



## **Sciences Addressing Asymmetric Explosive Threats**

### **INTRODUCTION:**

This publication constitutes a Broad Agency Announcement (BAA) as contemplated in the Department of Defense Grants and Agreements Regulations (DoDGARS) 22.315(a). A formal Request for Proposals (RFP), other solicitation, or additional information regarding this announcement will not be issued.

The Office of Naval Research (ONR) will not issue paper copies of this announcement. The ONR reserves the right to fund all, some or none of the proposals received under this BAA. ONR provides 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 ONR to treat all proposals as sensitive competitive information and to disclose their contents only for the purposes of evaluation.

### **I. GENERAL INFORMATION**

**SPECIAL NOTICE 1:** All Grant Applications submitted under this BAA shall be submitted via the Grants.Gov "APPLY" function. No other form of paper or electronic submission will be accepted unless the prospective grantee organization applies for and receives a waiver in accordance with Section IV, Application and Submission Information, Paragraph 5 entitled 'Submission of Grant Proposals to Grants.gov' below. White Papers are not submitted via Grants.gov; instructions for White Papers are provided below in Section IV.

**SPECIAL NOTICE 2:** The following information is being provided for proposals submitted through the Grants.gov portal at <http://www.grants.gov/> . Grants.gov will no longer accept grant/cooperative agreement proposals using the PureEdge Forms. All attachments to grant applications submitted through Grants.Gov must be in Adobe Portable Document Format. Proposals with attachments submitted in word processing, spreadsheet, or any format other than Adobe Portable Document Format will not be considered for award.

SPECIAL NOTICE 3: Due to a large increase in the volume of grant proposals received by the federal government recently, the Grants.gov portal designated for receipt of all grants proposals is struggling to handle the number of proposals being submitted. Applicants who have registered with Grants.gov are urged to submit their proposals electronically **at least three days before the date and time proposals are due**. Such early submission will allow a proposer time to submit its proposal to ONR through an alternative electronic method in the event the proposal is not validated (i.e., accepted) by Grants.gov after two days. See the special notice on alternate submission under section IV.5. below in this BAA.

**1. Agency Name -**

Office of Naval Research

**2. Research Opportunity Title – Sciences Addressing Asymmetric Explosive Threats**

**3. Program Name – N/A**

**4. Research Opportunity Number - ONR BAA 09-022**

**5. Response Date -**

**White Papers due: 4 June 2009**

**Full Proposals due: 13 August 2009**

**6. Research Opportunity Description -**

The Office of Naval Research (ONR) is interested in receiving proposals describing innovative scientific concepts that will form the foundation for future technologies that may be developed and implemented to efficiently and effectively address future asymmetric threats, resulting in explosive events. This BAA is part of a basic research program, and as such the knowledge and technologies developed here may lead to future applied research; however, research under this program is limited to fundamentally new theories, data, concepts, and principles.

Work funded under this BAA will consist exclusively of basic research. With regard to any restrictions on the conduct or outcome of work funded under this BAA, ONR will follow the guidance on and definition of "contracted fundamental research" as provided in the Under Secretary of Defense (Acquisition, Technology and Logistics) Memorandum of 26 June 2008. As defined therein, the definition of "contracted fundamental research", in a DoD contractual context, includes [research performed under] grants and contracts that are (a) funded by Research, Development, Test, and Evaluation Budget Activity 1 (Basic Research), whether performed by universities or industry. In conformance with the USD(AT&L) guidance and National Security Decision Directive 189, ONR will place no restriction on the conduct or reporting of unclassified fundamental research, except as otherwise required by statute, regulation or

Executive Order. While fundamental research is often awarded under grants with universities and under contracts with industry, under this BAA grant awards will be issued without regard to the nature of the recipient.

As regards the present BAA, the Research and Development efforts to be funded will consist of basic research. The funds available to support awards are Budget Activity 1.

This BAA includes four (4) Basic Research areas, described in the following paragraphs:

The Predict/Prevent Research Area is a fundamental research program of theory-driven work that seeks to understand and computationally model the human dependent components of asymmetric activities. Proposals should address one or more of the four basic science topics described below that must be overcome in order to enable the development of computational models that will be able to support decision makers and planners at the tactical, operational and strategic levels. These topics are not limited to computational model development, but include the need to develop an understanding of the influences on individual and human network behavior, indicators of asymmetric activities, techniques for data validation and working with missing or incomplete data sets.

The Predict/Prevent Research Area seeks multidisciplinary approaches to address one or more of the six topics identified below. This includes drawing on social science disciplines including, but not limited to, anthropology, cognitive sciences, criminology, economics, history, linguistics, psychology, political science, and sociology. Proposals that combine social science methodology and expertise with computational, mathematical and statistical techniques to develop models and algorithms are strongly encouraged.

Specific Predict/Prevent topics:

P1. This topic seeks a better understanding of, or the ability to predict, human networks that carry out asymmetric activities without an understanding of human resources, motivations, logistics capabilities, environment and resources available to the network. Research is needed into how to determine what the relevant parameters are that enable human networks to perform asymmetric acts. This includes research to develop techniques to effectively aggregate and model disparate data sources and types. Anticipated deliverables would be computational models and techniques and methods.

P2. Decision-making frameworks are thought to vary culturally and dynamically. This topic seeks basic research that can identify the conditions or influences that stimulate shifts in decision frameworks over time; in particular, research that elucidates the conditions that motivate engagement (at the individual or group level) in asymmetric acts or the cessation of asymmetric activities. Also of interest is how these influences are transmitted/communicated (e.g., through the media, peer groups). The goal of this work is to develop the knowledge base that will provide the capability to build dynamic predictive models of adversary

courses of action. Anticipated deliverables would be publication of peer-reviewed manuscripts advancing the state of the knowledge base.

P3. This topic seeks to develop methods to verify the validity of data, compute appropriate confidence levels, and determine the opinion level/bias of a digital source. Increasing amounts of potentially useful social, cultural and economic information is available in open source digital form. However, the validity of this information is often uncertain. Anticipated deliverables would include tested/validated methods and techniques.

P4. This topic seeks research that provides approaches and methods to overcome challenges in data/modeling. The use of models developed from data-rich cases are difficult to generalize, or use, in predicting the future due to data inconsistencies and missing data. Additional challenges to data models include methods for the inclusion of terms within models whose values cannot be normalized and the translation of imperfect data to models in the absence of common dimensional references. Anticipated deliverables would be new methods to address this challenge.

P5. This topic seeks to mature an understanding of what the real data needs are for varying levels of human contextual questions about populations and subpopulations. Contextual questions should be grouped as a function of data requirements. Human science studies normally assume that prolonged access to a culture of interest is required in order to develop meaningful insights about a culture. For many areas of interest to the DoD, such long term access would be difficult and expensive to achieve. Obtainable data is also generally only sampled since either only a small subset of the population has an ability to project a message or only a portion of data sets may be visible to researchers.

P6. This topic seeks to explore how to characterize persona, human network, and decision model resolution, and how to map resolution requirements, to contextual questions. Additional work is needed to develop better analytic tools to determine which parameters should be included in a model, given the intended use of that model (causality).

The goal of the Detect Research Area is to develop a science base to support future capabilities possessing the following general properties:

- stand-off (~100 meters) detection
- wide-area (>60°) point detection
- detection and discrimination of buried or hidden objects
- remote and point detection with high fidelity
- real-time detection
- on-the-move detection
- high probability of detection ( $P_D$ )
- low probability of false alarms ( $P_{FA}$ )

Seven topics address pertinent scientific challenges which require innovative theory, fundamental analysis, numerical modeling and simulation and laboratory proof-of-concept experimentation:

D1. This topic seeks the ability to understand and detect characteristics of old or aging explosive vapors and residues (i.e, oxidized, hydrated, or deteriorated by UV exposure), and distinguish them from new sources and interferents. An emphasis on analysis and molecular chemistry of high explosive compounds (including energetic materials, binders, and plasticizers) is anticipated.

D2. This topic seeks basic research and fundamental understanding of if and how propagating energy can couple to buried or hidden explosives, and sensing the resultant effects. Any form of energy that can propagate may be proposed, including schemes using combinations (e.g., acoustic and RF). Research should include studies of ideal high-energy density compounds, as well as practical compounds (where boundaries and imperfections exist), since these may affect energy coupling mechanisms, time-scales, and resultant effects. Theoretical analysis of energy coupling for detection effects is desired, with an emphasis on maximizing sensitivity and selectivity of detection.

D3. This topic seeks basic research in unconventional approaches and advancements to wide area detection capability that can locate and discriminate natural objects buried (to 50 cm depth) from explosives. Wide area, low fidelity sensors in a multi-modal scheme could be considered to improve detection probabilities (e.g., overlays of ground penetrating radar, color imagery, and acoustic returns). Proposals for this topic may be combined with Detect topic 2. Researchers responding to this topic must demonstrate awareness of already existing wide area detection capabilities, and clearly indicate how their proposed research will establish scientific foundations for new, unconventional, and unique approaches to wide area shallow-depth detection.

D4. This topic seeks fundamental understanding and basic principles in the domain of miniature remote sensors detecting explosive vapor and residue through non-spectroscopic means. Research should focus on multiple sensory types that complement spectroscopic information by detecting orthogonal physical qualities (e.g., absorption spectrum and molecular mass).

D5. This topic seeks to advance understanding, including algorithms, that improve detection fidelity by developing methodology and theory for optimizing detection when multiple illuminating sources and orthogonal sensors are used. Such research may have applications to the Detect topic 1, and proposed research for this topic should be considered an extension of ongoing research to optimize detection selectivity and sensitivity via coherent control of probing electromagnetic radiation.

D6. This topic will support innovative research to determine if spectroscopic responses characterizing practical high explosive compounds (i.e., including impurities and binders/plasticizers) exist in the sub-mm frequency domain (between 0.1 to 1 THz). This frequency interval has atmospheric absorption- and pass-bands that are dominated by molecular water and oxygen interactions, yet these absorptions are far weaker than for frequencies  $> 1$  THz. If characteristic sub-mm spectroscopic information exists (possibly characterizing molecular rotational vice vibrational effects), it might be more detectable than THz spectral features.

D7. This topic is focused on the terahertz detection domain, which requires further fundamental research to overcome atmospheric effects and understand basic physical mechanisms.

The Neutralize Research Area seeks to develop a robust understanding of fundamental principles and characteristics of explosives, explosive devices, and the surrounding environment that could be exploited by potential neutralization methodologies. The Neutralize Research Area will also pursue increased understanding of technologies to enable neutralization. In all cases, the desire is for standoff capability.

Three topics address desired scientific inquiries, such as theory, fundamental analysis, numerical modeling and simulation, or laboratory proof-of-concept experimentation.

N1. This topic supports research towards electromagnetic energy transfer into explosive compounds that can affect a destabilization of the explosive or associated components (binders, plasticizers, etc.). Destabilization could result in detonation, deflagration, or dudding of the explosive, and the interactions should occur at the molecular level (i.e., not electrostatic discharge or bulk thermal heating effects). This topic is closely coupled with D1 above.

N2. This topic seeks basic research and fundamental understanding of if and how propagating energy can penetrate soils and other obscurants to couple to buried or hidden explosives, and maximizing the resultant effects. Any form of energy that can propagate may be proposed, including schemes using combinations (e.g. acoustic and RF). Research should include studies of ideal high energy density compounds, as well as practical compounds (where boundaries and imperfections exist), since these may affect energy coupling mechanisms, time-scales, and resultant effects. Theoretical analysis of energy coupling for neutralization effects is desired, with an emphasis on maximizing the coupled energy.

N3. This topic addresses innovative EM source devices to produce required field strength/power levels while providing significant reductions size, prime power consumption, cooling, and increases in efficiency and output. This topic also covers innovative antenna technologies specifically addressing EM frequencies of known effectiveness.

The Mitigation Research Area addresses scientific concepts with potential to protect personnel and/or materiel from detonation effects (blast, fragmentation, thermal, etc.).

M1. This topic will support research focused on the reduction of the energy output from a detonating device, or impeding the propagation of the blast wave from stand-off distances.

M2. This topic area addresses novel armor materials that provide increased protection for personnel and vehicles with reduced weight. Particular interest is in nano-materials and research efforts towards achieving macro-level materials (i.e., threads and yarns or films) while maintaining robust material properties of the nano-scale product.

## **7. Point(s) of Contact –**

Questions of a technical or programmatic nature should be submitted to:

Program Manager Name: CAPT Mark Stoffel  
Address: 875 N. Randolph St, Arlington, VA 22203  
Code: 30  
Email: [mark.stoffel@navy.mil](mailto:mark.stoffel@navy.mil)  
Note: include “ONR BAA 09-022” in the e-mail subject line.

Questions of a technical nature should be submitted to:

Program Manager Name: Dr. Dan Prono  
Address: 875 N. Randolph St, Arlington, VA 22203  
Code: 30  
Email: [daniel.prono@navy.mil](mailto:daniel.prono@navy.mil)  
Note: include “ONR BAA 09-022” in the e-mail subject line.

Questions of a business nature should be submitted to:

Name: Pleshette Brown  
Address: 875 N. Randolph St, Arlington, VA 22203  
Code: 253  
Telephone: (703) 696-4126  
Email: [pleshette.brown@navy.mil](mailto:pleshette.brown@navy.mil)  
e-mail is preferred; include “ONR BAA 09-022” in the subject line.

Questions of a security nature should be submitted to:

Derrick Shack  
Information Security Specialist  
Office of Naval Research  
Security Department, Code 43  
One Liberty Center  
875 N. Randolph Street  
Arlington, VA 22203-1995  
Email Address: derrick.shack@navy.mil

**8. Instrument Type(s) -**

Awards may take the form of grants.

**9. Catalog of Federal Domestic Assistance (CFDA) Number -**

12.300 Basic and Applied Scientific Research-ONR

**10. Catalog of Federal Domestic Assistance (CFDA) Title -**

Basic and Applied Scientific Research

**11. Other Information -**

This announcement is restricted to basic research. Grants made under this BAA are for scientific study and experimentation directed towards advancing the state of the art and increasing knowledge or understanding.

THIS ANNOUNCEMENT IS NOT FOR THE ACQUISITION OF TECHNICAL, ENGINEERING AND OTHER TYPES OF SUPPORT SERVICES.

**II. AWARD INFORMATION**

The amount and period of performance of each selected proposal will vary depending on the research area and the technical approach to be pursued by the selected offeror.

The estimated total amount of awards is \$27M anticipated to be made available over a three year period. ONR will obligate subsequent funding as it is made available in the out-years.

Estimated Total Amount of Funding Available (\$K)\*:

FY10	FY11	FY12	Total
9000	9000	9000	27000

Anticipated Number of Awards:

One or more awards per Task, as described in the Research Opportunity Description. An Offeror may propose on more than one Task.

Anticipated Range of Individual Award Amounts:

Roughly \$300K per year

Anticipated Period of Performance:

Up to three (3) years

\* For the past two years Congress has placed limits on the percentage of facilities and administrative (F&A) costs that can be paid by the Government using basic research (6.1) funds. Currently F&A costs paid under contracts and grants for the performance of basic research may not exceed 35 percent. It is unknown at present whether a similar indirect cost restriction will apply to 6.1 funds in FY 2010 or thereafter.

### **III. ELIGIBILITY INFORMATION**

All responsible sources from academia and industry may submit proposals under this BAA. Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals. However, no portion of this BAA will be set aside for HBCU and MI participation.

Federally Funded Research & Development Centers (FFRDCs), including Department of Energy National Laboratories, are not eligible to receive awards under this BAA. However, teaming arrangements between FFRDCs and eligible principal bidders are allowed so long as they are permitted under the sponsoring agreement between the Government and the specific FFRDC.

Navy laboratories and warfare centers as well as other Department of Defense and civilian agency laboratories are also not eligible to receive awards under this BAA and should not directly submit either white papers or full proposals in response to this BAA. If any such organization is interested in one or more of the programs described herein, the organization should contact an appropriate ONR POC to discuss its area of interest. The various scientific divisions of ONR are identified at <http://www.onr.navy.mil/>. As with FFRDCs, these types of federal organizations may team with other responsible sources from academia and industry that are submitting proposals under this BAA.

Teams are encouraged to submit proposals in any and all areas. However, Offerors must be willing to cooperate and exchange software, data and other information in an integrated program with other contractors, as well as with system integrators, selected by ONR.

## **IV. APPLICATION AND SUBMISSION INFORMATION**

### **1. Application and Submission Process -**

#### **White Paper Submission**

The due date for receipt of White Papers is 2:00 p.m. (Eastern Time) on 4 June 2009. Each White Paper should state that it is submitted in response to this announcement. White Papers shall be submitted directly to CAPT Mark Stoffel, the Program Manager identified in Paragraph I.7 above. Each White Paper will be evaluated by the government to determine whether the technology advancement proposed appears to be of particular value to the Department of the Navy. The submitters of White Papers judged to be of “particular value” to the Navy will be so identified in the initial response provided by ONR and encouraged to submit Full Proposals. The submitter of any White Paper not judged by the ONR reviewers as being of “particular value” to the Navy may still submit a Full Proposal by the date and time specified in the BAA, but the initial Navy response provided is a useful indicator of likely future project funding under this solicitation.

#### **Full Proposal Submission**

The due date for receipt of Full Proposals is 2:00 p.m. (Eastern Time) on 13 August 2009. It is anticipated that final selections for awards will be on or about 02 September 2009. As soon as the final proposal evaluation process is completed, each Offeror will be notified via email or letter of its selection or non-selection for an award.

### **2. Content and Format of White Papers/Full Proposals –**

White Papers and Full Proposals submitted under the BAA are expected to 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 of this solicitation.

The proposal format and content requirements are identified below. As noted in Paragraph 5 below, grant proposals are to be formatted as required by Standard Form 424 (R&R), which is available via the internet at <http://www.grants.gov/>.

#### **a. WHITE PAPERS**

##### **White Paper Format**

- Paper Size – 8.5 x 11 inch paper
- Margins – 1 inch
- Spacing – single or double-spaced
- Font – Times New Roman, 12 point
- No more than six (6) pages, inclusive of cover; up to four (4) additional pages may be submitted for resumés, bio sketches, or curriculum vitae

- Copies – Electronic (email) submissions provided on or before the date and time outlined in the BAA are deemed acceptable. Email submissions in either Microsoft® Word or print-to-.PDF format should be sent to CAPT Mark Stoffel at [mark.stoffel@navy.mil](mailto:mark.stoffel@navy.mil), referencing “ONR BAA 09-022” in the subject line.

### **White Paper Content**

- **Cover Page:** The Cover Page shall be labeled “WHITE PAPER” and shall include the BAA number, the Research Area topic number, proposed title, technical points of contact, business points of contact, telephone number, facsimile number, and e-mail address.
- **Abstract:** Capture the unique and innovative aspects of the research, including the methodology or technical approach, in up to two hundred fifty words.
- **Technical Concept:** An expanded description of the technology innovation and technical risk areas, including a statement of hypothesis that clearly defines the research objective, and a research approach that clearly tests the hypothesis.

### **b. FULL PROPOSALS**

#### **Full Proposal Format – Volume 1 - Technical and Volume 2 - Cost Proposal**

- Paper Size – 8.5 x 11 inch paper
- Margins – 1 inch
- Spacing – single or double-spaced
- Font – Times New Roman, 12 point
- Limit the number of pages to twenty (20) for Volume I, exclusive of the initial two pages of the SF424 (R&R) form. There are no page limitations to Volume 2.
- Copies – The full proposal should be submitted on Standard Form 424 (R&R) either electronically through at <http://www.grants.gov/> as delineated below, or, if necessary, through the alternative electronic method explained in SPECIAL NOTICE 3 above and in section IV.5. below.

### **Full Proposal Content**

Volume 1: Technical Proposal

- **Cover Page:** This should include the words “Technical Proposal” and the following:
  - 1) BAA number;
  - 2) Title of Proposal;
  - 3) Identity of prime Offeror and complete list of subcontractors, if

applicable;

4) Technical contact (name, address, phone/fax, electronic mail address)

5) Administrative/business contact (name, address, phone/fax, electronic mail address) and;

6) Duration of effort (differentiate basic effort and any proposed options)

- **Table of Contents:** An alphabetical/numerical listing of the sections within the proposal, including corresponding page numbers.

- **Statement of Work:** A Statement of Work (SOW) clearly detailing the scope and objectives of the effort and the technical approach. It is anticipated that the proposed SOW will be incorporated by reference into the resultant award instrument. To this end, the proposal must include a severable, self-standing SOW, without any proprietary restrictions. Include a detailed listing of the technical tasks/subtasks organized by year.

- **Future Naval Relevance:** A description of potential Naval relevance and contributions of the effort to the agency's specific mission.

- **Project Schedule and Milestones:** A summary of the schedule of events and milestones:

- **Deliverables:** A detailed description of the results and data deliverables to be delivered inclusive of the timeframe in which they will be delivered.

- **Management Approach:** A discussion of the overall approach to the management of this effort, including brief discussions of the total organization; use of personnel; project/function/subcontractor/subrecipient relationships; government research interfaces; and planning, scheduling and control practice. Identify which personnel and subcontractors/subrecipients (if any) will be involved. Include a description of the facilities that are required for the proposed effort with a description of any Government Furnished Equipment/Hardware/Software/Information required, by version and/or configuration.

- **Duplication of Proposals:** Offerors are required to provide information on all current and pending support for ongoing projects and proposals, including subsequent funding in the case of continuing contracts, grants, other assistance agreements. Offerors shall provide the following information of any duplicative proposal submissions from whatever sources (e.g., ONR, Federal, State, local or foreign government agencies, public or private foundations, industrial or other commercial organizations). The information must be provided for all proposals already submitted or submitted concurrently to other possible sponsors, including ONR. Concurrent submission of a proposal to other organizations will not prejudice its review by ONR.

- 1) Title of Proposal;

- 2) Identity of prime Offeror and complete list of subcontractors, if applicable;

- 3) Technical contact (name, address, phone/fax, electronic mail address)

- 4) Administrative/business contact (name, address, phone/fax, electronic mail address) and;
- 5) Duration of effort (differentiate basic effort);
- 6) The proposed project and all other projects or activities requiring a portion of time of the PI and other senior personnel must be included, even if they receive no salary support from the project(s);
- 7) The total award amount for the entire award period covered (including indirect costs) must be shown as well as the number of person-months per year to be devoted to the project, regardless of source of support.

## **VOLUME 2: Cost Proposal**

The offeror must use the Grants.Gov forms from the application package template associated with the BAA on the Grants.Gov web site located at <http://www.grants.gov/>. Elements of the budget should include:

- Direct Labor – Individual labor categories or persons, with associated labor hours and unburdened direct labor rates or percentage of effort or total man-years. Provide escalation rates for out years. Justify in Field K of SF-424 Research & Related Form (Budget).
- Indirect Costs – Fringe Benefits, Overhead, F&A, G&A etc. and their applicable allocation bases. If composite rates are used, provide the calculations used in deriving the composite rates. Justify in Field K of SF-424 Research & Related Form (Budget).
- Travel – The proposed travel cost should include the following for each trip: the purpose of the trip, origin and destination if known, approximate duration, the number of travelers, and the estimated cost per trip must be justified based on the organizations historical average cost per trip or other reasonable basis for estimation. Such estimates and the resultant costs claimed must conform to the applicable Federal cost principals. Justify in Field K of SF-424 Research & Related Form (Budget).
- Subawards - Cost proposal as detailed as the recipient's cost proposal will be required to be submitted by the subrecipient. The subawardee's or subrecipient's cost proposal can be provided in a sealed envelope with the recipient's cost proposal or may be sent directly to the Government. Subawardee proposals must be received and reviewed prior to award.
- Consultants – Provide a breakdown of the consultant's hours, the hourly rate proposed, any other proposed consultant costs and a copy of the consultant's proposed statement of work if it is not already separately identified in the prime recipient's proposal. 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. Justify in Field K of SF-424 Research & Related Form (Budget).
- Materials & Supplies – Provide an itemized list of all proposed materials and supplies including quantities, unit prices, proposed vendors (if

known), and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists). Justify in Field K of SF-424 Research & Related Form (Budget).

- Recipient Acquired Equipment or Facilities – Equipment and/or facilities are normally furnished by the Recipient. If acquisition of equipment and/or facilities is proposed, a justification for the purchase of the items must be provided. Provide an itemized list of all equipment and/or facilities costs and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists). For computer/laptop purchase include a statement indicating how the computer/laptop will be integrated into the program or used as an integral part of the research effort. Justify in Field K of SF-424 Research & Related Form (Budget).
- Other Direct Costs – Provide an itemized list of all other proposed other direct costs such as Graduate Assistant tuition, laboratory fees, report and publication costs, and the basis for the estimates (e.g., quotes, prior purchases, catalog price lists). Justify in Field K of SF-424 Research & Related Form (Budget).

NOTE: For the past two years Congress has placed limits on the percentage of facilities and administrative (F&A) costs that can be paid by the Government using basic research (6.1) funds. Currently F&A costs paid under contracts and grants for the performance of basic research may not exceed 35 percent. It is unknown at present whether a similar indirect cost restriction will apply to 6.1 funds in FY 2010 or thereafter.

NOTE: If the grant proposal is for a conference, workshop, or symposium, the proposal should include the following statement: “The funds provided by ONR will not be used for food or beverages.”

- Options – The Base Period of Performance and Option Periods must be priced at the submission of the proposal. Any proposal containing unpriced options will not be included in the award.
- Fee/Profit - Fee/profit is unallowable.

### 3. Significant Dates and Times –

#### Anticipated Schedule of Events

<u>EVENT</u>	<u>DATE</u>	<u>TIME (EASTERN TIME)</u>
FY10 White Papers Due Date	4 June 2009	2:00 pm
Notification of Initial Navy Evaluations of FY10 White Papers	June 30, 2009*	
Full FY10 Proposal Due Date	Aug 13, 2009	2:00 pm
Notification of Selection for FY10 Award	Sep 2, 2009*	
Issued FY10 Grant Awards	Sep 30, 2009*	

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

NOTE: Due to changes in security procedures since September 11, 2001, the time required for hard-copy written materials to be received at the Office of Naval Research has increased. Materials submitted through the U.S. Postal Service, for example, may take seven days or more to be received, even when sent by Express Mail. Thus, any hard-copy proposal should be submitted long enough before the deadline established in the solicitation so that it will not be received late and thus be ineligible for award consideration.

#### **4. Submission of Late Proposals –**

Any proposal, modification, or revision that is received at the designated Government office after the exact time specified for receipt of proposals is “late” and will not be considered unless it is received before award is made, the contracting officer determines that accepting the late proposal would not unduly delay the acquisition, and:

- If it was transmitted through an electronic commerce method authorized by the announcement, it was received at the initial point of entry to the Government infrastructure not later than 5:00 P.M. one working day prior to the date specified for receipt of proposals; or
- There is acceptable evidence to establish that it was received at the Government installation designated for receipt of proposals and was under the Government’s control prior to the time set for receipt of proposals; or
- It was the only proposal received.

However, a late modification of an otherwise timely and successful proposal that makes its terms more favorable to the Government will be considered at any time it is received and may be accepted.

Acceptable evidence to establish the time or receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the Government office designated for receipt of proposals by the exact time specified in the announcement, and urgent Government requirements preclude amendment of the announcement closing date, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the announcement on the first work day on which normal Government processes resume.

The contracting officer must promptly notify any offeror if its proposal, modifications, or revision was received late and must inform the offeror whether its proposal will be considered.

## **5. Submission of Grant Proposals through Grants.gov**

Detailed instructions entitled “Grants.Gov Electronic Application and Submission Information” on how to submit a Grant proposal through Grants.gov are under the Acquisition Department — Submitting a Proposal section of the website at [http://www.onr.navy.mil/02/docs/FY09\\_GrantsGovApp\\_and\\_Submission\\_Information.pdf](http://www.onr.navy.mil/02/docs/FY09_GrantsGovApp_and_Submission_Information.pdf).

Grant proposals shall be submitted through [Grants.gov](http://www.grants.gov) using the mandatory Grants.gov form(s) from the application package template associated with the BAA on the Grants.gov website. The use of the optional forms from the application package template associated with the BAA is highly encouraged. To be considered for award, applicants must include the ONR Department Code in Block 4 entitled ‘Federal Identifier’ of the Standard Form (SF) 424 R&R. Enter “ONR 30 – Stoffel” in Block 4 (Federal Identifier) of the SF 424 R&R to ensure that it is properly routed to the correct Program Office. By completing Blocks 18 and 19 the Applicant will also be providing the certification on lobbying required by 32 CFR Part 28. Refer to Section VI, ‘Award Administration Information’ entitled “Certifications” for further information.

White Papers (pre-proposals) should not be submitted through the Grants.gov Apply process but rather should be sent directly to ONR.

For electronic submission of grant full proposals, there are several one-time actions that must be completed in order to submit an application through Grants.gov. These include obtaining a Dun and Bradstreet Data Universal Numbering System (DUNS) number, registering with the Central Contract Registry (CCR), registering with the credential provider, and registering with Grants.gov. See [www.grants.gov](http://www.grants.gov), specifically [www.grants.gov/GetStarted](http://www.grants.gov/GetStarted).

Use the Grants.gov Organization Registration Checklist at [http://www.grants.gov/applicants/register\\_your\\_organization.jsp](http://www.grants.gov/applicants/register_your_organization.jsp) which will provide guidance through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called ‘MPIN’ are important steps in the CCR registration process. Applicants who are not registered with CCR and Grants.gov should allow at least 21 days to complete these requirements. The process should be started as soon as possible. All attachments to grant applications submitted through Grants.Gov must be in Adobe Portable Document Format. Proposals with attachments submitted in word processing, spreadsheet, or any format other than Adobe Portable Document Format will not be considered for award. Any 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](mailto:support@grants.gov).

### **Special Notice Relative to Grant Applications to be submitted through Grants.Gov:**

Process to Obtain a Waiver from the Use of Grants.Gov for Submission of Full Grant Proposals: If a prospective grantee is unable to comply with the requirement to use Grants.Gov “APPLY” for submission of a grant application under this BAA or finds it

would be an excessive burden to comply with this requirement, a waiver request may be submitted not less than 30 calendar days prior to the closing date for receipt of Full Proposals. Such request should be submitted by the Electronic Business Point of Contact listed in the CCR for the organization and should contain the Organization/Individual's name, address, telephone number, and email address. The request should state the reason for the request in sufficient detail so a decision can be made. The Waiver Request should be submitted to the ONR Acquisition Department point of contact or Grants Officer listed in the BAA. Such request can be sent by registered mail or email. The "postmark" stamp on the envelope or the time annotated on the email will be used to determine timeliness of the request. A decision and response will be issued within 14 calendar days of receipt of the request by ONR. Foreign Grantees who are not registered in CCR may request a waiver on that basis since CCR registration is integral to the Grants.Gov application process.

**Special Notice on Alternate Submission:**

The following alternative to submitting proposals to the grants.gov website is provided for use under this BAA. Proposals using the alternative submission process will be accepted only if grants.gov is not accepting the proposal and the offeror has called the grants.gov helpline and received a case ticket number. If grant.gov has not within two days by return email validated your proposal submission, call Grants.gov (1-800-518-4726) to obtain a case ticket number. An email from Grants.gov indicating rejection of the grant proposal will not be accepted in place of a Grants.gov case ticket number.

a. Upload the proposal using the form on the following website:

<http://onroutside.onr.navy.mil/aspprocessor/BAAPE/>

b. Use this form to upload your grant proposal directly to the Office of Naval Research. All fields in the form are required to be completed, including the assigned Grants.gov case ticket number. Your completed package should also include a signed, scanned proposal cover sheet with the signature of your authorized organizational representative as part of the 'Attachments Form'. Submit one file per proposal in PDF format. **DO NOT submit any parts of the proposal separately. Technical proposals, endorsements, etc. should be on the Grants.Gov ATTACHMENTS form.**

c. Use the naming convention below for all uploaded proposals.

\*Convention: (ONRBAA09-XXX\_Topic\_LeadPI\_University.pdf)

\*Example: ONRBAA09-012\_NOPP\_MSMITH\_UNIVRESEARCH.PDF

d. Once a document has been submitted, a "Thank You" page will appear and an email will be sent to the address provided. If you do not receive an email confirmation, your file has not been properly received.

## **V. EVALUATION INFORMATION**

### **1. Evaluation Criteria**

Award decisions will be based on a competitive selection of proposals resulting from a scientific and cost review. Evaluations will be conducted using the following evaluation criteria:

- 1) Overall scientific and technical merits of the proposal;
- 2) Potential Naval relevance and contributions of the effort to the agency's specific mission;
- 3) The offeror's capabilities, related experience, facilities, techniques or unique combinations of these which are integral factors for achieving the proposal objectives;
- 4) The qualifications, capabilities and experience of the proposed Principal Investigator (PI), team leader and key personnel who are critical in achieving The proposal objects; and
- 5) The realism of the proposed costs and availability of funds.

The degree of importance of cost will increase with the degree of equality of the proposals in relation to the other factors on which selection is to be based, or when the cost is so significantly high as to diminish the value of the proposal's technical superiority to the Government.

For proposed awards to be made as contracts to other than small business, the socio-economic merits of each proposal will be evaluated based on the extent of the Offeror's commitment in providing meaningful subcontracting opportunities for small businesses, small disadvantaged businesses, woman-owned small businesses, HUBZone small businesses, veteran-owned small businesses, service disabled veteran-owned small businesses, historically black colleges and universities, and minority institutions.

The Government will evaluate options for award purposes by adding the total cost for all options to the total cost for the basic requirement. Evaluation of options will not obligate the Government to exercise the options during grant performance.

### **2. Evaluation Panel**

Technical and cost proposals submitted under this BAA will be protected from unauthorized disclosure. The cognizant Program Officer and other Government scientific experts will perform the evaluation of technical proposals. Cost proposals will be evaluated by Government business professionals. Restrictive notices notwithstanding, one or more support contractors may be utilized as subject-matter-expert technical consultants. Similarly, support contractors may be utilized to evaluate cost proposals. However, proposal selection and award decisions are solely the responsibility of Government personnel. Each support contractor's employee 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 submissions.

## **VI. AWARD ADMINISTRATION INFORMATION**

### **1. Administrative Requirements –**

- The North American Industry Classification System (NAICS) code – The North American Industry Classification System (NAICS) code for this announcement is “541712” with a small business size standard of “500 employees”.
- Central Contractor Registry (CCR) - Successful Offerors not already registered in the CCR will be required to register in CCR prior to award of any grant. Information on CCR registration is available at <http://www.onr.navy.mil/02/ccr.htm>.
- Grant Certifications – Grant 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](http://Grants.gov) (complete Blocks 18 and 19); 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.

Grants not through Grants.gov:

Proposers seeking grants or cooperative agreements who have received Grants.gov waiver approval for awards greater than \$100,000 shall complete and submit electronic representations and certifications at the Contracts and Grants Section of the ONR Home Page at [http://www.onr.navy.mil/02/rep\\_cert.asp](http://www.onr.navy.mil/02/rep_cert.asp).

**2. Reporting -**

The following are samples of data deliverables that are typically required under a research effort:

- \*Technical and Financial Progress Reports
- \*Presentation Materials
- \*Final Report

Additional data deliverables may be proposed and finalized during negotiations.

**VII. OTHER INFORMATION**

**1. Government Property/Government Furnished Equipment (GFE) and Facilities**

Each proposer must provide a very specific description of any equipment/hardware that it needs to acquire to perform the work. This description should indicate whether or not each particular piece of equipment/hardware will be included as part of a deliverable item under the resulting award. Also, this description should identify the component, nomenclature, and configuration of the equipment/hardware that it proposes to purchase for this effort. The purchase on a direct reimbursement basis of special test equipment or other equipment that is not included in a deliverable item will be evaluated for allowability on a case-by-case basis. Maximum use of Government integration, test, and experiment facilities is encouraged in each of the Offeror's proposals.

Government research facilities and operational military units are available and should be considered as potential government-furnished equipment/facilities. These facilities and resources are of high value and some are in constant demand by multiple programs. It is unlikely that all facilities would be used for any one specific program. The use of these facilities and resources will be negotiated as the program unfolds. Offerors should explain as part of their proposals which of these facilities are critical for the project's success.

## **2. Use of Animals and Human Subjects in Research**

If animals are to be utilized in the research effort proposed, the Offeror must complete a DOD Animal Use Protocol with supporting documentation (copies of AALAC accreditation and/or NIH assurance, IACUC approval, research literature database searches, and the two most recent USDA inspection reports) prior to award. For assistance with submission of animal research related documentation, contact the ONR Animal/Human Use Administrator at (703) 696-4046.

Similarly, for any proposal for research involving human subjects the Offeror must submit prior to award: documentation of approval from an Institutional Review Board (IRB); IRB-approved research protocol; IRB-approved informed consent form; proof of completed human research training (e.g., training certificate or institutional verification of training); an application for a DoD Navy Addendum to the Offeror's DHHS-issued Federalwide Assurance (FWA) or the Offeror's DoD Navy Addendum number. In the event that an exemption criterion under 32 CFR.219.101(b) is claimed, provide documentation of the determination by the Institutional Review Board (IRB) Chair, IRB Vice Chair, designated IRB administrator or official of the human research protection program. Information about assurance applications and forms can be obtained by contacting ONR\_343\_contact@navy.mil . If the research is determined by the IRB to be greater than minimal risk, the Offeror also must provide the name and contact information for the independent medical monitor. [Note: for research involving human subjects that is greater than minimal risk, administrative procedures to protect human subjects from medical expenses (not otherwise provided or reimbursed) that are the direct result of participation in a research project must be addressed. Additional supporting documentation may be requested. For additional information on this topic, email ONR\_343\_contact@navy.mil.] For assistance with submission of human subject research related documentation, contact the ONR Animal/Human Use Administrator at (703) 696-4046.

## **3. Protection of Proprietary and Sensitive Information**

The parties acknowledge that, during performance of the grant resulting from this BAA, the recipient may require access to certain proprietary and confidential information (whether in its original or derived form) submitted to or produced by the Government. Such information includes, but is not limited to, business practices, proposals, designs, mission or operation concepts, sketches, management policies, cost and operating expense, technical data and trade secrets, proposed Navy budgetary information, and acquisition planning or acquisition actions, obtained either directly or indirectly as a result of the effort performed on behalf of ONR. The recipient shall take appropriate steps not only to safeguard such information, but also to prevent disclosure of such information to any party other than the Government. The recipient agrees to indoctrinate company personnel who will have access to or custody of the information concerning the nature of the confidential terms under which the Government received such information and shall stress that the information shall not be disclosed to any other party or to recipient personnel who do not need to know the contents thereof for the performance of

the contract/agreement. Recipient personnel shall also be informed that they shall not engage in any other action, venture, or employment wherein this information will be used for any purpose by any other party.

#### **4. Project Meetings and Reviews**

Individual program reviews between the ONR 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, offerors should assume that 40% of these meetings will be at or near ONR, Arlington VA 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.

#### **5. Submission of Questions**

Any questions regarding this solicitation must be provided to the Programmatic Point of Contact, Technical Point of Contact, and/or Business Point of Contact listed in this solicitation. All questions shall be submitted in writing by electronic mail with “ONR BAA 09-022” appearing in the subject line.

Questions regarding white papers must be submitted by 2:00 P.M. Eastern Time on 1 June 2009. Questions after this date and time may not be answered, and the due date for submission of the white papers will not be extended.

Questions regarding full proposals must be submitted by 2:00 P.M. Eastern Time on 06 August 2009. Questions after this date and time may not be answered, and the due date for submission of the proposals will not be extended.

Answers to questions submitted in response to this BAA will be addressed in the form of an Amendment and will be posted to one or more of the following webpages:

- Federal Business Opportunities (FEDBIZOPPS) Webpage – <https://www.fbo.gov/>
- Grants.gov Webpage – <http://www.grants.gov/>
- ONR Broad Agency Announcement (BAA) Webpage - <http://www.onr.navy.mil/02/baa/>