

PROGRAM ANNOUNCEMENT



THE DEPARTMENT OF DEFENSE (DoD)

Minerva Research Initiative (MRI)

Broad Agency Announcement W911NF-11-R-0011



Issued by Army Research Office (ARO)

BROAD AGENCY ANNOUNCEMENT (BAA) NUMBER: W911NF-11-R-0011

INTRODUCTION:

This Broad Agency Announcement (BAA) is issued under the provisions of the Department of Defense Grant and Agreement Regulation (DODGARS) 22.315(a). A formal Request for Proposals (RFP), solicitation, and/or additional information regarding this announcement will not be issued. Request for same will be disregarded. Paper copies of this announcement will not be provided.

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

I. GENERAL INFORMATION

1. Agency Name for Proposal Submission

U.S. Army Research Office
P. O. Box 12211
Research Triangle Park, NC 27709-2211

2. Research Opportunity Title

Minerva Research Initiative (MRI)

3. Program Name

Department of Defense Minerva Research Initiative

4. Research Opportunity Number

W911NF-11-R-0011

5. Response Due Dates

White Papers: Thursday, 1 September 2011, 4:00 PM Local North Carolina Time

Full Proposals: Monday, 7 November 2011, 4:00 PM Local North Carolina Time

See paragraph 4 of Section IV for additional dates.

6. Research Opportunity Description

The Minerva Research Initiative (MRI) is a DoD-sponsored, university-based social science research program initiated by the Secretary of Defense. It focuses on areas 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, research institutions, and individual scholars and supports multidisciplinary and cross-institutional projects addressing specific topic areas determined by the Department of Defense. The MRI 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 the seven (7) topics listed below. Detailed descriptions of the topics can be found in Section VIII, "Specific Minerva Research Initiative Topics." The detailed descriptions are intended to provide the proposer a frame of reference and are not meant to be restrictive. Innovative proposals related to these research topics are highly encouraged. White papers and full proposals are solicited which address the following topics:

- (1) Strategic Impact of Religious and Cultural Changes
- (2) Terrorism and Terrorist Ideologies
- (3) Science, Technology and Military Transformations in China and Developing States
- (4) National Security Implications of Energy and Environmental Stress
- (5) New Theories of Cross-Domain Deterrence
- (6) Regime and Social Dynamics in Failed, Failing, and Fragile Authoritarian States
- (7) New Approaches to Understanding Dimensions of National Security, Conflict, and Cooperation

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 topics may reside in different universities, or in different departments of the same university. Team proposals must name 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.

Historically Black Colleges and Universities [as determined by the Secretary of Education to meet requirements of Title III of the Higher Education Act of 1965, as amended (20 U.S.C. Sec. 1061)] and Minority Serving Institutions of Title V [as defined by 20 U.S.C. Sec. 1067k(3)] are encouraged to participate in the MRI program, either as single investigator applicants or as a member of a team. However, no specific funds are set aside for HBCU/MI participation.

7. Point(s) of Contact

A Research Topic Chief is identified for each specific MRI topic. Questions of a *technical nature* shall be directed to the Research Topic Chief identified in Section VIII of this BAA.

Questions of a *programmatic nature* shall be directed as specified below:

Minerva Research Initiative Program Point of Contact:

Dr. Erin Fitzgerald
Basic Science Office, ASD(R&E)
Email Address: Erin.Fitzgerald.ctr@osd.mil

Questions of a *business nature* shall be directed to the cognizant Grants Officer, as specified below:

Ms. Vonetta Goodson
Grants Officer
U.S. Army Contracting Command – Aberdeen Proving Ground
Research Triangle Park Contracting Division
ATTN: CCAP-SCR
P. O. Box 12211
Research Triangle Park, NC 27709-2211
Email address: AROR.MRIQuestions@us.army.mil

8. Instrument Type

It is anticipated that all awards resulting from this announcement will be grants.

9. Catalog of Federal Domestic Assistance (CFDA) Number

12.630

10. Catalog of Federal Domestic Assistance (CFDA) Title

Basic, Applied, and Advanced Research in Science and Engineering

11. BAA Questions and Answers

Interested parties shall submit comments or questions via electronic mail to the following email address: AROR.MRIQuestions@us.army.mil, and include “W911NF-11-R-0011” in the subject line. Comments or questions submitted should be concise and reference the relevant part and paragraph of the BAA. Please take caution when submitting questions containing proprietary or sensitive information.

White paper questions may be submitted between the time this announcement appears and 4:00 PM Local North Carolina Time, Monday, 18 August 2011. Questions related to white paper submission and submitted after this time will not be answered and the due date for white papers will not be extended. Responses to questions deemed applicable to the community of potential proposers will be posted on a Q&A section of the ARO web site at www.aro.army.mil under “For the Researcher” as they become available.

Questions regarding full proposals may be submitted between the time this announcement appears and 4:00 PM Local North Carolina Time, Monday, 31 October 2011. Questions submitted after this time will not be answered and the due date for submission of full proposals will not be extended. Responses to questions deemed applicable to the community of proposers submitting full proposals will be posted on a Q&A section of the ARO web site at www.aro.army.mil under "For the Researcher" as they become available.

II. AWARD INFORMATION

It is anticipated the awards will be made in the form of grants to universities. The awards will be made at funding levels commensurate with the proposed research, investigator/team type, and in response to defense service missions, as well as availability of funding. The base and option period may be incrementally funded.

Total amount of funding for five years available for grants resulting from this MRI BAA is estimated to be about \$35M, subject to availability of out-year appropriations. These funds will be allocated between two investigator award types:

- **Single investigator small team awards:** It is anticipated that the single investigator awards will range from \$30K to \$500K per year, with typical awards in the range of \$100K to \$300K per year. Awards in the upper end of the range will be made only for extremely meritorious proposals. Each individual award will be for a maximum term of three years.
- **Large team awards:** It is anticipated that the awards will range from \$0.5M to \$2M per year, with typical awards in the range of \$1M to \$1.5M per year. Awards in the upper end of the range will be made only for extremely meritorious proposals. Each team award will be for a three year base period with one two-year option period to bring the total maximum term of the award to five years.

The actual amount of each award will be contingent on availability of funds, the specific topic, and the scope of the proposed work. **Depending on the results of the proposal evaluation, there is no guarantee that any of the proposals submitted in response to a particular topic will be recommended for funding. On the other hand, more than one proposal may be recommended for funding for a particular topic.**

III. ELIGIBILITY INFORMATION

This MRI competition is open to institutions of higher education (universities), including foreign universities. Non-profit institutions and commercial entities may also be included on a university-led team, performing research as subawardees and receiving funding for their efforts.

IV. APPLICATION AND SUBMISSION INFORMATION

1. General Information

The white papers and full proposals submitted under this BAA must address unclassified basic research. White papers and full proposal submissions will be protected from unauthorized disclosure in accordance with applicable laws and DoD regulations. Proposers are expected to appropriately mark each page of their submission that contains proprietary information. Grants awarded under this announcement shall be unclassified.

Important 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.

The proposal submission process has two stages.

Stage 1 - Prospective offerors are expected to submit white papers to minimize the labor and cost associated with the production of detailed proposals that have very little chance of being selected for funding. Further, offerors are strongly encouraged to contact the appropriate Research Topic Chief for discussion of their ideas to enhance the chances that white papers will receive positive feedback. Based on an assessment of the white papers, the responsible Research Topic Chiefs will provide email feedback to the prospective recipients to encourage or discourage submission of full proposals. White papers arriving after the deadline may not receive feedback. Therefore, it is strongly encouraged that all white papers are submitted by the deadline to ensure feedback from the appropriate Research Topic Chiefs.

Stage 2 – Subsequent to white paper feedback, interested offerors are required to submit full proposals. All proposals submitted under the terms and conditions cited in this BAA will be evaluated in accordance with the evaluation criteria stated herein. Offerors can submit a proposal without submitting a white paper. However, it is strongly encouraged to submit a white paper within the deadline provided in this BAA, so feedback can be obtained.

Submission dates and times may be found in paragraph 4 of this section.

2. Submission of White Papers:

White papers shall be submitted electronically to AROR.MRIWhitepapers@us.army.mil. The email subject line should contain the following: W911NF-11-R-0011 White Paper.

Due Date: The due date for white papers is no later than 4:00 P.M. (Eastern Time) on Thursday, 1 September 2011. White papers received after the deadline will not be reviewed.

White papers shall comply with the following format.

- Paper size when printed - 8.5 x 11 inch paper
- Margins - 1 inch
- Spacing - single
- Font – No smaller than Times New Roman, 10 point
- Number of pages - no more than four (4) single-sided pages (excluding cover letter, cover, and curriculum vitae).

White papers not complying with formatting instructions will not be evaluated.

White paper content should be as follows:

- A one page cover letter (optional)
- A cover page, labeled "PROPOSAL WHITE PAPER," that includes the BAA number, proposed title, and offeror's technical point of contact, with telephone number, facsimile number, e-mail address, topic number, and topic title.
- Identification of the research and issues
- Proposed methods
- Potential implications for national defense
- Potential team and management plan
- Summary of estimated costs
- Curriculum vitae of key investigators (not included in page count)

The white paper should provide sufficient information on the research being proposed (e.g., hypothesis, theories, concepts, methods, approaches, data collection, measurement and analyses, etc.) to allow for an assessment by a subject matter expert. It is not necessary for white papers to carry official institutional signatures.

Acknowledgement of receipt of a white paper under this BAA will be accomplished via email to the addressee approximately one week after receipt.

Evaluation/Notification: Initial evaluations of the white papers will be issued on or about Thursday, 22 September, 2011.

3. Submission of a Full Proposal:

Full proposals shall be submitted electronically through www.grants.gov. Full proposals sent by fax or email will not be considered.

Registration Requirements for [Grants.gov](http://www.grants.gov): Proposals must be submitted electronically through Grants.gov. There are several one-time actions your institution must complete in order to submit applications through Grants.gov (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number; register with the Central Contract Registry (CCR); register with the credential provider; register with Grants.gov; and obtain approval for an Authorized Organization Representative (AOR) to submit applications on behalf of the organization). Go to http://www.grants.gov/applicants/get_registered.jsp for further information. Use the Grants.Gov Organization Registration Checklist, which may be accessed at http://www.grants.gov/applicants/register_your_organization.jsp to guide you through the process.

Applicants, who are not registered with CCR and Grants.gov, should allow at least 21 days to complete these requirements. It is suggested that the process be started as soon as possible.

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

VERY IMPORTANT – Download PureEdge Viewer: In order to view, complete, and submit an application package, you will need to download the appropriate software packages. Go to http://www.grants.gov/applicants/apply_for_grants.jsp for further information.

Submitting the Application

Application forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select “Apply for Grants,” and then select “Download Application Package.” Enter the CFDA number, 12.630, Basic, Applied, and Advanced Research in Science and Engineering. You could also enter the funding opportunity number for this announcement, W911NF-11-R-0011.

Application Forms – The forms are contained in the Application Package available through the Grants.gov application process. Offerors must complete the mandatory forms and any optional forms that are applicable (e.g., SF-LLL Disclosure of Lobbying Activities) in accordance with the instructions on the forms and the additional instructions below. The required fields should be completed in accordance with the “pop-up” instructions on the forms. To activate the instructions, turn on the “Help Mode” (icon with the pointer and question mark at the top of the form). Files that are attached to the forms must be in Adobe Portable Document Form (PDF) unless otherwise specified in this announcement.

Form: SF 424 (R&R) (Mandatory)

Complete this form first to populate data in other forms. Authorized Organization Representative (AOR) usernames and passwords serve as “electronic signatures” when your organization submits applications through Grants.gov. By using the SF 424 (R&R), proposers are providing the certification required by 32 CFR Part 28 regarding lobbying.

Form: Research & Related Other Project Information

Complete questions 1 through 5 and attach files. The files must comply with the following instructions:

Project Summary/Abstract (Field 7 on the form)

The project summary should be a single page that identifies the research problem, proposed methods, anticipated outcome of the research, if successful, and impact on DoD capabilities or broader implications for national defense. It should identify the Principal Investigator, the university (and other universities involved in the MRI team, if applicable), the proposal title, the MRI topic number, and the total funds requested from DoD for the 3-year base period (and, in the case of investigator team proposals, the additional 2-year option period and the potential 5-

year total period). The project summary must not exceed 1 page when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left and right) with font no smaller than Times New Roman, 10 point. To attach a Project Summary/Abstract, click "Add Attachment."

Project Narrative (Field 8 on the form)

The following formatting rules apply for Field 8

- Paper size when printed - 8.5 x 11 inch paper
- Margins - 1 inch
- Spacing - single
- Font – No smaller than Times New Roman, 10 point
- Number of pages - no more than twenty-five (25) single-sided pages.
The cover, table of contents, list of references, letters of support, and curriculum vitae are excluded from the page limitations. Full proposals exceeding the page limit may not be evaluated.

Include the following in Field 8

The narrative's first page must include the following information:

- Principal Investigator name
- Phone number, fax number, and e-mail address
- Institution, Department, Division
- Institution address
- Other universities involved in the MRI team, if applicable
- Past or current DoD Contractor or Grantee? If yes, provide Agency, point of contact; number
- Proposal title
- Institution proposal number
- Topic number and topic title

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

- Technical Approach: Describe in detail the basic science research to be undertaken. State the objective and approach, including how data will be analyzed and interpreted. 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. Include appropriate literature citations/references. Discuss the nature of expected results. Discuss potential applications to defense missions 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.

- **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) Describe the facilities available for the accomplishment of the proposed research and related education objectives. Describe any capital equipment planned for acquisition under this program and its application to the proposed research. If possible, budget for capital equipment should be allocated to the first budget period of the grant. Include a description of any government furnished equipment/hardware/software/information, by version and/or configuration that are required for the proposed effort.
 - (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 are proposed, make clear the division of research activities, to be supported by detailed budgets for the proposed subawards.
 - (c) Designate 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.
 - (d) Describe plans to manage the interactions among members of the proposed research team, if applicable.
 - (e) Identify other parties to whom the proposal has been, or will be sent, including agency contact information.
- **Curriculum Vitae:** Include curriculum vitae of the Principal Investigator and key co-investigators.

All applications should be in a single PDF file. To attach a Project Narrative in Field 8, click "Add Attachment."

Bibliography and References Cited (Field 9 on the form)

Attach a listing of applicable publications cited in above sections.

Facilities and Other Resources (Field 10 on the form)

This field not required.

Equipment (Field 11 on the form)

This field not required.

Other Attachments (Field 12 on the form)

Attach budget proposal at Field 12. You must provide a detailed cost breakdown of all costs, by cost category, by the funding periods described below, corresponding to the proposed Technical Approach which was provided in Field 8 of the Research and Related Other Project Information Form. The option must be separately priced. The Research and Related Budget form is not required.

The budgets should adhere to the following guidelines:

Detailed breakdown of all costs, by cost category, by the calendar periods stated below. For budget purposes, use an award start date of 15 April 2012.

For up to a three-year base grant , the cost should be broken down to reflect funding increment periods of:

- 1) Five and one-half months (15 Apr 2012 to 30 Sep 2012),
- 2) Twelve months (01 Oct 2012 to 30 Sep 2013),
- 3) Twelve months (01 Oct 2013 to 30 Sep 2014),
- 4) Six and one-half months (01 Oct 2014 to 14 Apr 2015)

For a potential two year extension option (large team awards), the additional cost should be broken down to reflect funding increment periods of:

- 5) Five and one-half months (15 Apr 2015 to 30 Sep 2015),
- 6) Twelve months (01 Oct 2015 to 30 Sep 2016), and
- 7) Six and one-half months (01 Oct 2016 to 14 Apr 2017).

Note that the budget for each of the calendar periods (e.g. 15 Apr 2012 to 30 Sep 2012) should include only those costs to be expended during that calendar period.

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.

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.
- 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.
- 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 – 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. Strong justification must be provided, and consultants are to be used only under exceptional circumstances where no equivalent expertise can be found at a participating university. Provide budget justification.
- Materials – Specifically itemized with costs or estimated costs. An explanation of any estimating factors, including their derivation and application, shall be provided. Include a brief description of the offeror's procurement method to be used (competition, engineering estimate, market survey, etc.). Justify.
- Other Directs Costs – Provide an itemized list of all other proposed other direct costs such as Graduate Assistant tuition, laboratory fees, report and publication costs and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists). NOTE: If the grant proposal is for a conference, workshop, or symposium, the proposal should include the following statement: "The funds provided by ARO will not be used for food or beverages."
- Fee/Profit – Fee/profit is unallowable.

Funding breakdown corresponding to the proposed Technical Approach which was provided in Field 8 of the Research and Related Other Project Information Form must also be attached.

Research and Related – Senior/Key Person Profile Form

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. Biographical sketches are required for the Principal Investigator and for other key personnel. Please be sure to include education and years.

Full Proposal Receipt Notices

After a full proposal is submitted through Grants.gov, the Authorized Organization Representative (AOR) will receive a series of three e-mails. It is extremely important that the AOR watch for and save each of the e-mails. Offerors will know that the proposal has been properly received when the AOR receives e-mail Number 3. Retain the Submission Receipt Number (e-mail Number 1) to track a submission. The three e-mails are:

Number 1 – The applicant will receive a confirmation page upon completing the submission to Grants.gov. This confirmation page is a record of the time and date stamp for the submission.

Number 2 – The applicant will receive an e-mail indicating that the proposal has been validated by Grants.gov within a few hours of submission. (This means that all of the required fields have been completed.) This initial email will also include a grants.gov tracking number.

Number 3 – The third notice is an acknowledgment of receipt in e-mail form from grants.gov. The e-mail is sent to the authorized representative for the institution. The e-mail for proposals notes that the proposal has been received and provides the assigned tracking number. The document, Tracking Your Application Package, located at <http://www.grants.gov/assets/TrackingYourApplicationPackage.pdf> Explains this process. **The proposal is not considered properly received until the AOR receives email #3.**

Late Submission of Full Proposals

Any full proposal submitted through Grants.gov where the time and date for submission (e-mail Number #1) is after the deadline for proposal submission in Section IV, paragraph 4 below will be late and will not be evaluated unless the Grants.gov website was not operational on the due date and was unable to receive the proposal submission. If this occurs, the time specified for the receipt of proposals through Grants.gov will be extended to the same time of the day specified in this BAA on the first workday on which the Grants.gov website is operational.

Be advised that Grants.gov applicants have been experiencing system slowness and validation issues which may impact the time required submitting proposals. After proposals are uploaded to grants.gov, the submitter receives an email indicating the proposal has been submitted and that grants.gov will take up to two days to validate the proposal. As it is possible for grants.gov to reject the proposal during this process, it is STRONGLY recommended that proposals be uploaded at least two days before the deadline established in the BAA so that it will not be received late and be ineligible for award consideration. It is also recommended to start uploading proposals at least two days before the deadline to plan ahead for any potential technical and/or input problems involving the proposer's own equipment.

4. Significant Dates and Times

Schedule of Events		
Event	Date	Time
White Papers Due	1 September, 2011	4:00 PM Local North Carolina Time
Notification of Initial DoD Evaluations of White Papers	22 September, 2011*	
Full Proposals Due	7 November, 2011	4:00 PM Local North Carolina Time
Notification of Selection for Award	12 January, 2012*	
Start Date of Grant	15 April, 2012*	

* These dates are estimates as of the date of this announcement.

V. EVALUATION INFORMATION

1. Evaluation Criteria

White papers will be evaluated by the responsible Research Topic Chief to assess whether the proposed research is likely to meet the objectives of the specific topic, and thus whether to encourage the submission of a full proposal. The assessment of the white papers will consider the same criteria as the evaluation of full proposals.

Full proposals responding to this BAA in each topic area will be evaluated using the following criteria. The first two evaluation factors are of equal importance:

- (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 the topical research area.

The following three evaluation criteria are each of lesser importance than any of the above two, but are equal to each other:

- (3) potential impact on the offeror's ability, through the proposed research, to perform and train students in defense-relevant social sciences;
- (4) the qualifications and availability of the Principal Investigators and key co-investigators (if applicable);

- (5) the realism and reasonableness of cost (cost sharing is not a factor in the evaluation). However, if an offeror would like they can propose cost sharing. 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, etc.). 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. **The cost sharing or matching plan should be included in the budget justification.**

Decisions for exercising options will be based on accomplishments during the base years and potential research advances during the option years that can impact DoD research priorities and capabilities. This only applies to large team awards.

2. Evaluation Panel

White papers will be reviewed either solely by the responsible Research Topic Chief for the specific topic or by an evaluation panel chaired by the responsible Research Topic Chief. An evaluation panel will consist of subject matter experts who are Government employees, specialized government employees secured under the Intergovernmental Personnel Act (IPA), or Systems Engineering and Technical Assistance (SETA) contractors. These individuals will sign a conflict of interest statement prior to receiving proposal information.

Full proposals will undergo a multi-stage evaluation procedure. The respective evaluation panels will review proposals first. Cost proposals will be evaluated by Government business professionals and support contractors. 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 employee and peer from the university community having access to technical and cost proposals submitted in response to this BAA will be required to sign a non-disclosure statement prior to receipt of any proposal submission. Findings of the evaluation panels will be forwarded to senior DoD officials who will make funding recommendations to the awarding officials.

Due to the nature of the Minerva program, the evaluation panels and reviewing officials may on occasion recommend that less than an entire Minerva proposal be selected for funding. This may be due to several causes such as insufficient funds, research overlap among proposals received, or potential synergies among proposals under a research topic. In such cases, proposal adjustments will be agreed by the offeror and the government prior to final award.

VI. AWARD ADMINISTRATION INFORMATION

1. Administrative Requirements

- CCR - Successful offerors not already registered in the Central Contractor Registry (CCR) will be required to register in CCR prior to any award resulting from this BAA. Information on CCR registration is available at www.ccr.gov.

- Certifications – Grant awards greater than \$100,000 require a certification of compliance with a national policy mandate concerning lobbying. Grant applications 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 to each applicant seeking federal assistance funds exceeding \$100,000:

Certification Regarding Lobbying Activities

- (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 Form to Report Lobbying," 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.

2. Reporting

In general, for each grant award, annual progress reports and a final progress report are required which summarize the technical progress and accomplishments during the performance period. Specific reporting requirements will be included in each resulting award.

VII. OTHER INFORMATION

1. Use and Protection of Human Subjects in Research

All research involving human subjects must be conducted in accordance with 32 CFR 219, 10 USC 980, and DoDD 3216.2, as well as other applicable federal and state regulations. Recipients of grant awards resulting from this BAA must be cognizant of and abide by the additional restrictions and limitations imposed on the DoD regarding research involving human

subjects, specifically as regards vulnerable populations (32 CFR 219 modifications to subparts B-D of 45 CFR 46), recruitment of military research subjects (32 CFR 219), and surrogate consent (10 USC 980). The regulations mandate that all DoD activities, components, and agencies protect the rights and welfare of human subjects of study in DoD-supported research, development, test and evaluation, and related activities hereafter referred to as “research.” The requirement to comply with the regulations applies to new awards and to continuing research.

2. Department of Defense High Performance Computing Program

The DoD High Performance Computing Program (HPCMP) furnishes the DoD S&T and DT&E communities with use-access to very powerful high performance computing systems. Recipients of DoD contracts, grants, and assistance instruments may be eligible to use HPCMP assets in support of their funded activities if Research Topic Chief approval is obtained and if security/screening requirements are favorably completed. Additional information and an application may be found at www.hpcmo.hpc.mil/.

VIII. SPECIFIC MINERVA RESEARCH INITIATIVE TOPICS

FY2011 MINERVA RESEARCH INITIATIVE TOPIC #1

Strategic Impacts of Religious and Cultural Changes in the Islamic World

Objective: The objective of this program is to understand the implications of trends in religious and cultural life in the Islamic world.

Impact: This research program should be an important contributor to the intellectual basis for developing strategy, policy, and engagements at all levels with people and groups in the Islamic world. Better understanding these trends and dynamics will also be useful in countering the influence of violent extremists and in improving training systems to support more effective, more culturally sensitive interactions between the U.S. military and Islamic populations.

Background: Recent developments throughout the Middle East and Asia highlight the need for a better understanding of the influence of and trends in Islamic religious and cultural norms in order to build and sustain peace within the region. Understanding the various “climates” within the Islamic world is important in engaging that world and finding resources and new avenues to more effectively promote rule of law, social justice and decreases in political violence and terrorism. As religion is only one influence on society, it is important to examine other social and cultural variables including political, social, and economic variables.

Potential Research Areas: The Department of Defense seeks to support a program of multidisciplinary research that will elucidate the relationships amongst social, cultural, political, religious and economic factors that interact to foster political violence, terrorism or insurgent behavior. Successful proposals will explore the strategic impact of religious and cultural trends around the world, their impact on political and economic stability and the mechanisms that support expanding or declining trends. Subject areas of particular interest include but are not limited to:

- Social, economic and political vulnerabilities across the regions of interest, and the role Islam plays in modulating these vulnerabilities.
- The relationship between religious ideologies and the behavior of sub or trans-state actors bound by ethnic, tribal, and regional identities. For a given set of areas, what is specific and what is generalizable?
- The impact of religious and cultural identities on intragroup and intergroup dynamics.
- Characterization of the impacts of religion and culture according to contextual factors such as urban versus rural; economic system used; and the authority, status, and dynamics within a clan or tribe influence.
- Transnational networks of religious thinkers and authorities. How do we determine the network and the roles of key individuals within them? What determines influence? Why? How can we recognize these leaders or movements as they emerge? How are Al Qaeda and its affiliates affecting tribal dynamics across the region?
- Debates between religious extremists and their political competitors, religious and non-religious alike. What is the result of such debate? Does it change the views of the debaters or those listening to such debates? Why and to what extent? Are there indicators that signal the debate may initiate collective behavior change? Are there “counter-dialogues” within these cultures and communities that account for why radicalism and militancy are found more in some places than others?

All regions of the globe are open to inquiry. The impact of new phenomena such as global travel, the Internet and other aspects of communications technologies that can span continents may also be considered, placing these studies within a larger strategic context. Both historical and contemporary projects will be considered. In either case, successful proposals must be able to explain the relevance of findings to contemporary political and strategic contexts and describe the specific mechanisms that supported the current or emerging contexts. Preference will be given to studies by experts capable of analyzing source material in the original languages, to studies that exploit materials that have not been previously translated, and to studies that combine academic expertise in Islamic studies with other relevant disciplines, such as anthropology, economics, political science, sociology, social and cognitive psychology, and computational science.

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FY2011 MINERVA RESEARCH INITIATIVE TOPIC #2

Terrorism and Terrorist Ideologies

Objective: The objective of this program is to examine the relationship between terrorist ideologies and intergroup conflicts.

Impact: This research will help improve the characterization of terrorist networks and help identify the processes necessary to influence populations that harbor terrorist organizations. Its applications will be relevant to a wide range of stakeholders, from intelligence analysts to strategic planners to military operators tasked with understanding and influencing terrorist networks. Development of models that can be used to explain and explore human behavior in the area of organized violence will be especially helpful to the Department of Defense in understanding where organized violence is likely to erupt, what factors might explain its contagion, and how to circumvent its spread. Research on belief formation and emotional contagion will provide cultural advisors with better tools to understand the impact of operations on the local population. This research may also contribute to countermeasures to help revise or influence belief structures to reduce the likelihood of militant cells forming.

Background: Today's international security environment demonstrates a continuing need to better understand the dynamics of terrorist organizations, their underlying motivations and ideologies, how they organize, how they recruit and retain members, and how they evolve and adapt in the face of new challenges.

Possible Research Areas: Successful proposals will examine the relationship of the structure, processes, and dynamics of terrorist organizations and ideologies to political and social conflict. Areas of particular interest include but are not limited to:

- The psychological, social, cultural, economic, political, and community factors that affect the choice to actively participate in or passively support terrorist organizations.
- The impact of global, national and regional political dynamics on individuals' and groups' decisions to alter tactics or to adopt or abandon a specific behavior (e.g., becoming violent, suicide bombing).
- The impact of various types of security forces (e.g., domestic vs. foreign, regional vs. international) on the use of asymmetric tactics such as terrorism.
- The role of both traditional communication mechanisms and new media technologies, including social media, in terrorist recruitment, radicalization, and de-radicalization, including radicalization of domestic populations.
- The spread of ideologies across culturally diverse populations, as well as beyond membership in specific organizations: What trends can be observed in the processes by which such beliefs are spread? What strategies allow moderate ideologies to be introduced as counterpoint to extremist ideologies, and when is such "counter-messaging" most effective?
- Factors which may inhibit or mitigate the radicalization of the majority of a given population or, in fact, promote a relative social resilience or resistance to terrorist ideology (e.g., in Indonesia) compared to vulnerabilities in other states. Is there a tipping point where a community may be at risk of transitioning from sympathy to radical ideology to violent behavior on behalf of the ideology?

Innovative multi-disciplinary approaches are needed to integrate the various approaches to the

study of terrorist networks including both quantitative and qualitative methods. The relevance of context and situation may require field research. Interests include, but are not limited to, the application of novel approaches to studying the evolution of networks, the structure of networks, and the distribution of information. These could include innovative approaches to uncovering structure such as methods for categorization, clustering, etc. Terrorists and terrorist organizations are relatively rare events relative to the total size of any given population, and accordingly methods in the study of rare events may be considered. This effort will also involve multiple levels of analysis ranging from the individual to the nation-state. The integration of computational and naturalistic approaches is encouraged.

Researchers need not focus exclusively on the contemporary period, but they must be able to explain the relevance of their findings to current debates about terrorism and, where appropriate, help anticipate future trends.

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FY2011 MINERVA RESEARCH INITIATIVE TOPIC #3

Science, Technology and Military Transformation in China and Developing States

Objectives: The objective of this program is to explore the social, cultural, and political characteristics and implications of trends and developments in growing military powers such as China as well as in supporting technological and industrial sectors as they relate both to security policy and strategy and to the broader evolution of society.

Impact: Research into dynamics and trends in military and technology will provide valuable insights into the workings of an important and influential power. Improving our understanding of these aspects of modern Chinese development could inform a wide range of decisions relevant to national security and economic policy, from diplomacy to science and technology planning to military resource allocation.

Background: The Chinese publish a wealth of unclassified information about military, technological and scientific developments. However, much of this material is difficult for scholars outside of China to locate or access and most of it is not generally known beyond a small circle of researchers. The breadth and depth of material, and the scope of topics, offers insights into China regarding everything from industry and agriculture, to technology development and scientific research, to politics and military issues. Exploring these information resources can enable a better understanding of China, its future, and its aspirations in our evolving world.

Potential Research Areas: Topics of interest include:

- The effects of a shift from a command to a market economic system on the defense establishment and budget;
- Changing identities in the People's Liberation Army (PLA) and related entities that accompany ideological shifts from a closed to a more open political system;
- Perceptions and the evolution of PLA strategic thinking;
- Formal and informal aspects of Chinese decision-making process, bureaucratic practices, and politics;
- Understanding PLA perceptions of China's international role and military needs;
- Education and challenges for military or industrial technology; and
- Chinese reactions to U.S. behaviors, statements, scientific programs/developments, or perceived intentions.

While preference will be given to studies of these topics in China, there will also be consideration for proposals that examine related questions for nations with similarly rapidly developing military structures such as India, Pakistan, Brazil, or Iran.

Applicants may consider teaming with computer, information, anthropology, sociology, political science, international relations), human factors, and behavioral science specialists so that analyses incorporate many perspectives and collaboration technologies unite experts in an overarching bridge across relatively wide cultural spans. When appropriate, use of original-language source materials is strongly preferred but not essential. Preference will be given to studies that combine academic expertise in regional area studies with other relevant social science disciplines.

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FY2011 MINERVA RESEARCH INITIATIVE TOPIC #4

Security Implications of Energy, Climate Change, and Environmental Stress

Objective: The objective of this program is to establish new theories and models of societal resilience and collapse in response to external pressures related to energy, ecosystem, environmental stressors, and resource uncertainty and change.

Impact: This research will aid DoD decision-making and policy efforts in terms of the development of improved methods for identifying and anticipating potential hot zones of unrest, instability and conflict and help in strategic thinking about resource allocation for defense efforts and humanitarian aid.

Background: Human populations worldwide are experiencing shifts from current climatic regimes to yet unknown regimes that may vary dramatically from current baselines (e.g., precipitation). Until recently, most scholarship on energy and climate change has focused on natural processes, economic impacts and policy implications. In the last few years, social scientists have begun to explore the intersection among these factors by asking how changes in energy technology and the environment alter risk perception and human behavior and affect the availability and distribution of essential resources (e.g., water, grains) and geomorphologic changes (e.g., desertification). Affected societies experiencing these shifts must work to mitigate competition over increasingly scarce resources, increased internal and external migration, and the spread of disease, all of which can contribute to the emergence of political and social unrest. In addition, worldwide increases in demand for nonrenewable energy and other resources have the potential to limit the ability of societies to sustain current economic and social standards of living.

Anticipating and predicting the emergence of such instabilities requires a basic scientific understanding of the complexity surrounding human and natural systems interactions (e.g., nonlinear interactions, positive and negative feedback mechanisms, emergent properties, tipping points) that has not yet been achieved. In the social sciences, recently developed system dynamics state stability models, for example, generally fail to adequately address resource and ecological factors. Other relevant modeling efforts have been heavily biased towards natural system dynamics primarily viewing humans as merely negative drivers of ecosystem change. Further, the potential data hurdles (e.g., collection, integration) for such a complex problem are only just beginning to be addressed.

Potential Research Areas: The Department of Defense is interested in research that will contribute to fundamental understanding of the implications of energy, climate change, and environmental stress from a global security perspective. Relevant questions may include:

- How will populations respond socially and politically to resource scarcity or imbalance, to include food and water insecurity? What are the geographic and temporal characteristics of social and political coping strategies? How might the robustness of these adaptive approaches be modeled?
- What will be the early indicators of increased stress stemming from scarcity? What cognitive and behavioral changes might be anticipated?
- How will increased frequency or intensity of natural disasters affect civil-military relations in strategically significant countries? How will the relationship differ based on a nation's culture, economic resources, and infrastructure?

- What accounts for societal resilience in the face of changes in ecosystems and the availability of essential natural resources?
- What emerging technologies promise to reduce DoD dependence on fossil fuels and reduce greenhouse gas emissions? What would be the second and third order effects and demands on DoD human behavior? What would be the geopolitical and economic effects of such changes through the relevant industries?

Proposed research should involve analytical approaches to the integration of human and natural systems through the collection of original data in field or experimental settings.

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FY2011 MINERVA RESEARCH INITIATIVE TOPIC #5

Regime and Social Dynamics in Failed, Failing, and Fragile Authoritarian States

Objective: The objective of this program is to develop new insights into the causes and dynamics of stability and instability in authoritarian states.

Impact: This research will assist policymakers in identifying warning signs of political instability in authoritarian states as well as to evaluate alternative tools for influencing developments in those states. Additionally, where the military or other government institutions play a role in assisting transitions in authoritarian states this research will inform strategies and tactics for such contingencies.

Background: In the course of Operation Iraqi Freedom, the acquisition of internally-produced documentation provided rare insight into the balancing of power that allowed Saddam Hussein to maintain a relatively stable state structure in the face of significant external stress. Recent events in North Africa and the Middle East underscore the fact that other authoritarian regimes with extremes in the concentration of political power can experience sudden changes in political structure or even civil war. The analysis of such potentially volatile regimes is needed to provide understanding and insight for national policy and approaches to military engagement with these states, before, during, and after these transformations.

Potential Research Areas: Successful applicants will explore the political, social, and cultural dynamics within authoritarian regimes. Some examples of appropriate research include but are not limited to:

- Studies of leadership dynamics
- Social-psychological studies of national identity and political unity
- Popular perceptions of international relations and systems
- The role of national and social identity in building or undermining political unity
- The ability of governments to provide public goods as nations transition from authoritarian rule
- The impact of ethnic/tribe/religion and/or economic differences on political transition
- The role of foreign governments and non-government organizations on political transitions
- The effects of foreign sources of aid
- The role of institutional interdependence and trust
- Societal resilience and collapse in the face of external stressors
- The relationships between government institutions (e.g., military, police) and the population and various subpopulations in terms of such factors as generalized trust, social integration, corruption, etc.
- Methods and strategies historically employed by leadership for maintaining coalitions and cooperation across disparate tribal and religious groups

Preference will be given to researchers capable of analyzing source material in the original languages, to studies that exploit materials that have not been previously translated, and to innovative multi-disciplinary projects that bring insights from the humanities and social sciences and other relevant disciplines.

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FY2011 MINERVA RESEARCH INITIATIVE TOPIC #6

New Theories of Cross-Domain Deterrence

Objective: The objective of this program is to establish new theories and models of deterrence that incorporate strategic behavior among international actors in cyber and space domains as well as in traditional geographic domains.

Impact: This research will assist planners and policy makers to understand the implications of the growing reliance on cyber and space technologies for threat assessments, strategic vulnerability assessment, and crisis stability.

Background: Since the end of the Cold War, technology developments, particularly in cyber and space domains, together with shifts in the geostrategic environment, have called into question the utility of traditional models of deterrence. Not only do space and cyberspace represent relatively new domains for international actor engagement, but information and communications technologies have empowered individuals and non-state actors to compete with states and potentially threaten state interests. While deterrence theories have traditionally focused on the strategic behavior of actors across geographic domains, today's international security environment demands consideration of strategic interaction in cyber and space domains as well. Technological advances and the proliferation of social networking and social media tools add complexity to the strategic deterrence problem. Finally, as a deterrence campaign will occur over months to years, the definition of "success" is not necessarily clear.

Potential Research Areas: Proposals are requested that will address the implications of traditional assumptions of deterrence and provide insights into alternative paradigms that include cyber and space domains. Questions of particular interest include but are not limited to:

- How can we account for cross-domain effects to achieve a deterrence goal? How can the multiple axes upon which actions could take place be integrated? (e.g., are threats of economic sanctions a viable action to deter something in cyberspace?)
- Which mode of deterrence — by retaliation, by denial, or by resilience — is most applicable to which actors and which threats? What is the cost and benefit of restraint?
- How does asymmetry of stakes affect deterrence, and how do stakes change as a crisis or conflict evolves?
- For non-traditional threats, what can be learned regarding the perceptions, value structures, and decision making processes of the adversary? How do cultural elements come into play? Can a generalized alternative decision making theory be implemented to better understand deterrence?
- How do states determine and account for the reactions of allies, partners, and multiple state and non-state centers of decision-making as they pursue their interests?
- How can we shape the impact of radical groups using social media to recruit and radicalize neutral non-state individuals and groups? What forces draw neutrals closer/further away from engaging in radical dialogues via social media?
- What role does population influence (e.g. via social media) play in deterrence theory?
- How do unique features of space and cyberspace —related to such factors as information availability, infrastructure vulnerability, or attribution — affect existing models of deterrence?

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FY2011 MINERVA RESEARCH INITIATIVE TOPIC #7

New Approaches to Understanding Dimensions of National Security, Conflict, and Cooperation

Objective: This program seeks to explore and develop new or maturing interdisciplinary approaches to security issues. These approaches may include and combine history, political science, anthropology, sociology, demography, economics, and systems and network analyses to explore new dimensions of national security, conflict, and conflict resolution in order to develop new theories and models that address the security challenges of the 21st century.

Background: Just as the Cold War gave rise to new ideas and fields of study, such as game theory and Kremlinology, the challenges facing the world today are prompting a much broader conception and application of national power than just military prowess. The government and the Department of Defense need to explore new approaches and methods in order to better understand what we have overlooked and what is on the horizon. What topic areas or questions relevant to international affairs, international security, and national security, have not been properly understood or are emerging? What disciplines have contributions to make and can help us better understand the future?

Examples of these open questions include but aren't limited to:

- The impact of formal economies, informal economies, and economic corruption on regional stability
- Region-specific concepts of corruption and what constitutes a tipping point in perception that can foster societal outrage and potential social unrest
- Measures of effectiveness for "whole of government" messaging activities (i.e., those in which DoD plays a part, but may not have the key role) when engaging across domains as varied as strategic communication, public diplomacy, etc., especially if faced with the need to respond to rapidly changing events based on data substantially sparser and potentially less accurate than used for traditional analysis techniques
- The role of foreign governments and non-governmental organizations on political transitions
- The relationship between security, military capability, and national and international economic prosperity in the 21st century

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