FUNDING OPPORTUNITY ANNOUNCEMENT (FOA)
FOA #**WHS-AD-FOA-21**
<u>MINERVA RESEARCH INITIATIVE</u>

INTRODUCTION:

This publication constitutes a FOA as contemplated in the 32 CFR 22.315(a). A formal Request for Proposals (RFP), solicitation, and/or additional information regarding this announcement will not be issued.

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

Awards will take the form of grants. Therefore, proposals submitted as a result of this announcement will fall under the purview of the Department of Defense Grant and Agreement Regulations, 32 CFR Part 22 (DODGARs). This grant and any subawards are also subject to 32 CFR Part 32.

Any assistance instrument awarded under this announcement will be governed by the award terms and conditions that conform to DoD's implementation of OMB circulars applicable to financial assistance.

Prospective proposers shall include responses to Representation Regarding an Unpaid Delinquent Tax Liability or a Felony Conviction Under any Federal Law-DoD Appropriations, Prohibition on Contracting with Entities that Require Certain Internal Confidentiality Agreements, and Certification Regarding Restrictions on Lobbying in proposal submission. See below for additional information.

Prospective proposers may obtain information by checking the following websites:

- Information regarding this FOA and amendments:
  http://www.grants.gov or
  http://www.defenseinnovationmarketplace.mil
- Information regarding submission of white papers and full proposals:
  http://minerva.defense.gov
- Information regarding Research Directorate (RD), Office of the Under Secretary of Defense for Research & Engineering:
  https://www.acq.osd.mil/rd/

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I. GENERAL INFORMATION

1. *Agency Name/Address*

Washington Headquarters Services/ Acquisition Directorate

2. *Research Opportunity Title*

Minerva Research Initiative

3. *Program Name*

Department of Defense Minerva Research Initiative

4. *Research Opportunity Number*

WHS-AD-FOA-#

5. *Response Date*

White Papers: Wednesday, June 23, 2021   3:00 PM ET
Full Proposals: Wednesday, September 29, 2021   3:00 PM ET

6. *Research Opportunity Description*

The Office of the Secretary of Defense (OSD) is interested in receiving proposals   for the Minerva Research Initiative (http://minerva.defense.gov), a university-led defense social science program seeking fundamental understanding of the social and cultural forces shaping U.S. strategic interests globally. OSD is particularly interested in projects that align with and support the National Defense Strategy, found at:

https://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf

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 nine (9) topics listed below. Innovative white papers and proposals 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 Section IX, "Minerva Topics."

Topic 1: Social Implications of Environmental Change
Topic 2: Resource Competition, Social Cohesion, and Strategic Climate Resilience
Topic 3: Security Risks in Ungoverned, Semi-Governed, and Differently-Governed Spaces
Topic 4: Analysis of Foreign Influence Operations in Cross-Cultural Perspective
Topic 5: Community Studies on Online and Offline Influence
Topic 6: Computational Social Science Research on Difficult-to-Access Environments
Topic 7: Social and Cultural Implications of Artificial Intelligence
Topic 8: Humans and Outer Space
Topic 9: Management and Information in the Defense Environment

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 fairly 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.

7. Point(s) of Contact (POC)

Questions of a technical nature shall be directed to the cognizant Technical Points of Contact:

Science and Technology Point of Contact:
Dr. David Montgomery
Basic Research Office, OUSD (Research & Engineering) and OUSD (Policy)
Email address: david.w.montgomery61.civ@mail.mil

Questions of a business nature shall be directed to the cognizant Grant Officer:

Ms. Christina Gess
Washington Headquarters Services/ Acquisition Directorate (WHS/AD)
Email address: christina.l.gess.civ@mail.mil

Note that many questions may be answered in the *Frequently Asked Questions* section of http://minerva.defense.gov/Contact/FAQ. **Proposers should raise questions they have with the point-of-contact (POC) listed on the proposal description in Section IX at least two weeks before the deadline; queries after that point may not receive a response. Additionally, the due dates for submission of the white paper and/or full proposal will not be extended.**

Applicants should be alert for any amendments that may modify the announcement. Amendments to the original FOA will be posted to one or more of the following web pages:
- Grants.gov Webpage – https://www.grants.gov/
- The DoD Minerva program website – http://minerva.defense.gov/

8. Instrument Type(s)

DoD anticipates that all awards resulting from this announcement will be grants. Grants awarded under this announcement will be governed by the award terms and conditions that conform to DoD's implementation of OMB circulars applicable to financial assistance. See: https://www.onr.navy.mil/Contracts-Grants/submit-proposal/grants-proposal/grants-terms-conditions.aspx

9. Catalog of Federal Domestic Assistance (CFDA) Number

12.630

10. Catalog of Federal Domestic Assistance (CFDA) Title

Office of the Secretary of Defense (OSD) Basic, Applied, and Advanced Research in Science and Engineering

11. Other Information

Work funded under a FOA may include basic research and applied research.

As defined therein the definition of fundamental research, in a DoD contractual context, includes [research performed under] grants that are (a) funded by Research, Development, Test and Evaluation Budget Activity 1 (Basic Research), whether performed by universities or industry or (b) funded by Budget Activity 2 (Applied Research) and performed on campus at a university. The research shall not be considered fundamental in those rare and exceptional circumstances where the applied research effort presents a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense, and where agreement on restrictions have been recorded in the grant.

Pursuant to DoD policy, research performed under grants that are a) funded by Budget Activity 2 (Applied Research) and NOT performed on-campus at a university does not meet the definition of fundamental research. In conformance with the USD (R&E) guidance and National Security Decision Directive 189, WHS/AD will place no restriction on the conduct or reporting of unclassified fundamental research, except as otherwise required by statute, regulation, or Executive Order. For certain research projects, it may be possible that although the research being performed by the Grantee is restricted research, a sub-awardee may be conducting fundamental research. In those cases, it is the *Grantee's responsibility* in the proposal to identify and describe the sub-awardee unclassified research and include a statement confirming that the work has been scoped, negotiated, and determined to be fundamental research according to the Grantee and research performer.

Normally, fundamental research is awarded under grants with universities. Potential prospective proposers should consult with the appropriate program Technical POCs to determine whether the proposed effort would constitute basic research or applied research. **Minerva funds basic, not applied, research.**

II.   AWARD INFORMATION

A. Award Amount and Period of Performance:
- Total Amount of Funding Available: $15.0M over 3 years.
- Anticipated Number of Awards: 10–12
- Anticipated Range of Individual Award Amounts: $150 K/year to $1.0 M/year
- Previous Years' Average Individual Award Amounts: $440 K/year
- Anticipated Period of Performance: 3-5 years

DoD anticipates that awards will be made in the form of grants to institutions of higher education (universities).

There is no guarantee that any of the proposals submitted in a particular category will be recommended for funding. More than one proposal may be recommended for funding for a particular category. The Government reserves the right to select for negotiation all, some, one, or none of the proposals received in response to this announcement.

B. Funding Restrictions
An institution may, at its own risk and without prior approval, incur obligations and expenditures to cover costs up to 90 days before the beginning date of the initial budget period of a new or renewal award if such costs: 1) are necessary to conduct the project, and 2) would be allowable under the grant, if awarded, without prior approval.

All pre-award costs are incurred at the recipient's risk. OSD and the military service research organizations are under no obligation to reimburse such costs, if for any reason the institution does not receive an award or if the award is less than anticipated and inadequate to cover such costs.

C. Expectations for Minerva Researchers

1. *Project meetings and reviews*

In additional to an annual Minerva-wide program review held in the Washington, DC area, individual program reviews between the Service sponsor and the performer may be held as necessary. Program status reviews may also be held to provide a forum for reviews of the latest results from experiments and any other incremental progress towards the major demonstrations. These meetings will be held at various sites throughout the country. For costing purposes, potential recipients should assume that 40% of these meetings will be at or near the appropriate Service Headquarters in the Washington, DC area and 60% at other contractor or government facilities. Interim meetings are likely, but these will be accomplished via video telephone conferences, telephone conferences, or via web-based collaboration tools.

2. *Research output*

All Minerva research is unclassified and by federal policy is not subjected to any restrictions on publication or participation by foreign nationals. It is expected that copies of all products emerging from Minerva-supported research, such as academic papers, will be shared with the Minerva program staff.

Publications should acknowledge Minerva Research Initiative support through language such as: "This project was supported through the Minerva Research Initiative, in partnership with [*relevant Service partner issuing grant*] under grant number [*award_number*]." Posters and other publications should include reference to the Minerva program and/or Minerva program logo.

Over the course of the project, Minerva researchers are encouraged to produce 1000-word analytical summaries articulating the broader relevance of the findings presented in these academic papers, that could be shared within the government and/or others interested.

3. *Reporting requirements*

Grants typically require annual and final technical reports, financial reports, and final patent reports. Copies of publications and presentations should be submitted in accordance with award documentation. Additional deliverables may be required based on the research being conducted.

III.   ELIGIBILITY INFORMATION

A. Eligible Institutions

All responsible sources from academia, including DoD institutions of higher education and foreign universities, may submit proposals under this FOA. Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals. No portion of this FOA, however, will be set aside for HBCU and MI participation.

Teams are encouraged and may submit proposals 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 FOA. 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.

B. Other Eligibility Criteria

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.

Number of Applications: There is no limit to the number of applications that an individual PI may have submitted by their institution in response to this FOA.

Cost Sharing: Cost sharing is not required.

IV.   APPLICATION AND SUBMISSION INFORMATION

The Minerva application process is conducted in two stages:

1. White Paper submission (via email)
   Deadline: June 23, 2021   3:00 PM ET

2. Full Proposal submission (via Grants.gov)
   Deadline: September 29, 2021   3:00 PM ET

Stage 1 – **Interested entities are strongly encouraged to submit white papers**, an opportunity for reviewer feedback intended to minimize the labor and cost associated with the production of detailed proposals that have little chance of being selected for funding. Based on an assessment of the white papers submitted, the responsible point-of-contact (POC) (see Section IX) will advise prospective proposers whether the proposals outlined in their white papers were judged to be competitive for Minerva award selection, and will then invite the most promising subset of proposals to submit a full proposal for funding consideration.

Interested entities are strongly encouraged to contact the appropriate POC two or more weeks prior to white paper submission to discuss their ideas. White papers and other technical queries arriving after the deadline are unlikely to receive feedback unless an invitation for full proposal submission has been extended.

Stage 2 – Subsequent to white paper feedback, interested entities are required to submit full proposals. All proposals submitted under the terms and conditions cited in this FOA will be evaluated in accordance with the evaluation criteria stated herein. 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.**

A. General requirements

1. *Document format*

All documents included in both white paper and full proposal packages must be submitted in Adobe Portable Document Format (PDF) in compliance with the guidelines below. Proposals with attachments submitted in word processing, spreadsheet, zip, or any format other than Adobe Portable Document format will not be considered for award. NOTE: Titles given to the white papers/full proposals should be descriptive of the work they cover and not be merely a copy of the title of this solicitation.

Documents must be submitted with the following specifications:

- Paper Size – 8.5 x 11 inch paper
- Margins - 1 inch
- Spacing – single spaced
- Font – Times New Roman, 11 point
- PI's name and institution in header or footer
- Appropriate markings on each page that contains proprietary or confidential information, if applicable.

White papers, supporting documentation, and full proposals submitted under this FOA are unclassified. All proposals shall be submitted in accordance with Section IV.

2. *Marking proprietary or confidential information*

OSD and WHS/AD will make every effort to protect any proprietary information submitted in white papers and full proposals. Any proprietary information included in application materials must be identified. Prospective proposers should be aware, however, that under the Freedom of Information Act (FOIA) requirements, proprietary information contained in white papers and proposals (marked or unmarked) may still potentially be subject to release.

It is the prospective proposers responsibility to notify WHS/AD of proposals containing proprietary information and to identify the relevant portions of their proposals that require protection. The entire proposal (or portions thereof) without protective markings or otherwise identified as requiring protection will be considered to be furnished voluntarily to WHS/AD without restriction and will be treated as such for all purposes.

It is the intent of WHS/AD to treat all white papers and full proposals as proprietary information before the award and to disclose their contents to reviewers only for the purpose of evaluation.

B. White Paper Preparation and Submission

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 "PROPOSAL WHITE PAPER," that includes the FOA number, proposed project title, and prospective proposer's technical point of contact with telephone number, e-mail address, and most relevant area number(s) and title(s) (see Section IX).
- 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 no later than **3:00 p.m. Eastern Time on June 23, 2021**. 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 proposer is responsible for
allowing enough time to complete the required application components, upload the white paper, and submit
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 Section IX), written as:
FY21 Minerva WP - Area [Topic Number]

An e-mail confirmation will be sent to the applicant within two days of submission. Documents submitted
after the deadline or found to be non-compliant with the requirements in 1. above will not be reviewed.

C. Full Proposal Package Preparation and Submission

Full proposal packages must be submitted electronically via Grants.gov (https://www.grants.gov/) no later
than **3:00 p.m. Eastern Time on September 29, 2021**. The forms required for Grants.gov submission are
summarized in Table 1 and described in detail below.

Table 1. Summary of Full Proposal Submission Forms

Form	Attachment	Action
SF-424 (R&R) Application for Federal Assistance		Enter appropriate information in the data fields as described in Section IV.C.i.
		Attach Representation Regarding an Unpaid Delinquent Tax Liability or a Felony Conviction Under any Federal Law – DoD Appropriations to box 18 with other documentation.
R&R Personal Data Form	None	Request voluntary completion of gender field for PDs/PIs Co-PDs/Co-PIs in support of Women in STEM Title IX compliance. This form will not be provided to merit reviewers or used for proposal evaluation.
R&R Senior/Key Person Profile Form (Expanded)	PI Curriculum Vitae (5-page limit)	Attach to PI Biographical Sketch field (LastName_CV.pdf)
	Key Personnel Biographical Sketches (2-page limit)	Attach to Biographical Sketch field for each senior/key person (LastName_Bio.pdf)
	Statement of Current and Pending Support	Attach to Support field for each senior/key person (LastName_Support.pdf)

	None	Complete the Degree Type and Degree Year fields for all persons identified as Project Directors/Co-Project Directors and/or Principal Investigators/Co-Principal Investigators
R&R Project/Performance Site Locations Form	None	Enter appropriate information in the data fields as described below.
R&R Other Project Information Form	Project Summary	Upload to Field #7 (LastName_Abstract.pdf)
	Project Narrative	Upload to Field #8 (LastName_Narrative.pdf)
	Comprehensive Budget Chart	Upload to Field #12 (LastName CompBdg.pdf)
	Letters of Support (optional)	Upload to Field #12 (optional)
R&R Budget Form	Budget Justification	Enter appropriate information in the data fields as described below. Attach budget justification to Section L of the budget form for each applicable year (LastName_Budget.pdf)
R&R Subaward Budget Form (optional)	Budget Justification (optional)_	If project contains a subaward, enter appropriate information in the data fields as described below. Attach budget justification to Section L of the subaward budget form for each applicable year (LastName_SubAwardBdgt.pdf)
SF-LLL Disclosure of Lobbying Activities (optional form)	None	If making a required disclosure, complete and add the form to the application package.

Full proposal package form descriptions:

i. **SF-424 Research & Related (R&R) Application for Federal Assistance Form**
The SF-424 (R&R) form must be used as the cover page for all proposals. Forms are completed in Grants.gov Workspace by either completing the forms on-line using a web browser and/or downloading individual PDF forms, completing them, and uploading them to the Workspace. Complete all required fields in accordance with the on-screen help or "pop-up" instructions on the PDF form and the following instructions for specific fields. To see the instructions, click on the on-screen help icons or roll the mouse over the PDF field to be filled out and additional information about that field will be displayed. For example, on the SF-424 (R&R) the Phone Number field says "PHONE NUMBER (Contact Person): Enter the daytime phone number for the person to contact on matters relating to this application. This field is required." Mandatory fields will have an asterisk marking the field and will appear yellow on most computers. In Grants.gov, some fields will self-populate based on the FOA selected.

Please fill out the SF-424 first, as some fields on the SF-424 are used to auto populate fields in other forms. The completion of most fields is self-explanatory except for the following special instructions:

Field 3 - Date Received by State. The Date Received by State and the State Application Identifier are not applicable to research.

Field 4a - Federal Identifier. No identifier required.

Field 4b - Agency Routing Identifier. Input "RD [Minerva Topic #]" For the Topic #, input the number corresponding to the topic area to which the proposal is being submitted.

Field 7 - Type of Applicant. Complete as indicated. If the organization is a Minority Institution, select "Other" and under "Other (Specify)" note that the institution is a Minority Institution (MI).

Field 9 - Name of Federal Agency. List the "Washington Headquarters Services/ Acquisition Directorate" as the reviewing agency. This field is pre-populated in Grants.gov.

Field 16 - Is Application Subject to Review by State Executive Order 12372 Process? Choose "No". Check "Program is Not Covered by Executive Order 12372."

Field 17 – Certification. All awards require some form of certifications of compliance with national policy requirements. By checking the "I agree" box in field 17, and attaching the representation to field 18 of the SF424 (R&R) as part of the electronic proposal submitted via Grants.gov, the Grant Applicant is providing the certification on lobbying required by 32 CFR Part 28 and representation regarding an unpaid delinquent tax liability or a felony conviction under any federal law – DoD appropriations.

ii. **Research & Related Senior/Key Person Profile Form (Expanded)**
Complete the *R&R Senior/Key Person Profile (Expanded)* form for those key persons who will be performing the research. Information about an individual is subject to the requirements of the Privacy Act of 1974 (Public Law 93 579). The information is requested under the authority of Title 10 USC, Sections 2358 and 8013.

To evaluate compliance with Title IX of the Education Amendments of 1972 (20 U.S.C. A§ 1681 Et. Seq.), the Department of Defense is collecting certain demographic and career information to be able to assess the success rates of women who are proposed for key roles in applications in STEM disciplines. The Degree Type and Degree Year fields on the Research and Related Senior/Key Person Profile (Expanded) form will be used by DoD as the source for career information. In addition to the required fields on the form, applicants must complete these two fields for all individuals that are identified as having the project role of PD/PI or Co-PD/PI on the form. Additional senior/key persons can be added by selecting the "Next Person" button.

The principal purpose and routine use of the requested information are for evaluation of the qualifications of those persons who will perform the proposed research. Failure to provide such information will delay award. Attach curricula vitae (CVs) and/or a Biographical Sketch for the principal investigator and senior staff. CVs should **list any previous DoD funding and engagement within the last eight years** including project titles.

Attach statements of current and pending support for the Principal Investigators and co-investigators listed in the proposal, as applicable. These statements require that each investigator specify all grants and contracts through which he or she is currently receiving or may potentially receive financial support. Describe the research activities and amount of funding.

Page limits for attachments:
- Key Personnel Curriculum Vitae (five (5) page limit)
- Key Personnel Biographical Sketches (two (2) page limit each)

i. **Research & Related Personal Data Form**
To evaluate compliance with Title IX of the Education Amendments of 1972 (20 U.S.C. A§ 1681 Et. Seq.),

the Department of Defense is collecting certain demographic and career information to be able to assess the success rates of women who are proposed for key roles in applications in STEM disciplines.

This form will be used by DoD as the source of demographic information, such as gender, race, ethnicity, and disability information for the Project Director/Principal Investigator and all other persons identified as Co-Project Director(s)/Co-Principal Investigator(s). Each application must include this form with the name fields of the Project Director/Principal Investigator and any Co-Project Director(s)/Co-Principal Investigator(s) completed; however, provision of the demographic information in the form is voluntary. If completing the form for multiple individuals, each Co-Project Director/Co-Principal Investigator can be added by selecting the "Next Person" button. The demographic information, if provided, will be used for statistical purposes only and will not be made available to merit reviewers. Applicants who do not wish to provide some or all of the information should check or select the "Do not wish to provide" option.

iii. **Project/Performance Site Locations Form**
Complete all information as requested.

iv. **Research & Related Other Project Information Form**

Fields 1 and 1a - Human Subject Use. Fields 1 and 1a - Human Subject Use. Each proposal must address human subject involvement in the research by addressing *Fields 1 and 1a* of the *R&R Other Project Information* form.

It is expected that the selected investigative teams will create their HSR plans, applications to required ethics panels and institutional review boards (IRBs), and DoD reviews *after* receiving an initial award.

No DoD-funded HSR may be conducted until the DoD Human Research Protection Official (HRPO) review is satisfied, including DoD-funded pilot studies.

At the time of submittal, for any white paper submissions potentially involving international or medically-related HSR, the perspective investigator must also directly contact the Minerva Program Officer and the DoD Office for Human Research Protections (DOHRP) at DOHRP@mail.mil.

At the time of submittal, for any white paper submissions potentially involving Service Members, prisoners, detainees, children, or other vulnerable populations in the participant pool for HSR, the perspective investigator must also directly contact the Minerva Program Officer and the DOHRP at DOHRP@mail.mil.

For other HSR within the United States, perspective investigators may contact the following offices regarding required documentation and procedures:

Air Force: usaf.pentagon.af-sg.mbx.afmsa-sge-c@mail.mil
Army: usarmy.ncr.hqda-otsg.mbx.otsg-ahrpo@mail.mil
Navy: ONRHRPO@navy.mil

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[2] Proposals with POCs based at the Office of Naval Research will require an application for a DoD-Navy   Addendum to the prospective proposer's DHHS-issued Federal-Wide Assurance (FWA) or the prospective proposer's DoD-Navy Addendum.

Fields 2 and 2a - Animal Use. Each proposal must address animal use protocols by addressing Fields 2 and 2a of the R&R Other Project Information form.

If animals are to be utilized in the research effort proposed, the prospective proposer must submit prior to award a DoD Animal Use Protocol with supporting documentation (copies of Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) accreditation and/or National Institute of Health assurance, Institutional Animal Care and Use Committee (ACUC) approval, research literature Database searches, and the two most recent USDA inspection reports). For assistance with submission of animal research related documents, contact Minerva staff to identify the appropriate point of contact.

Fields 4a through 4d - Environmental Compliance. Federal agencies making grant or cooperative agreement awards and recipients of such awards must comply with various environmental requirements. The National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. Sections 4321- 4370 (a), requires that agencies consider the environmental impact of "major Federal actions" prior to any final agency decision. With respect to those awards which constitute "major Federal actions," as defined in 40 CFR 1508.18, federal agencies may be required to comply with NEPA and prepare an environmental impact statement (EIS), even if the agency does no more than provide grant funds to the recipient.

Questions regarding NEPA compliance should be referred to Minerva program staff. Most research efforts funded through the Minerva program will, however, qualify for a categorical exclusion from the need to prepare an EIS. For those proposing under Navy projects, Navy instructions/regulations provide for a categorical exclusion for basic and applied scientific research usually confined to the laboratory, if the research complies with all other applicable safety, environmental and natural resource conservation laws. Each proposal shall address environmental impact by filling in Fields 4a through 4d of the *R&R Other Project Information* form. This information will be used by DoD to make a determination if the proposed research effort qualifies for categorical exclusion.

Field 7 – Project Abstract/Summary. In a single page, describe the research problem, proposed methods, basic research contribution, anticipated outcome of the research, if successful, and impact on DoD capabilities or broader implications for national defense. Identify the Principal Investigator, the university/research institution (and other institutions involved in the Minerva team, if applicable), the proposal title, the Minerva interest area number, and the total funds requested from DoD for the 3-year base period (and, in the case of 5-year proposals, the additional 2-year option period and the potential 5-year total period).

Field 8 – Project Narrative. Describe clearly the research, including the objective and approach to be performed, keeping in mind the evaluation criteria listed in Section V ("Evaluation Criteria").

Generate a single PDF file containing all proposal narrative sections described below and attach as the *R&R Other Project Information* form in Field 8. **Full proposals exceeding the page limits defined below may not be evaluated.**

- **Cover page**, including:
    - Proposal title
    - Institution proposal number

- Interest area number and title
- Principal Investigator name
- Phone number, fax number, and e-mail address
- Institution, Department, Division
- Institution address
- Other institutions involved in the Minerva team, if applicable
- Whether the PI is a past or current DoD Contractor or Grantee.
  If yes, provide agency and point of contact information.

- **Table of Contents**. List project narrative sections and corresponding page.

- **Technical Narrative** *(20-page limit for this section, excluding list of references)*. Describe the basic scientific or technical concepts that will be investigated, giving the complete research plan. Describe the technical approach and what makes it innovative. Discuss the relationship of the proposed research to the state-of-the-art knowledge in the field and to related efforts in programs elsewhere, and discuss potential scientific breakthroughs, including appropriate literature citations/references. Discuss the nature of expected results. Discuss potential applications to defense missions (including alignment with the National Defense Strategy) and requirements. Describe plans for the research training of students. Include the number of full time equivalent graduate students and undergraduates, if any, to be supported each year. Discuss the involvement of other students, if any.

- **Project Schedule, Milestones, and Deliverables**. A summary of the schedule of events, milestones, and a detailed description of the results and products to be delivered. Any proposed option period beyond three years should be explicitly scoped accordingly.

- **Management Approach.** A discussion of the overall approach to the management of this effort, including brief discussions of: required facilities; relationships with any subawardees and with other organizations; availability of personnel; and planning, scheduling, and control procedures.

  (a) Designate only one Principal Investigator for the award to serve as the primary point-of-contact. Briefly summarize the qualifications of the Principal Investigators and other key investigators to conduct the proposed research.

  (b) Describe in detail proposed subawards to other eligible universities or relevant collaborations (planned or in place) with government organizations, industry, or other appropriate institutions. Particularly describe how collaborations are expected to facilitate the transition of research results to applications. If subawards to other universities/institutions are proposed, make clear the division of research activities, to be supported by detailed budgets for the proposed subawards.

    (c) Describe plans to manage the interactions among members of the proposed research team, if applicable.

    (d) Identify other parties to whom the proposal has been, or will be sent, including agency contact information.

    - **Facilities.** Describe facilities available for performing the proposed research and any additional facilities or equipment the organization proposes to acquire at its own expense. Indicate government-owned facilities or equipment already possessed that

will be used. Reference the facilities grant and/or contract number or, in the absence of a facilities grant/contract, the specific facilities or equipment and the number of the award under which they are accountable.

Field 9 – Bibliography and References Cited. Attach a listing of applicable publications cited in above sections.

Fields 10 and 11 – These fields are not required.

Field 12 – Other Attachments. In addition to the *Research and Related Budget* form, researchers are encouraged to submit a comprehensive, single page version of the budget for the prime and subawardee institutions, where rows are budget categories and columns indicate budget periods.

Letters of support are neither required nor expected in application packages. Some prospective proposers may feel a letter of support demonstrating the importance of the research to the national   security community may strengthen their proposals. Such letters should not exceed 2 pages.

v.   Research & Related Budget Form

You must provide a detailed cost breakdown of all costs, by year and cost category, corresponding to the proposed Technical Approach which was provided in Field 8 of the *R&R Other Project Information* Form. Any proposed option years must be separately priced. For planning purposes, assume that grant awards will begin in January 2022.

Budget elements:
Annual budgets should be driven by program requirements. Elements of the budget should include:

- Direct Labor — Individual labor category or person, with associated labor hours and unburdened direct labor rates. Provide escalation rates for out years. Provide the basis for the salary proposed. If labor costs are not provided for listed principal investigators, the budget justification document should include an explanation.

- 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.

- Indirect Costs — Fringe benefits, overhead, G&A, etc. (must show base amount and rate). Provide the most recent rates, dates of negotiations, the period to which the rates apply, and a statement identifying whether the proposed rates are provisional or fixed. If the rates have been negotiated by a Government agency, state when and by which agency. Include a copy of the current indirect rate agreement (via Field 12 of the *Research and Related Other Project Information* Form).

- Travel — Identify any travel requirements associated with the proposed research and

define its relationship to the project. List proposed destinations, cost estimate, and basis of cost estimate. Please include all Service or Minerva program travel needs, described further in Section II, Part C ("Expectations for Minerva Researchers").

- Subawards — Provide a description of the work to be performed by the subrecipients. For each subaward, a detailed cost proposal is required to be included in the principal investigator's cost proposal. Fee/profit is unallowable.

- Consultant — Consultants are to be used only under exceptional circumstances where no equivalent expertise can be found at a participating university; strong justification is required. Provide consultant agreement or other document that verifies the proposed loaded daily/hourly rate. Include a description of the nature of and the need for any consultant's participation. Provide budget justification.

- Materials — Specifically itemized with costs or estimated costs. Justify.

- Other Directs Costs — Provide an itemized list of all other proposed 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).
  NOTE: If the grant proposal is for a conference, workshop, or symposium, the proposal should include the following statement: "The funds provided by the Department of Defense will not be used for food or beverages."

- <u>Fee/Profit</u> — Fee/profit is unallowable.

Budget justification
The budget proposal should include a budget justification for each year, clearly explaining the need for each item and attached to Section L of the *R&R Budget* form.

Budget summary
In addition to the *Research and Related Budget* form, researchers are encouraged to submit a comprehensive, single page version of the budget for the prime and subawardee institutions, where rows are budget categories and columns indicate budget periods. Include as an attachment to *R&R Other Project Information* Form Field 12 ("Other Attachments").

Cost sharing is not a factor in the evaluation but is permitted. Cost sharing may support items such as salaries, indirect costs, operating expenses, or new equipment. In each category, show the amount and nature of the planned expenditure share (e.g., equipment, faculty release time for research). A signed statement of commitment regarding the cost sharing or matching funds described above must be obtained from the appropriate institutional and/or private sector officials, and included at time of submission. Any cost sharing or matching plan should be included in the budget justification.

v.   SF-LLL Disclosure of Lobbying Activities (optional form)

If the applicant is required to disclose any lobbying activities, complete the SF-LLL and include it with the other forms in the application package.

D. Grants.gov Application Submission Procedures and Receipt

1. This section provides the application submission and receipt instructions for WHS/AD program applications. Please read the following instructions carefully and completely.

   WHS/AD is participating in the Grants.gov initiative to provide the grant community with a single site to find and apply for grant funding opportunities. WHS/AD requires applicants to submit their applications online through Grants.gov.

1. How to Register to Apply through Grants.gov

   a. Instructions: Read the instructions below about registering to apply for DoD funds. Applicants should read the registration instructions carefully and prepare the information requested before beginning the registration process. Reviewing and assembling the required information before beginning the registration process will alleviate last-minute searches for required information.

   Organizations must have a Data Universal Numbering System (DUNS) Number, active System for Award Management (SAM) registration, and Grants.gov account to apply for grants. If individual applicants are eligible to apply for this funding opportunity, then you may begin with step 3, Create a Grants.gov Account, listed below.

   Creating a Grants.gov account can be completed online in minutes, but DUNS and SAM registrations may take several weeks. Therefore, an organization's registration should be done in sufficient time to ensure it does not impact the entity's ability to meet required application submission deadlines.

   Complete organization instructions can be found on Grants.gov here:
   https://www.grants.gov/web/grants/applicants/organization-registration.html

   1) Obtain a DUNS Number: All entities applying for funding, including renewal funding, must have a DUNS Number from Dun & Bradstreet (D&B). Applicants must enter the DUNS Number in the data entry field labeled "Organizational DUNS" on the SF-424 form. For more detailed instructions for obtaining a DUNS Number, refer to:
   https://www.grants.gov/web/grants/applicants/organization-registration/step-1-obtain-duns-number.html

   2) Register with SAM: All organizations applying online through Grants.gov must register with the System for Award Management (SAM). Failure to register with SAM will prevent your organization from applying through Grants.gov. SAM registration must be renewed annually. For more detailed instructions for registering with SAM, refer to:
   https://www.grants.gov/web/grants/applicants/organization-registration/step-2-register-with-sam.html

   3) Create a Grants.gov Account: The next step is to register an account with Grants.gov. Follow the on-screen instructions or refer to the detailed instructions here:
   https://www.grants.gov/web/grants/applicants/registration.html

   4) Add a Profile to a Grants.gov Account: A profile in Grants.gov corresponds to a single applicant organization the user represents (i.e., an applicant) or an individual applicant. If

you work for or consult with multiple organizations and have a profile for each, you may log in to one Grants.gov account to access all of your grant applications. To add an organizational profile to your Grants.gov account, enter the DUNS Number for the organization in the DUNS field while adding a profile. For more detailed instructions about creating a profile on Grants.gov, refer to:
https://www.grants.gov/web/grants/applicants/registration/add-profile.html

5) EBiz POC Authorized Profile Roles: After you register with Grants.gov and create an Organization Applicant Profile, the organization applicant's request for Grants.gov roles and access is sent to the EBiz POC. The EBiz POC will then log in to Grants.gov and authorize the appropriate roles, which may include the AOR role, thereby giving you permission to complete and submit applications on behalf of the organization. You will be able to submit your application online any time after you have been assigned the AOR role. For more detailed instructions about creating a profile on Grants.gov, refer to:
https://www.grants.gov/web/grants/applicants/registration/authorize-roles.html

6) Track Role Status: To track your role request, refer to:
https://www.grants.gov/web/grants/applicants/registration/track-role-status.html

b. Electronic Signature: When applications are submitted through Grants.gov, the name of the organization applicant with the AOR role that submitted the application is inserted into the signature line of the application, serving as the electronic signature. The EBiz POC must authorize people who are able to make legally binding commitments on behalf of the organization as a user with the AOR role; this step is often missed and it is crucial for valid and timely submissions.

3. How to Submit an Application to WHS/AD via Grants.gov

Grants.gov applicants can apply online using Workspace. Workspace is a shared, online environment where members of a grant team may simultaneously access and edit different webforms within an application. For each funding opportunity announcement (FOA), you can create individual instances of a workspace.

Below is an overview of applying on Grants.gov. For access to complete instructions on how to apply for opportunities, refer to:
https://www.grants.gov/web/grants/applicants/workspace-overview.html

1) Create a Workspace: Creating a workspace allows you to complete it online and route it through your organization for review before submitting.

2) Complete a Workspace: Add participants to the workspace to work on the application together, complete all the required forms online or by downloading PDF versions, and check for errors before submission. The Workspace progress bar will display the state of your application process as you apply. As you apply using Workspace, you may click the blue question mark icon near the upper-right corner of each page to access context-sensitive help.

a. Adobe Reader: If you decide not to apply by filling out webforms you can download individual PDF forms in Workspace. The individual PDF forms can be downloaded and saved to your local device storage, network drive(s), or external drives, then accessed

through Adobe Reader.

NOTE: Visit the Adobe Software Compatibility page on Grants.gov to download the appropriate version of the software at:
https://www.grants.gov/web/grants/applicants/adobe-software-compatibility.html

b. Mandatory Fields in Forms: In the forms, you will note fields marked with an asterisk and a different background color. These fields are mandatory fields that must be completed to successfully submit your application.

c. Complete SF-424 Fields First: The forms are designed to fill in common required fields across other forms, such as the applicant name, address, and DUNS Number. Once it is completed, the information will transfer to the other forms.

3) Submit a Workspace: An application may be submitted through workspace by clicking the Sign and Submit button on the Manage Workspace page, under the Forms tab. Grants.gov recommends submitting your application package at least 24-48 hours prior to the close date to provide you with time to correct any potential technical issues that may disrupt the application submission.

4) Track a Workspace Submission: After successfully submitting a workspace application, a Grants.gov Tracking Number (GRANTXXXXXXXX) is automatically assigned to the application. The number will be listed on the Confirmation page that is generated after submission. Using the tracking number, access the Track My Application page under the Applicants tab or the Details tab in the submitted workspace.

For additional training resources, including video tutorials, refer to:
https://www.grants.gov/web/grants/applicants/applicant-training.html

Applicant Support: Grants.gov provides applicants 24/7 support via the toll-free number 1-800-518-4726 and email at support@grants.gov. For questions related to the specific grant opportunity, contact the number listed in the application package of the grant you are applying for.

If you are experiencing difficulties with your submission, it is best to call the Grants.gov Support Center and get a ticket number. The Support Center ticket number will assist the WHS/AD with tracking your issue and understanding background information on the issue.

4. Timely Receipt Requirements and Proof of Timely Submission

a. Online Submission. All applications must be received no later than **3:00 p.m. Eastern Time on September 29, 2021.** Proof of timely submission is automatically recorded by Grants.gov. An electronic date/time stamp is generated within the system when the application is successfully received by Grants.gov. NOTE: White Papers should not be submitted through the Grants.gov Apply process, but rather by email as described in Section IV, subsection B. The applicant with the AOR role who submitted the application will receive an acknowledgement of receipt and a tracking number (GRANTXXXXXXXX) from Grants.gov with the successful transmission of their application. This applicant with the AOR role will also receive the official date/time stamp and Grants.gov Tracking number in an email serving as proof of their timely submission.

When WHS/AD successfully retrieves the application from Grants.gov, and acknowledges the download of submissions, Grants.gov will provide an electronic acknowledgment of receipt of the application to the email address of the applicant with the AOR role who submitted the application. Again, proof of timely submission shall be the official date and time that Grants.gov receives your application. Applications received by Grants.gov after the established due date for the program will be considered late and will not be considered for funding by DoD.

Applicants using slow internet, such as dial-up connections, should be aware that transmission can take some time before Grants.gov receives your application. Again, Grants.gov will provide either an error or a successfully received transmission in the form of an email sent to the applicant with the AOR role attempting to submit the application. The Grants.gov Support Center reports that some applicants end the transmission because they think that nothing is occurring during the transmission process. Please be patient and give the system time to process the application.

V.   EVALUATION INFORMATION

A. Evaluation 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
1. **Scientific merit**, soundness, and programmatic strategy of the proposed basic social science research; and
2. **Relevance** and potential contributions of the proposed research to research areas of DoD interest as described in Section IX. ***The Minerva Research Initiative is particularly interested in proposals that align with and support the National Defense Strategy, which is available at:***

https://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf

Other Criteria
3. 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.
4. The **qualifications** and availability of the Principal Investigators and key co-investigators (if applicable) and the **overall management approach**; and
5. 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 proposals may not be funded.

B. Evaluation Process

The Minerva Research Initiative selects awards using merit-based competitive procedures according to 32 CFR Sec 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.

1. *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 the DoD Military Components and/or Defense Agencies. The Minerva Steering Committee expects to invite approximately thirty (30) to forty (40) individual 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.

2. *Full proposals*

Full proposals submitted under this FOA undergo another multi-stage evaluation procedure. Technical proposals 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 may 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 FOA 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.

C. Evaluating Proposed Option Periods

The Government will evaluate the total cost of the award including base award costs and stated cost of all options. Evaluation of options will not obligate the Government to exercise the options during grant performance.

Decisions for exercising additional option years of funding, should funding be available, will be based on accomplishments during the base period and potential research advances during the option years that can impact DoD research priorities and capabilities. Options should be detailed in the original proposal and must be clearly separable from the base proposal in all documents detailing research activities and budget specifications.

VI. SIGNIFICANT DATES AND TIMES

Table 2. Anticipated Event Timeline

Event	Date	Time
Pre-Proposal Conference/Industry Day	N/A	
Last day for White Papers questions to Interest Area POCs	June 9, 2021	
White Papers Due	**June 23, 2021**	**3:00 PM ET**
Notification of Initial Evaluations of White Papers*	August 4, 2021	
Last day for Full Proposal questions to Interest Area POCs	September 15, 2021	
Full Proposals Due	**September 29, 2021**	**3:00 PM ET**
Notification of Selection for Award *	November 24, 2021	
Contract Awards*	January 26, 2022	
Kickoff Meeting*	April 6, 2022	

* Dates are estimates as of the date of this announcement.

VII. AWARD ADMINISTRATION INFORMATION

A. Access to your Grant

Hard copies of award/modification documents will **not** be mailed to potential recipients. All award/modification documents will be available via the DoD Electronic Document Access System (EDA). EDA is a web-based system that provides secure online access, storage, and retrieval of awards and modifications to DoD employees and vendors.

If a prospective proposer does not currently have access to EDA, complete a self-registration request as a "Vendor" via http://eda.ogden.disa.mil following the steps below:

Click "New User Registration" (from the left
Menu) Click "Begin VENDOR User
Registration Process"
Click "EDA Registration Form" under Username/Password (enter the appropriate
data) Complete & Submit Registration form

Allow five (5) business days for your registration to be processed. EDA will notify you by email when your account is approved.

Registration questions may be directed to the EDA help desk toll free at 1-866-618-5988, Commercial at 1-801-605-7095, or via email at cscassig@csd.disa.mil (Subject: EDA Assistance).

VIII. OTHER INFORMATION

A. Federal Funding Accountability and Transparency Act of 2006

The Federal Funding Accountability and Transparency Act of 2006 (Public Law 109-282), as amended by Section 6202 of Public Law 110-252, requires that all agencies establish requirements for recipients reporting   information on subawards and executive total compensation as codified in 2 CFR 33.110. Any company, non-profit agency or university that applies for financial assistance (either grants, cooperative agreements or other   transaction agreements) as either a prime or sub-recipient under this FOA must provide information in its proposal that describes the necessary processes and systems in place to comply with the reporting requirements   identified in 2 CFR 33.220. An entity is **exempt** from this requirement **UNLESS** in the preceding fiscal year it received: a) 80 percent or more of its annual gross revenue in Federal contracts (and subcontracts), loans, grants (and subgrants), and cooperative agreements; b) $25 million or more in annual gross revenue from Federal contracts (and subcontracts), loans, grants (and subgrants), and cooperative agreements; and c) the   public does not have access to information about the compensation of the senior executives through periodic   reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 or section 6104 of the Internal Revenue Code of 1986.

B. Military Recruiting on Campus (DoDGARs §22.520)

This applies to domestic U. S. colleges and universities. Appropriate language from 32 CFR 22.520, Campus access for military recruiting and Reserve Officer Training Corps (ROTC), will be incorporated in all   university grant awards.

C. Certification regarding Restrictions on Lobbying

Grant and Cooperative Agreement awards greater than $100,000 require a certification of compliance with a national policy mandate concerning lobbying. Grant applicants shall provide this certification by electronic   submission of SF424 (R&R) as a part of the electronic proposal submitted via Grants.gov (complete Block 17). The following certification applies likewise to each cooperating agreement and normal OTA applicant seeking federal assistance funds exceeding $100,000:

 (1) No Federal appropriated funds have been paid or will be paid by or on behalf of the applicant, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

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

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

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

D. Representation Regarding an Unpaid Delinquent Tax Liability or a Felony Conviction Under any Federal Law - DoD Appropriations:

All grant applicants are required to complete the "Representation on Tax Delinquency and Felony Conviction" found at http://www.onr.navy.mil/Contracts-Grants/submit-proposal/grants-proposal.aspx by checking the "I agree" box in block 17 and attaching the representation to block 18 of the SF-424 (R&R) Application for Federal Assistance form as part of the electronic proposal submitted via Grants.gov. The representation reads as follows:

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

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

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

E. Security Classification
OSD does not provide access to classified material under grants.

F. Department of Defense High Performance Computing Program
The DoD High Performance Computing Program (HPCMP) furnishes the DoD S&T and RDT&E communities with use-access to very powerful high performance computing systems. Awardees of ONR contracts, grants, and other assistance instruments may be eligible to use HPCMP assets in support of their funded activities if OSD Program Officer approval is obtained and if security/screening requirements are favorably completed.

Additional information and an application may be found at https://www.hpc.mil/.

G. Organizational Conflicts of Interest (OCI)
All prospective proposers and proposed sub-awardees must affirm whether they are providing scientific, engineering, and technical assistance (SETA) or similar support to any DoD or military service technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the prospective proposer supports and identify the prime grant numbers. Affirmations shall be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest must be disclosed. The disclosure shall include a description of the action the prospective proposer has taken or proposes to take to avoid, neutralize, or mitigate such conflict. A grantee cannot simultaneously be a SETA and a research and development performer.

Proposals that fail to fully disclose potential conflicts of interests will be rejected without technical evaluation and withdrawn from further consideration for award. For additional information regarding OCI, contact the appropriate Interest Area POCs. If a prospective proposer believes that any conflict of interest exists or may exist (whether organizational or otherwise), the prospective proposer should promptly raise the issue with the appropriate Interest Area POC by sending his/her contact information and a summary of the potential conflict by e-mail to the Business Point of Contact in Section I, item 7 above, before time and effort are expended in preparing a proposal and mitigation plan. If, in the sole opinion of the Grants Officer after full consideration of the circumstances, any conflict situation cannot be effectively avoided, the proposal may be rejected without technical evaluation and withdrawn from further consideration for award under this FOA.

H. Reporting Executive Compensation and First-Tier Subawards:

The Federal Funding Accountability and Transparency Act of 2006 (Public Law 109-282), as amended by Section 6202 of Public Law 110-252, requires that all agencies establish requirements for recipients reporting information on subawards and executive total compensation as codified in 2 CFR 170.110. Any U.S. Institutions of Higher Education that applies for financial assistance (either grants, cooperative agreements or other transaction agreements) as either a prime or sub-recipient under this FOA must provide information in its proposal that describes the necessary processes and systems in place to comply with the reporting requirements identified in 2 CFR 170.220. This grant and any subawards are also subject to 32 CFR Part 32.

IX. SPECIFIC MINERVA RESEARCH INITIATIVE TOPICS

The following Minerva topics indicate domains of inquiry relevant to the Department of Defense. Interest areas are not mutually exclusive and proposers are not limited to the questions, scope, or regions listed. Researchers should aim to balance the specificity of their proposed research with the generalizability of the expected results. ***The Minerva Research Initiative is particularly interested in proposals that align with and support the National Defense Strategy, which is available at:***

https://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf

In framing proposals, it is important to articulate the basic science contribution of the research proposed, and how its theoretical and methodological approach is generalizable such that it could influence how similar problem sets are approached in the future. Proposals that reflect basic research that engages the strategic priorities in this document may be reviewed more favorably. (See Section V of the FY 2021 Minerva Funding Opportunity Announcement for proposal evaluation criteria).

Proposals may leverage existing data or, with justification, collect new data. Preference may be given to studies by experts capable of analyzing source material in the original languages and to studies that exploit materials that have not been previously translated. *The DOD also values geospatially-referenced data across multiple geographic scales gathered in the course of research.* It is expected that collecting viable empirical data relevant to context and situation may require field research, which is looked upon favorably.

Researchers are encouraged to incorporate novel research methods. Well-theorized models linking micro and macro analyses and cross-method approaches, such as simultaneously using both inductive and deductive analytic strategies, and qualitative and quantitative methods are also of interest. Proposals should be fundamentally rooted in the existing social science research literature and have a clear basic

science component that describes the future utility of the insights the research will generate for social science.

Disciplinary approaches of interest include, but are not limited to: anthropology, area studies, cognitive science, demography, economics, history, human geography, political science, psychology, sociology, and computational sciences. Interdisciplinary approaches are strongly encouraged, especially when mutually informing and/or cross-validating (methodological integration). Researchers need not focus exclusively on the contemporary period, but they must be able to explain the relevance of findings to contemporary DoD strategic priorities.

In framing any Minerva proposal, it is important to articulate the basic science contribution of the research proposed. It is expected that all proposals will have sufficient area and subject-matter experience to appreciate the nuances of diverse local contexts—including the (ethical) challenges posed by different value systems—and proposers are strongly encouraged to review the 2019 Future Directions in Social Science report on the [Emergence of Problem-based Interdisciplinarity](#) as a reference for the program's **strong** interest in supporting projects that are disciplinarily diverse and committed to addressing problems in innovative ways. It is also expected that proposals utilize both qualitative and quantitative approaches and include validation strategies of the research findings and potential impacts. Further, the program is interested in how the theoretical and methodical approach of the proposed research is generalizable such that it could influence how similar problem sets are approached.

Furthermore, there is strong interest in research proposals partnered with Historically Black Colleges and Universities/Minority Intuitions (HBCU/MI) and other appropriately diverse teams, such as Professional Military Education Institutions, especially as they contribute different perspectives on the social dynamics of the challenges posed below.

> **Topic 1: Social Implications of Environmental Change**
> **Topic 2: Resource Competition, Social Cohesion, and Strategic Climate Resilience**
> **Topic 3: Security Risks in Ungoverned, Semi-Governed, and Differently-Governed Spaces**
> **Topic 4: Analysis of Foreign Influence Operations in Cross-Cultural Perspective**
> **Topic 5: Community Studies on Online and Offline Influence**
> **Topic 6: Computational Social Science Research on Difficult-to-Access Environments**
> **Topic 7: Social and Cultural Implications of Artificial Intelligence**
> **Topic 8: Humans and Outer Space**
> **Topic 9: Management and Information in the Defense Environment**

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Topic 1: Social Implications of Environmental Change
POC: David Montgomery, OUSD-R&E, Basic Research Office, david.w.montgomery61.civ@mail.mil

There is strong scientific consensus that climate and environmental changes across the earth's ecosystems will result in ever-increasing uncertainty, surprise, and undesired outcomes. Understanding the convergent dynamics of human behaviors, environmental changes, and their social implications is critical. Current and future security threats associated with climate change, for example, can be hard to anticipate because productive models must capture the deep interdependence and cascading risks of both earth system stressors—climate, water, food, etc.—and also economics, political regimes, and health systems/disease outbreaks that can be conceptualized differently by different cultural systems. Thus, there is a strong need to develop precise, data-driven future scenarios within the contexts of social science as they apply to catastrophes, particularly variables that involve discontinuous, variable, and/or exponentially accelerating events. Accepting climate and environmental change as a national security challenge, this topic seeks to explore the multifaceted social implications of environmental change. The focus here is not on questions of *if* climate change causes conflict, but rather how stresses to various earth systems—such as climate change, land-system change, freshwater and ocean stress, etc.—impact social behavior, governance, fragility, and stability, and vice versa. As migration and population movement are likely to continue on varying scales, questions about the absorptive capacity concomitant with the tensions of social integration and acceptability are likely to be relevant. Of central emphasis should be how shifts in ecological systems impact people locally—across micro-, meso-, and macro-levels—and how this shifts social dynamics, with data being disaggregated by gender, income, status within society, and other locally-relevant indicators of the experience of the changing environment.

Specific foci may include, but are not limited to:
- How the (biophysical) environment interacts with other factors (e.g. policies, social norms, perceptions) to influence migration decisions and the consequent social, political, and economic dynamics, including challenges of integrating increased cultural diversity in receiving countries and strain on natural resources;
- Objective challenges of social integration (e.g., beyond demeaning one group in face of another) and variables that determine success or conflict; what are the limits of dominant global frameworks to adapting to these tensions brought through diversity and difference;
- How environmental transitions impact population growth, distribution, and gender dynamics, and how such shifts impact local dynamics; e.g. how do countries, governments, institutions, and extremist organizations adapt to such stressors;
- The implications of various types of environmental change on the ability of both state and non-state groups to organize, mobilize, strategize, govern, etc., considering the geographic areas or pathways where the cumulative effects over time lead to growing grievances that may subsequently lead communities to take action in some form;
- The social implications of unevenly distributed environmental impact—e.g. sea level rise, fresh water availability, changes in fisheries, agricultural viability, etc.—exacerbates shifting opportunities and challenges of cultural tensions across the *status quo*;
- Designing multi-disciplinary approaches to forecasting that bridge ecological and sociological/anthropological analysis of local problems relative to local, national, regional, and/or global tipping points. This should include the correlation of data from plausible, downscaled climate model outcomes—abrupt "shocks" as well as slower system changes—with local dynamics of stability and social disruption, alongside an appreciation of great power and other levels of competition perspectives on the salient problems, threats, needs, and opportunities;
- How ecological and social change interacts with the emergence and spread of new infectious diseases, epidemics, and more contagious variants—such as urban encroachment that increases interaction with wild species and the chance for zoonotic transmission—and how such threats

impact social relations and cohesion, focusing on the potential security impacts of such social shifts;

- How to think more creatively, collaboratively, and holistically to influence social behavior and resilience aimed at addressing the challenges posed by earth system stressors that are experienced with uneven urgency and understood and perceived through culturally diverse frames. This includes how beliefs about environmental causes change group identity; how global environmental changes may affect rules-based international systems; and how institutions and their structures may respond and adapt to the challenges associated with environmental change.

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Topic 2: Resource Competition, Social Cohesion, and Strategic Climate Resilience
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Climate and environmental change is a defining global challenge with significant potential to reshape future security and stability, including but not limited to mass migration, fragility, infectious disease, water scarcity, famine, energy challenges, as well as new opportunities. As such, it presents both global systemic risk to local and national social structures and a broader threat of societal rupture instigated by both slow- and rapid-onset climate events and shifts in the types and availability of critical resources. Understanding the plurality of local-scale perceptions, the social construction of belonging, and group cohesion alongside the interconnectedness and adaptability of complex societies will be central to understanding the possibilities of varying institutional structures to adapt to likely future scenarios. Key to this will be not only novel ways of analyzing the problem but a fundamental approach to appreciating the socio-geopolitical impact of solutions aimed at adapting, mitigating, and preparing for such scenarios, many of which are unfolding before us. In many respects, this represents a problem of system complexity wherein second- and third-order causes need to be appreciated to understand impacts and opportunities. Thus, in considering climate resilience, attention should be given to understanding what differentiates resilient communities and countries from those that are less resilient, and empirically-identifying both formal and informal strategic adaptation strategies.

Specific foci may include, but are not limited to:
- Quantifying and identifying the impacts on group solidarity and social cohesion brought about by events of environmental change—including economic, political, health, etc.—that demonstrate an appropriately nuanced social theory of group dynamics at different scales. Related to this, how are non-Western theoretical frames used to explain social behavior and what are the implications of economic disparity and unevenly distributed opportunity?;
- How do dynamics around local provisioning and regulation of ecosystem services, resource access, and livelihood security affect stabilization campaigns, and how might such dynamics evolve under different types of influence or information (patterns)?;
- What is the range of ways that peer and near-peer adversaries manipulate environmental conditions and messaging to their strategic, operational, and tactical advantage?; How might institutional structures—including those of great powers, other levels of competition, and international cooperative organizations—respond to social, economic, and environmental stress and what are the likely cultural, political, and world-order implications posed by different approaches and tensions between the need for multilateral cooperation in the face of growing discontent with globalization;
- How does perceived or realized resource competition influence thinking about escalation and deterrence, and how does climate change portend to reshape great power and other levels of competition around the availability of resources?;

- How does economic interdependence and the role of alliances in burden-sharing help or hinder the management of environmental challenges; this includes a typology of environmental change impacts at different scales—including resource scarcity (current and future) and disease events—on economic sectors, vital supply chains, and how both circular and integrated economies are potentially impacted by the social and political responses to local environmental change; How do we build strategic climate resilience and understand empirically when we are doing so (effectively or less effectively)?;
- How should we understand cumulative and cascading risks and the drivers of mega security emergencies and how do we establish metrics of success in order to determine the most appropriate adaptive strategies in the short-, medium-, and long-term? Which sub-indicators of adaptive capacity and resilience give governments the greatest return on their investment?; which would be most impactful and longest lasting?;
- How does geography and population density influence how the problems are conceptualized and how might rapid shifts in societal perceptions of climate change influence political action and affect decisions about investments in resilience?

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Topic 3: Security Risks in Ungoverned, Semi-Governed, and Differently-Governed Spaces
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This topic aims to support research to understand topical areas related to quantifying and describing vulnerabilities to sociopolitical instabilities in physically and virtually contested spaces that lack strong governance infrastructures and to understand the dynamics of great power and other levels of competition in influencing these spaces. The emphasis is on building scientific understanding about how these ungoverned / semi-governed / differently-governed spaces evolve, the behavioral norms and social reinforcement that sustain them, and the consequences for the nation and world from a cross-national perspective. How does competition for control over these spaces affect the global balance of power? There are three domain spaces of particular interest: (1) Regions undergoing transitions in governance (e.g., areas of the Middle East, Africa, Eurasia); (2) Spaces subject to rapidly evolving and varying degrees of international conflict and governance (e.g., cyberspace); and (3) Areas in which international laws are undergoing shifts (e.g., outer space, polar regions, deep sea, and international waters.) These diverse types of domains represent contested or potentially contested regions in which social structures, particularly governance (both formal and informal) and political structures, are increasingly unpredictable and pose security risks. Many of these contested regions are repositories for high-demand, valuable resources, and social control implies resource control. Additionally, technology has facilitated more complex (emergent) access to these semi-governed domains. For example, outer space, cyberspace, polar regions, and deep sea areas are all dominated by informal structures and perceptions of control yet are characterized by a lack of comprehensive formal law and universally agreed-upon governance structures. This topic also seeks insight on how different nation states are formulating policy and governance structures related to these ungoverned / semi-governed / differently-governed spaces and how governance performs following acute perturbations such as crises.

These spaces pose substantial risks of illicit activity, international conflict, violence, and threats to national security and global social order, and thus this topic seeks to better understand the dynamics of fluid or shifting governance and their implications in a wide range of other types of similar spaces (i.e., geographical, technical, environmental). Additional foci include considerations such as: How do state and non-state actors organize to control regions of limited formal governance? What are the dynamics between informal and formal governance? What variables are more or less functional in determining resource control and how they are exerted? What are the implications for surrounding territories? Can

related national security risks be identified? Specifically, data and experience in a variety of geographic regions should be leveraged to apply similar and divergent variables and processes. Mixed-method approaches that integrate qualitative and quantitative analytic strategies are encouraged, as are multi-disciplinary theoretical approaches that facilitate the development of causal models and robust validation methods.

Specific foci may include, but are not limited to:
- Evolving sociopolitical and economic structures in currently contested geographic regions (including for example regions of the Middle East, Africa, Eurasia), especially those looked at comparatively and across different scales;
- Effects on control of these spaces on the global balance of power;
- Balance between state and non-state actors as well as formal and informal social and normative controls;
- Resource control (e.g., mineral, natural, technological) in contested regions on earth or in outer space;
- Emerging governance structures and markets in ungoverned / semi-governed / differently-governed spaces, especially those approaching questions of managing the commons in novel ways;
- The management of data rights, especially the challenge of the uneven governance of data where different countries apply different value systems in managing data;
- What potential economic opportunities inform future changes in the relative value of different types of engagements and how might opportunities cause changes in coalition partners as well as evolving sources of instability?

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Topic 4: Analysis of Foreign Influence Operations in Cross-Cultural Perspective
POC: Rebecca Goolsby, Office of Naval Research, rebecca.goolsby@navy.mil

Over the past decade, several dominant Asian nations have accelerated efforts to extend their spheres of influence globally. The strategic approach in these efforts has varied across targeted geopolitical regions and time. Research has lagged in studying important strategic regions in Asia, Africa, and Latin America. A successful proposal will include only one of these regions, and no more than three nations within that region, in order to get to the desired depth of study. The topic seeks multidisciplinary theoretically innovative approaches from disciplines such as anthropology, cross-cultural sociology, political science, political economy, and cross-cultural social psychology, working in collaboration with computer and information sciences to develop a social science-forward approach to the development of social theory and the creation of new techniques needed to carry out a systemic analysis of social influence in online and offline cross-cultural milieus, cyber-social dynamics, narrative, and in languages other than English. Real-world influence efforts should also be studied along with cyber-social efforts, to better illuminate how real-world and cyber-world efforts converge, cohere, and amplify one another. The development of useful metrics of impact on single and multiple platforms is also a desired deliverable from this research. An important aim of this project will be to better understand the motivations and strategies of international influence campaigns on target states and the development of new approaches to counter these efforts, including proactive and reactive strategies by the U.S. and her allies for messaging activities and other cyber-social efforts, as well as economic and other real-world approaches to (counter) influence.

Successful proposals will demonstrate expertise in the nations chosen for study, including language competence, and will indicate their impact with reference to U.S strategic concerns. The analysis will be

restricted to non-classified sources, including scholarly publications, media outlets, interviews with local actors, and where possible, ethnographically-grounded qualitative work in the targeting and targeted states. International partnerships are acceptable and encouraged.

A number of specific questions and issues are of interest. These are not mutually exclusive and they certainly are not exhaustive. They include the following:

- What are the broad goals driving the dominant state's efforts in extending its sphere of influence? What are the strong motivating factors, beliefs, and values that drive the influencing state's posture relative to the targeted state? How do these affect their approach?
- What are the mechanisms of influence that to date have been exploited by the influencing state, with respect to the targeted state, including any differences in the targeting of economic, military, cultural, and political sectors?
- What factors affect the success of the influencing state in these cyber-social and real-world operations? How do real-world and cyber-social operations converge, cohere, or backstop one another?
- How successful have the U.S. and her allies been, proactively or retroactively, in countering or promoting these influence operation in the last five years? What were the strengths and weaknesses of these efforts during that period? Where can the U.S. rapidly and definitively improve in countering and diminishing these influence operations?
- How does cyber-social influence of influencing states impact the stances and opinions of elite decision-makers? How does cyber-social influence impact local communities in their relationship with the influencing state? In their relationship with their own states? In their relationships with other communities within the state?

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Topic 5: Community Studies on Online and Offline Influence
POC: Rebecca Goolsby, Office of Naval Research, rebecca.goolsby@navy.mil

In social science, community is understood as a social unit with perceived commonalities such as a shared sense of culture, norms, values, religion, status, identity, etc. This may lead individuals to work together to organize social life within a particular space and it may bind people together by a sense of belonging sustained across time and space. Those bounded by a particular space are sometimes called "local communities" or "real-world communities," yet with increased global mobility, emerging forms of information transmission, and a heightened polarization of ideas, questions of what holds groups together—both locally and translocally—appears under stress. Today, as novel forms of social groupings evolve around social-cyber mediums of exchange, questions emerge about the online and offline influence on group affinity, identity, and affiliation, and how this impacts both human and national security.

While there is a vast literature on community and society, how communities are formed and get (re)imagined, and the evolving and sociologically transformative role media plays in shaping social interaction, this topic is interested in the contemporary nature of "local" community—including traditional and "modern" conceptions—and what binds it across different cultural milieus—both rural and urban—and the cyber-social influence carried out online and offline. The formation of new identities and stances may be hidden—such as with some ethnic nationalist or other extremist identities— or overt, depending on the kinds and types of (local) social support. When these new identities and stances become public and operationalized, communities often face significant threats to civil order and to the ability to develop consensus to local concerns, especially as related to managing the commons. Local communities,

after all, are critical to understanding the real-world expressions of influence and subsequently serve as markers for stability across micro-, meso-, and macro-scales.

This solicitation expects proposals to involve social scientists, media researchers, area specialists (as appropriate) working with information and/or scientists to develop their approaches. Ethnographic work, real-world surveys, expert interviews, focus groups, and experiments may be used together with computational work in the measurement and characterization of online communities and their impact on the real-world. A successful proposal should combine the real-world study of human behavior with the study of cyber behavior in a diversity of local social contexts, investigating how social media engagement and participation in new (imagined) social worlds result in the formation of different identities, beliefs, and behaviors that have significant implications for social stability within different systems of governance. Successful proposals will (1) study local community and social-cyber community to improve understanding of "hard influence"—influence that promotes the development of fissures in society, such as the promotion of hate, group polarization, public health disinformation, and conspiracy theory; (2) consider the role of real-world communities and social-cyber community counterparts in "soft influence"—constructive, positive narratives, and social rewards that aim to create cohesive, well-functioning communities; (3) explore the online and offline social-cyber implications on group formation in different cultural contexts; and (4) look at how social-cyber space shapes conceptions of individual prioritization and group cohesion as it relates to local stability, security, and the social contract (across different cultural and political contexts).

Specific foci may include, but are not limited to:
- How does/can real-world community temper and constrain the at-times destructive and anti-social aspects of social-cyber influence?
- How important are cyber-social relationships—such as parasocial relationships with influencers—in escalating individuals toward performative or violent extremism?
- What can communities do to preserve civility, social cohesion, and social functionality, at local, regional, and national levels? What combinations of solutions need to be enacted in the real-world communities to improve civility, social cohesion, and counter "hard" influence?
- Are there methods or algorithms that platforms could or should use to prevent the creation of toxic and viral techniques as applied to conspiracy and rumor propagation and disinformation? What combination of solutions needs to be advanced to help responsible cyber-communities and individuals fight disinformation and other influence techniques intended to promote group polarization and shape the platform's social dynamics to viralize hard influence content?
- What is the role of news agencies, legitimate and less legitimate, in viralizing disinformation and group polarization? What measures could be taken to reduce their role in the amplification of disinformation, rumor, and group polarization?
- How can "hard influence" and "soft influence" be measured in online communities? How can attempts to counter hard influence be measured in terms of impact? What metrics can be achieved in the online community that describe, predict, or characterize its potential impact in local community settings? How can survey or focus groups be used to measure the impact of online worldviews on the worldview of local community members and groups?

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Topic 6: Computational Social Science Research on Difficult-to-Access Environments
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With the exponential increase in available data, computational social science has emerged as a field with the potential to transform understandings of the social world. For computational social science to reach it's potential in helping address real-world problems, new collaborative public-private arrangements, data infrastructures, and university organizational challenges must be addressed, alongside measured consideration of the social, ethical, and legal factors across societies with different cultural, ethical, and institutional norms. One challenge of any heavily quantitative approach, however, is to assure that it is qualitatively grounded and ethnographically representative of the diverse lived environment under consideration. Of particular interest for this topic is the use of computational social science to enhance research understandings of difficult-to-access environments—ranging from enduring conflicts to societies that broadly restrict researcher access—where qualitative work can be more difficult. Proposals are encouraged to consider new models of collaboration, innovative experimental design and data analysis, and explore novel relationships between theory and experiment. It is expected that validation strategies will draw upon available qualitative data, but may also include experiments that specifically target gaps in our understanding.

Specific foci may include, but are not limited to:
- How to understand community diversity and the sociocultural impacts of repressive regimes on diverse populations; i.e. how to know what is happening on the ground when on-the-ground research is not possible;
- How to understand socioeconomic complexity related to problems of inference, such as geopolitical intent, emerging technology development, and novel capabilities;
- How to disaggregate social and behavioral complexity to better understand individuals, groups, networks, and societies in relation to stability and commitments of belonging;
- How to understand digital civil society; digital self-governance; the effects of e-governance; mistrust of the state and the implications of fractured governance at various levels; and the provision of public goods in traditional and non-traditional ways;
- How to apply computational social science methods across different epistemological approaches.

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Topic 7: Social and Cultural Implications of Artificial Intelligence
POC: Laura Steckman, Air Force Office of Scientific Research, laura.steckman.1@us.af.mil

Artificial intelligence (AI) and related technologies, such as machine learning, offer both promises and challenges to resolving some of the world's most complex problems. Numerous international leaders have indicated that the nation that can best harness AI and AI-enhanced capabilities will wield great power and have the global advantage. Regardless of whether possessing AI capabilities equates with power, the world finds itself in a race to develop and deploy these technologies; over thirty nations now have national AI strategies published or drafted in addition to a growing number of bilateral, multilateral, and other international AI roadmaps. As part of this race, people, companies, and governments around the world are testing algorithms and systems for purposes ranging from the prosocial to profit. As many of these technologies go online, their reach may not be contained to a specific population or locality, either purposefully or unintentionally, nor will they be constrained by social or political borders. The implications of AI and technologies that spill over to unexpected people, places, and societal sectors raise fundamental questions about those technologies and the effects or changes they may create.

During the history of AI, the science and research have been subject to long-standing critiques from cultural and philosophical lenses. The converse approach, however, understanding how culture, philosophy, and ideology directly shape AI development from planning to execution, to include how

those practices shape the technology's [un]intended effect(s) on populations or places that may not be co-located with the developers, has received little inquiry. While there is some agreement, particularly from humanistic and other social disciplines, that AI and similar technologies are themselves part of a larger socio-cultural endeavor wherein the people who develop them come from social traditions that influence their approach, the specifics of how those social—as well as cultural and ideological—experiences affect technology conceptualization, development, and deployed effects is not well understood. This topic seeks to support research that uncovers and elucidates the role of cultural and social practices on the technological lifecycle and ultimately, whether and how AI and AI-enhanced capabilities affect end-user populations who may not be the technology's anticipated consumer base.

Empirical questions that the research should consider include inquiries into:
- To what extent do social and cultural practices become intertwined in the process of algorithmic and technology development?
- How do different ideologies, worldviews, or thinking styles inform technology development, and what impact do they have?
- How does local knowledge translate into AI and machine learning development? What is the relationship between local and global knowledge that may be encapsulated into emerging technologies, and what happens when they exhibit differences or contradictions?
- How does AI informed by specific social and cultural contexts affect people or systems in other cultural contexts? What are the implications, and which, if any, are more impactful than others?
- How do we understand the impact that a technology developed from a specific cultural standpoint has on peoples and groups with different worldviews? Do these impacts, if any, change in specific contexts, such as humanitarian assistance/disaster relief, security cooperation, or during times of local unrest?
- To what extent do social and cultural differences affect ethics and ethical considerations of AI and AI-enabled technologies? If they make an impact, what is it, and how do cross-cultural differences support and/or challenge the future of technology development and deployment?

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Topic 8: Humans and Outer Space
POC: Laura Steckman, Air Force Office of Scientific Research, laura.steckman.1@us.af.mil

The US revised its national space policy in December 2017 to reinvigorate its space program and, more specifically, to "lead an innovative and sustainable program of exploration with commercial and international partners to enable human expansion across the solar system and to bring back to Earth new knowledge and opportunities" from the Moon, Mars, and beyond. Achieving this vision requires significant preparation through prioritization and partnerships to plan for the technological, environmental, and human requirements of space exploration.

Missions in the space domain will require the development of new knowledge that considers the environmental, technological, informational, and human aspects involved with space missions separately and holistically. Space security will be paramount to ensure that the space domain remains stable, accessible, and peaceful. Different nations have announced various objectives for and in space, with some having short-term goals and others some more specific, long-term plans. For this reason, space will be a domain involving both cooperation and competition that may occur simultaneously or separately. Space management will require new processes and policies to address issues such as traffic, waste, and sustainability. It will also raise new questions about the allocation and labor of human-autonomous teams in a dangerous, harsh environment; in addition, AI and robotics may play specific roles. The human

dimension of space will involve psychological, cognitive, emotional, (neuro-) physiological, and social processes that may be altered, reinforced, or even disrupted to adapt to long-term exploration. For example, in addition to the physiological effects of microgravity, the sociocultural effects of remoteness, distance, disconnectedness, and [im]perceptions of time may play important roles in human performance and experience.

This topic seeks innovative, multidisciplinary research to inform preparations for future space travel and human expansion across the solar system with particular interest in research that considers the multilayered, multidimensional requirements for successful short- and long-term missions. Research projects must examine the human dimension at a minimum, with a preference for research that considers space's psychological, cognitive, and/or social human aspects and requirements with one or more other dimensions such as the sociopolitical, technological, environmental, and/or informational dimensions.

Research topics of interest include but are not limited to addressing:
- International space relations that consider how to balance security and competition with the [perceived] need for collaboration, trust, and transparency;
- Sustainability in space: what does it mean and entail? What processes and policies are required to build sustainable systems and systems of systems?;
- The concepts of remoteness and distance and the impact they may have on people, processes, and systems in space;
- Processes surrounding the development or evolution of cultural and social identity in diverse, remote, or isolated environments;
- Exploring similarities and differences, if any, that exist for autonomous systems, including human-machine teams, on Earth and in space;
- Sociocultural effects on human performance of the physical space environment and its associated social and physiological demands/implications.

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Topic 9: Management and Information in the Defense Environment
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This topic evolves out of the Department's emphasis on Defense Reform as a pillar of the National Defense Strategy, the continual identification of DoD management activities on the GAO's High Risk List, and the 2018 Future Directions Workshop on the intersection of Management and Information Sciences and it's corresponding report on the Emerging Sciences and Their Applicability to DoD R&D Management Challenges. Management science and information science emerged in response to particular organizational needs: management science to the global scale of military and industrial global operations and information science to the growing presence/influence of digital data in contemporary society. Each of these two sciences afford rich opportunities to fundamentally understand and provide insights into management and information challenges facing DoD as it seeks to modernize and reform its management and business practices, and make better use of its management data collection and analysis capabilities. This topic seeks to explore how management and information science can contribute to understanding organizational structures and the challenges to and opportunities in efforts to modernize DoD management, scientific, and bureaucratic processes and ecosystems. Research activities will also help elucidate what data sets and sources should be made available to researchers by the DoD to support further constructive engagement with the management science and information science academic community.

Motivating research questions and issues that can be addressed include, but are not limited to:

- How can planning, budgeting, and financial management policies be tailored to match the speed needed to counter emerging threats and take advantage of new technological opportunities?
- How can the DoD maintain the current structure and processes needed for addressing current operational challenges while concurrently experimenting with developing alternative structures and processes needed for emerging operational challenges?
- What approaches can enable the DoD to identify fair pricing in acquisition circumstances where there is only one prime contractor and only one customer? What are the best models to establish a fair price in the absence of a true market? How can DoD identify pair prices for weapons systems and capabilities that are intended to have a deterrent effect and not intended for operational use?
- How can we anticipate and address the erosion or complete collapse of a sub-tier capability in the supply chain?
- How can we best mitigate risk aversion in complex, bureaucratic organizations such as the DoD?
- Develop models that take into account the need for strategy formulation, not just strategy execution; the challenge presented by multiple stakeholders without a unified overarching hierarchy; the multiplicity of interests involved in any prospective change; the accelerating and highly variable rates of technological and social change; challenge of organizationally incentivizing collective interests over more narrowly-defined interests; etc.
- How can a "systems of systems" architecture be developed—and data be aggregated—that facilitates portfolio management beyond the program level; enhances Joint Force, Service, and OSD coordination and cooperation; assists the transition of research insights across the Department; etc.
- How can the DoD assess costs and impact with imperfect information, particularly as it relates to evaluating institutional inertia relative to the challenges of managing risk in an ever-evolving research and operational environment?
- Identify alternative frameworks to the current linear progression of research to understand the reciprocal relationship between the different research activities (Basic, Applied), Development, and Application to understand the development life-cycle, resource requirements, and DoD stakeholders;
- Develop sophisticated theory and models to guide the transformation of institutions into agile organizations that enable rapid adaptation of policies, priorities, and investment to maintain competitive advantage;
- Develop advanced models accounting for current federal government and industry R&D activities to create for DoD a diversified R&D research portfolio that will inform investment prioritization (lead versus support) and level (amount).