the development of approaches to describe and assess efficacy of climate change adaptation strategies, explores the relationship between social and technical “solutions,” and the opportunities and challenges associated with implementation and adoption. These approaches may be applied to characterize pertinent systems, component subsystems, and their interactions to determine whether we can gain sufficient insight to understand how systems adapt and which strategies may generalize. Areas of work within this topic may focus on a specific place or a particular adaptation strategy; comparison, when possible, is encouraged.

Food and food production systems, for example, are deeply embedded in social, material, economic, and cultural systems. Climate change is among the factors that shape ongoing stresses to such systems, including weather-related stresses on production and distribution systems, geopolitical dynamics affecting trade and conflict, demographic trends including population growth and urbanization within the

context of disruptive technologies such as AI, automation, supply chain, and cyber-risk. As we consider the future of food system stability and sufficiency—or water, shelter, and corollary human needs—what social and technical challenges need to be met to facilitate stable and thriving communities?

While models increasingly offer more detailed projections of how populations might be impacted by climate change (although with assumptions that may not hold), this topic focuses on the social and sociotechnical challenges and opportunities of response. While societal cohesion (Topic 1), resilience (Topic 2), and responses to technological change (Topic 4) are all relevant, the focus here is on adaptation which is likely to be culturally, socially, politically, and economically varied. There is particular interest in developing new ways of thinking and responding that appreciate innovations in depicting these systems and their dynamics, efficacy of different approaches to govern vital human systems such as food and clean water for collective benefit, delimiting types of responses to social and material change, interconnections between physical, biological, and social dimensions of adaptation to historical extremes, the importance of social needs such as the human need to belong, and the challenges and potential opportunities of centralized and/or distributed adaptation across different environments, communities, and scales.

Specific foci may include, but are not limited to:

- How do we describe and measure the efficacy of climate change adaptation strategies and outcomes in human dimensions? Do reflections of social, economic, and other manifestations of equity track qualitative and quantitative differences in impacts of climate change adaptation? Are there robust, practical methods to assess the value of ecosystem services, and their changes through time with sufficient granularity to understand inter-group dynamics across different levels of society? How will impacts of climate adaptation affect different aspects of national security?
- New understandings and approaches to governance managing the relevant Commons for desired collective outcomes in contexts of evolving needs, moral/ethical/societal norms, and population shifts
- What are the relationships between climate change, food and water access, shelter, and the performance of financial, political, religious, or other institutions, economic sectors, and national security? What methods can be applied to determine whether and how different types of social systems are affected by the social, economic, and political responses to environmental change?
- What are the implications in human dimensions of intentional and/or uncontrolled changes to meet and manage environmental constraints and resource availability?
- How does the nature of economic interdependence (or isolation) affect the management of environmental challenges across various geographic and political-economic scales?
- How might the advent of more distributed provisioning systems that use technological advancements to reshape the production of food, energy (heating, cooking) and/or building materials away from long, highly specialized supply chains dependent on annual production cycles affect livelihoods and labor, risk of

food insecurity, economics and adaptation of economies, politics, ideologies, and geopolitics, and of formal and informal social structures within and between communities? If there are multiple ways such systems could facilitate food sovereignty, are there mechanisms by which to predict which way will be most successful in a given context(s)?

- How can emerging technologies help to mitigate the adverse impacts, threats, and risks due to climate change, creating unexpected benefits (e.g. technological breakthroughs in distributed production, increased social coherence through better risk governance, etc.), and what social challenges and opportunities do those technologies present? How does this vary across different societies or societal segments? How do risks in adopting unfamiliar technologies influence the provision of these technologies?
- How can traditional and indigenous approaches to climate variability, food, water, and shelter augment local adaptations of sociotechnical approaches to changing stresses on one's lived environment?

D. TOPIC 4: SOCIAL IMPACT OF TECHNOLOGICAL CHANGE

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Throughout history, technology had been influential in driving societal change. Most recently, this has included an evolving relationship with information, characterized by innovations that have transformed how information is transmitted, stored, and ultimately used. Advances in high-performance computing, optic networks, near-limitless digital storage, (semi-)autonomous machines, transportation of goods and ideas, artificial intelligence, etc., have (and are) impacting sociocultural, economic, political, and even the psychological understandings of social relations. The nature of society across local- to global-scales has been impacted by new networks, interdependencies, and imagined futures that both enhance and threaten social orders.

This topic seeks to explore the impact(s) of emerging technologies on social structures and concomitant relationships. Particularly, it is comparatively concerned with how the impact of technological change varies across different societies and across micro-, meso-, and macro-scales. It is assumed that proposals will similarly seek to understand how/if different emerging technologies lead to different categories of social impact(s) and how varied international approaches to emerging technological change may present new opportunities and risks to local-, regional-, and global-orders. Furthermore, proposals should include an appreciation of the moral and ethical implications technological change may present to different societies.

Specific areas of interest include, but are not limited to:

- The impact of changing relationships to knowledge and skill development, and the supplanting of expertise, particularly in relation to information that is heavily processed with minimal input by humans, such as artificial intelligence processing information and turning it into “knowledge” and in some contexts, decisions.

- How will institutions traditionally charged to facilitate learning evolve in societies where the construction of knowledge is no longer solely, if at all, undertaken by the human? How would institutions differ across societies?
- The impact of emerging technology on the nature and characterization of work such as organizational structure, division of labor, and what it means to be a professional.
- How has emergent technology impacted society's relationship with it, what are new risks for individuals and groups, and what are societal impacts when competing interests arise among allies, partners, and competitors.
- How do differences in technology penetration, such as speed and intensity, effect adoption of or resistance to technology? What is the societal impact of uneven adoption rates across different scales and how does this influence perceptions of well-being.
- The impact of increased incorporation of virtual-based and fully-integrated platforms into everyday life.
- How do different approaches to Future Generation Wireless Technology and connectivity, be it centralized or decentralized, restricted or more open and collaborative, impact social relations, perceptions of security, and application/usage.
- How will technology proliferation impact know resource costs, and what are the effects on society and concomitant relationships? Likewise, how can unknown resource costs, along with societal implications, be identified?

E. TOPIC 5: PARASOCIAL RELATIONSHIPS, SOCIAL MEDIA, AND RADICALIZATION
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Social media engagement has been shown to be a significant pathway to violence, terrorism, fanaticism and recruitment into cultish social formations (Montell 2021), defined as tight, insular groups that bear a resemblance to cults. Montell (2021) and Danesi (2023) have explained how language and social psychology play important roles in the development of a radical mind-set; others (Haidt 2013, Morozov 2011) have considered related, critical dimensions of the formation of authoritarian perspectives and the use of media to develop “followerships” with the potential for promoting radicalization, violence, and societal disruption. A social media cottage industry developed and incentivized through social media monetization schemes has played a significant role in the promotion of malign content and extending the reach of influencer celebrities who often participate in the creation of malign content either as a primary or secondary income, seeding social media platforms with malign content that is a critical factor in the creation of cultish social formations. This is an international phenomenon, prevalent in many countries outside of the United States, and a significant concern in Europe, South America, and Asia (Morozov 2011).

The term “para-social interactions” was coined by Donald Horton and R. Richard Wohl in 1956. Their research centered around the rise of mass communication, particularly television, which enabled new kinds of psychological attachment. In para-social relationships, viewers develop one-sided relationships with a media

figure, and experience a sense of intimacy or connection, even though the media figure is usually not aware of their existence. Even before the identification of this phenomenon, early indications of the emergence of such relationships were evident in the rise of “fan” culture with regard to radio. Today, social media has provided the affordances for relationships and communities that exist primarily in the imaginary world of cyberspace, where “cultish social formations” often flourish.

Cultish social formation in online communities has recently been a focus of research, primarily in the United States. As noted above, a cultish social formation is a tight-knit, insular group that bears a resemblance to cults (Montell 2021) which can lead people to not engage with the broader society or even to actively attempt to undermine it. These “cultish” social formations often have a key, charismatic leader who claims to have access to exclusive truths or solutions and their own lexicon or specialized vocabulary to separate in-group members from out-group members. These groups often demand purity or strict adherence to the group’s beliefs, fostering an environment where questioning or dissent is met with disapproval or even ostracism. Social media topic communities have been shown to be an important conduit into fanaticism; cultish social formations like QAnon and other anti-social cultish formations that promote extremism have become a conduit to terrorism and radical extremism. These formations often have additional influencer accounts that serve particular sub-audiences of the larger formation. These accounts may in turn serve the needs and interests of an influencer or media celebrity “up the chain.”

Social media platforms present (and benefit from) the opportunity for audiences to develop para-social relationships with one another, aided and abetted by the algorithms of the platforms to hyper-charge these many-to-many relationships. Individuals can even leverage their popularity among peers to become “influencers,” achieving that more traditional type of para-social relationships with their peers that provide them with new power to shape discourses (and achieve economic rewards from communication).

Montell (2021) describes how cultish social formations involve the use of language and emotional content to develop in-group identities that center around the group. These processes, which often destroy old social identities and social connections, can cause individuals to sever ties with family and friends. This may be necessary to create the isolation needed to accept the group’s belief system, norms and values. These new beliefs and values may be contrary to their previous beliefs and values. Other research on moral psychology (Haidt 2013) and cognitive linguistics (Danesi 2023) expand on the social science of the power of languages to shape group belief and behavior. Influencer-led groups, where strategic objectives or more utilitarian objectives may be in play. The use of social psychological tactics to develop cultish social formations can be relatively benign (such as promotion of veganism or paleo diet) and might effectively end there. Others are far less benign, setting up individuals to move down the path of self-radicalization even if they have no real-world relationships that subscribe to the group’s beliefs, norms, and behaviors.

In this research effort, offerors are encouraged to submit a study on highly followed radical influencers on social media in nations other than the United States, to consider such issues as:

- The social and psychological dynamics of para-social interactions and relationships in radicalization, extremism, and anti-US discourse
- The role of the influencer in the creation of radicalizing cultish social formations;
- The investigation of compelling content offered by influencers in organizing, socializing and developing radicalizing belief systems
- State and non-state actor influencers (example: Wagner Group Telegram channels, Hezbollah or Hamas Telegram, Twitter (X), or other social media platform) in the development of parasocial social formations with the potential for creating cultish social formations
- How social media monetization schemes contribute to the creation of radicalizing content from influencers
- The social psychological, sociological, or linguistic aspects of influence in social media, to include the strategic and tactical use of language, image, and video to prompt culturally-relevant emotional responses
- The investigation of techniques of education in media literacy to promote audience resilience to radicalization

Social sciences that are of interest to this solicitation are sociology, anthropology, political science, linguistics, cognitive linguistics, media studies, communications, social psychology, and the economics of social media.

This solicitation invites the study of the topic communities with the potential for radicalization and the promotion of violence, group polarization, and civil instabilities outside of the United States. The essential focus of such studies is the economic and social ecologies of cultish social formations that focus on social media influencers—accounts with very high followerships—and those accounts that seek to become such influencers.

This effort will study the spread of extremism, hate, fear, and conspiracy theory as it spreads to social media audiences through parasocial relationships and interactions. The sociological, social psychological, and cognitive science of how influencers develop into radicalizing social media personalities, the social networks and economic networks and algorithmic maneuvers that position influencers optimally for broad reach, and the influencer's use of language, video, audio, and other affordances to provide compelling content suitable for the development of cultish social formations are all good candidates for a successful proposal. Online and offline influence can be considered. The objective is to develop a deeper understanding of audience relationships with parasocial others, in either a one-to-many or many-to-many parasocial relationships that lead individuals deeper into cultish social formations that promote self-radicalization. The economic incentives for social media celebrities and the role of monetization schemes to create conducive environments for the development of toxic parasocial groups and radical extremist discourses may also play a role in the study.

The study should offer, as part of its deliverables, new insights into cultish social formation processes and new ideas for how to mitigate radicalization, develop audience resilience to online influence, and how to identify the techniques used to isolate, manipulate, and radicalize audiences across the spectrum of conflict. The social, cultural and political contexts of the chosen case studies are expected to be an integral part of a successful proposal.

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F. TOPIC 6: TEMPORAL ORIENTATION AND STRATEGIC CONSIDERATIONS

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In *The Politics and Science of Prevision: Governing and Probing the Future*, Wenger, Jasper, and Caveltly (2020) state that modern “shifts in global economics and politics are in line with asynchronous shifts in the temporal thinking in Western and in Chinese politics.” The quote specifically references Chinese temporal orientation as distinct to the West, yet differences in perceptions of temporality exist across the world, as time plays a factor in worldview, outlook, decision-making processes, and in other cultural aspects. Where differences exist, they may create tensions between actors and impact relationships. These impacts may affect strategic interactions, and thus require deeper understanding.

Social science, and in particular, anthropologists and political scientists, have engaged in a growing body of literature related to time orientation and temporality since the 1970s. The literature contains multiple frameworks related to time orientation. Time has been categorized as cyclical, linear, or spiral; outer and inner; and monochronic or polychronic, among other approaches. Although the topic remains debated, many researchers view cultural understandings of time as social constructs continuously reinforced through sociocultural practices. They are not static, but rather dynamic and evolving processes reflecting how cultures change over

time responding to intrinsic and extrinsic factors. Within this discussion, time orientation has progressed from a singular cultural dimension to being considered a culturally-shaped cognitive process, sometimes influenced through historical memory. Less commonly, scholars consider time orientation from an affective lens to elucidate how it affects behavior. Perceptions of time and timing, and how they inform or are informed by cognition and affect, influence all aspects of life in a society, to include planning, decision making, and resulting actions. Thus, there is particular interest in how temporality and worldview affect strategic decision making and relationships.

Management literature has a growing body of research that incorporates time-related concepts, particularly for strategy and strategic processes, and continues to note temporality as a major research gap. This literature focuses on the role of temporality in decision-making processes and planning. Because strategy involves short- and long-term decision making and planning, the connection between temporality and strategy, which could include multiple facets of the strategic, such as thinking, planning, pause, surprise, etc., are understudied conjointly, there is a need to fill gaps in current knowledge. Specifically, there is a need to further interrogate the relationship between temporality and strategy to determine how they impact sociopolitical issues and relationships globally, and in which circumstances they create challenges and opportunities.

Successful proposals will focus on developing novel basic research on temporal orientation and strategy (i.e. where strategy relates to one or more of the following areas: strategic decision making, strategic thinking, strategic adaptation, strategic planning, strategic culture, strategic surprise, to include how competing relationships may interact, synchronously or asynchronously, to influence geopolitics or sociopolitical issues; and/or advance an understanding of how and when temporal orientation and differences among them affect or should inform strategic thinking, strategic action, and strategic pause). Proposals should explicitly identify and define the aspect(s) of strategy the research will interrogate. Also of interest is how multiple aspects of the strategic might combine in “strategic competition.” This topic does not prescribe specific use cases but recommends that the team include cultural expertise for those proposed. Projects that include experimental approaches and/or consider how research results may lead to predictive outcomes are encouraged.

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G. TOPIC 7: EVOLVING CONTEXTS OF DETERRENCE

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Deterrence exists across multiple levels of society, and indeed is part of what regulates various aspects of social behavior. Within the national security context, the concept of deterrence has historically helped inform strategic decisions related to planning, investment, and policy. As the global environment has evolved, the concept of integrated deterrence—which is at the center of the 2022 National Defense Strategy and entails working seamlessly across warfighting domains, theaters, the spectrum of conflict, other instruments of national power, and networks of alliances and partnerships—has become a more holistic way of considering the dynamic relationship across complex sociopolitical domains.

This topic focuses on predictive models of deterrence and/or escalation management strategies. It assumes nuance in how deterrence may be comparatively and cross-culturally understood, and preference will be given to proposals that empirically test such models. We are especially interested in projects that develop and implement innovative causal identification strategies or leverage new measures or data and explicitly address the generalizability of findings and the extent to which similar deterrence logics are applicable across contexts and scale. It is assumed multidisciplinary approaches will be required to advance new understandings of deterrence and the varied sociocultural, economic, and political relationships it influences.

Specific foci may include, but are not limited to:

Tailored Deterrence

- Deterrence is predicated on holding valued objects at risk. What do leaders—national or within ruling coalitions—value and how does this vary across political systems? How does this vary across micro-, meso-, and macro-levels? Are these “valued objects” conditional? How do policy tools influence these objects at risk?
- How do variations in U.S. competitor decision-making processes (e.g., the People’s Republic of China, Russia) influence the likelihood that specific U.S. actions will deter or provoke? With these variations, how and where do competitors make decisions about potential responses across the competition continuum?
- Recent deterrence efforts have attempted to influence the national leader(s) by holding at risk something valuable to elites, sometimes individuals, in the belief that deterrence can work indirectly. What are the dynamics of intra-elite relations and their influence on the national government?
- How can competitors’ public communications be used to understand (or misunderstand) their decision-making processes and the likelihood of deterrence success? In addition to public documents, to what extent might other actions or activities convey information about their decision-making processes?
- What signaling mechanisms are most effective at deterring and in what contexts does this change?
- How do competitors perceive military and non-military deterrent signals differently? How stable are such perceptions (i.e., can they change rapidly and

unexpectedly)? Given the lack of complete information, (historically) to what extent have foreign observers been able to accurately understand competitor perceptions and changes in those perceptions?

- What are reliable empirical measures for whether deterrence is being sustained, strengthening, weakening, or at risk of failing? What are the best measures for (adversary) decision-making? Do gain/loss asymmetry, decision making under uncertainty, or other models of economic actors affect the generalizability of deterrence models?

Whole-of-Government Approaches to Deterrence

- Can military and non-military (diplomatic, informational, economic, or other activities) instruments of power be used in whole or in part to produce effective deterrence? If so, does the use of military and/or non-military instruments of deterrence differ in impact, and how do the effects of one interact with the other? Do the dynamics change when one side has many options with which to deter while its competitor has few or one, e.g. force alone?
- Can historical lessons on successes and failures of coordination between diplomatic and military strategies inform the development of future deterrence strategies? If so, how, and what are the limits of reference class forecasting to understanding contemporary challenges?
- How can whole-of-government approaches best be leveraged to de-escalate tensions while defending important interests? How do such efforts differ across political, social, and economic systems?

State System and Deterrence

- How do multi-party and multi-level conflicts affect deterrence? How do the different roles—belligerent, audience, bystander, mediator, etc.—assumed by the powers affect deterrence?
- What approaches can governments take to deter multiple adversaries at once? How do steps taken to deter one adversary impact deterrence of another adversary? How often do signals intended for one adversary impact the decision calculus of another (adversary, ally, or partner)? How does attempting to deter multiple adversaries affect the choice of means, strategies, and ends by the deterring power?
- To what extent is value-based messaging or value-based deterrent actions effective across heterogeneous values systems?

Technology and Deterrence

- How does technology (current and emerging) impact deterrence dynamics? Do emerging technologies pose novel risks and, if so, are new approaches to deterrence necessary to address them?
- How does revealing or concealing capabilities in different technological and strategic contexts influence deterrence outcomes?
- How and to what extent can strengths in some domains offset weaknesses in others?

H. TOPIC 8: WAR TERMINATION PROCESSES AND PROSPECTS

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Dynamics of war termination have evolved over time, from the more limited aims of wars in the eighteenth century, through the more decisive objectives of many wars in the 19th and early 20th centuries, then back to the “limited wars” of the Cold War period. As such, there is an evolving need to understand the means by which contemporary conditions affect how leaders seek to terminate conflicts and the conditions under which they will be successful.

This topic focuses on empirical and explanatory models of the war termination process to understand the progress and outcomes of this dynamic process. It assumes that the belligerents’ choices are informed by the structure of interaction, the intensity and domestic and international dimensions of the conflict, and the cultures of the belligerents. We are particularly interested in projects that develop innovative understandings of the evolution of actors’ preferences during the course of fighting. Preference will be shown for proposals that utilize multidisciplinary teams to qualitatively and quantitatively characterize the social, cultural, economic, and political contexts of the problem at the micro-, meso-, and macro-scales. It is also assumed that the problem of war termination requires both theoretical and empirical investigation.

Specific foci may include, but are not limited to:

Conflict Effects on Preferences and Choices

- How can we understand the varied costs associated with war—e.g. general economic costs, societal harm, etc.—how they change, and what drives belligerents to negotiate in specific contexts?
- How does war termination as a dynamic process affect actors’ preferences and choices? What theoretical and empirical insights can we get into this process?
- How does the military strategy—the application of the means of destruction to control the pattern of conflict—interact with the political strategy and the war termination process?
- What is the interaction between the negotiating process and an ongoing conflict? Can negotiation set condition for military action? Can fighting set conditions for negotiating? How can signals sent in negotiations affect incentives for fighting? How do interests change during the progress of a conflict? How do interests change as the conflict's end approaches?

War Termination, Strategy, and the Causes of War

- Are there incentives when a war is started that complicate war termination? Are there incentives in political or military strategy that discourage thinking about the termination process?
- How should military strategy account for the dynamics of war termination?

- How do the stakes of a war influence which “exit ramps” or termination strategies are feasible?
- How have the terms of war termination historically influenced subsequent deterrence and the likelihood of future conflict?

Conflict Structure and War Termination

- How do multi-level conflicts or the conflict structure affect the war termination process? Does the number of belligerents and neutral parties affect the process? Does the kind of belligerent—e.g., state or non-state—matter?
- Conflicts may occur at several levels. All wars will include intra-belligerent as well as inter-belligerent dynamics or factors. Consider the wars in Asia at the beginning of the 20th century as an example of a multi-level conflict: (1) the civil war in China; (2) the conflict between China and Japan; (3) the war between the Allied powers and Japan. How do these levels interact and affect the war termination process at each level?
- How do intra-elite dynamics influence war termination?