



FUNDING OPPORTUNITY ANNOUNCEMENT (FOA)

NATIONAL SECURITY SCIENCE AND ENGINEERING FACULTY FELLOWSHIP

INTRODUCTION:

This publication constitutes a Funding Opportunity Announcement (FOA) as contemplated in the Department of Defense Grants and Agreements regulations (DoDGARS) 22.315(a). A formal Request for Proposals (RFP), solicitation, and/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 select for award all, some or none of the proposals in response to this announcement. The ONR and other participating DoD agencies provide no funding for direct reimbursement of proposal development costs. Technical and cost proposals (or any other material) submitted in response to this FOA will not be returned. It is the policy of ONR to treat all proposals as sensitive competitive information and to disclose their contents only for the purposes of evaluation.

Awards will take the form of grants. These awards will be governed by the guidance in 2 Code of Federal Regulations (CFR) part 200, "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards," as modified and supplemented by the Department of Defense's (DoD) interim implementation found at 2 CFR part 1103, "Interim Grants and Cooperative Agreements Implementation of Guidance in 2 CFR part 200" (79 FR 76047, December 19, 2014), all of which are incorporated herein by reference.

A requirement that the project summary/abstract required in the submission of the proposal must be publically releasable is noted in Section IV., Paragraph B. 5. iv., page 17.

Offerors shall include responses to Representation Regarding an Unpaid Delinquent Tax Liability or a Felony Conviction Under any Federal Law-DoD Appropriations, Prohibition on Contracting with Entities that Require Certain Internal Confidentiality Agreements, and Certification Regarding Restrictions on Lobbying in proposal submission. See Section VIII, Paragraph E., page 27, Award Administration Information.

Potential offerors may obtain information by checking the following websites: Information regarding this FOA and amendments:

www.grants.gov or <http://www.onr.navy.mil/en/Contracts-Grants/Funding-Opportunities/Broad-Agency-Announcements.aspx>

Information regarding submission of white papers and supporting documentation will also be posted at: <https://acqutrak.noblis.org/applyNSSEFF>

Information regarding submission of full proposal packages can be found at
<http://www.grants.gov/web/grants/applicants/apply-for-grants.html>

Information regarding Research Directorate (RD), Office of Assistant Secretary of Defense for Research & Engineering:
<http://www.acq.osd.mil/rd/>

Information regarding the Program overview and information:
http://www.acq.osd.mil/rd/basic_research/program_info/nsseff.html

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I. GENERAL INFORMATION

A. Agency Name/Address

Office of Naval Research
One Liberty Center
875 North Randolph Street
Arlington, VA 22203-1995

B. Research Opportunity Title

The National Security Science and Engineering Faculty Fellowship (NSSEFF) program

C. Program Name

The National Security Science and Engineering Faculty Fellowship (NSSEFF) program

The National Security Science and Engineering Faculty Fellowship (NSSEFF) program's name is hereby changed to the Vannevar Bush Faculty Fellowship program.

Dr. Vannevar Bush (1890-1974) was a forward-thinking policymaker who served as the director of the U.S. Defense Department's Office of Scientific Research and Development during World War II, coordinating the work of thousands of scientists in the service of ending the war. In his 1945 report to the President of the United States, *Science, The Endless Frontier*, Bush called for an expansion of government support for science, and he pressed for the creation of the National Science Foundation. Dr. Bush was concerned about how the scientific research supported by DoD during WWII could be sustained with a focus on peacetime goals. He believed that basic research was "the pacemaker of technological progress". "New products and new processes do not appear full-grown," Bush wrote. "They are founded on new principles and new conceptions, which in turn are painstakingly developed by research in the purest realms of science."

<https://www.nsf.gov/od/lpa/nsf50/vbush1945.htm>

Prior to his DoD work, Dr. Bush was a professor and Dean of Engineering at the Massachusetts Institute of Technology, and founded a large defense and electronics company. Because Dr. Bush's life work embodies the spirit of the NSSEFF program, the program name is being changed to the Vannevar Bush Faculty Fellowship program in his honor.

D. Research Opportunity Number

N00014-16-R-FO12

E. Response Date

Acqutrak Registration(See Section IV B): No later than 11:59 pm Eastern Local Time on August 15, 2016

White Papers and Supporting Documentation: No later than 11:59 pm Eastern Local Time on August 17, 2016

Full Proposal and Confidential Letters of Recommendation: No later than 11:59 pm Eastern Local Time on January 9, 2017

F. Research Opportunity Description

The Vannevar Bush (formerly the National Security Science and Engineering Faculty Fellowship (NSSEFF)) Faculty Fellowship program is sponsored by the Basic Research Office, Office of Assistant Secretary of

Defense for Research and Engineering (ASD (R&E)). NSSEFF supports innovative basic research within academia, as well as opportunities intended to develop the next generation of scientists and engineers for the defense workforce.

The Office of Naval Research (ONR) manages the NSSEFF program for ASD (R&E). To accomplish this task, ONR is soliciting proposals for the NSSEFF program through this FOA. This FOA seeks distinguished researchers for the purpose of conducting innovative basic research in areas of interest to the Department of Defense (DoD) and fostering long-term relationships between the NSSEFF Fellows and the DoD.

As defined by the DoD, basic research is “systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind. It includes all scientific study and experimentation directed toward increasing fundamental knowledge and understanding in those fields of the physical, engineering, environmental, and life sciences related to long-term national security needs. It is farsighted high payoff research that provides the basis for technological progress.” (http://comptroller.defense.gov/Portals/45/documents/fmr/Volume_02b.pdf) The DoD’s basic research program invests broadly in many scientific fields to ensure that it has early cognizance of new scientific knowledge.

NSSEFF is oriented towards bold and ambitious “blue sky” research that may lead to extraordinary outcomes such as revolutionizing entire disciplines, creating entirely new fields, or disrupting accepted theories and perspectives.

Objectives of the program are to:

- Support unclassified basic scientific and engineering research that could be the foundation for future revolutionary new capabilities for DoD
- Educate and train student and post-doctoral researchers for the defense workforce
- Foster long-term relationships between university researchers and the DoD
- Familiarize university researchers and their students with DoD’s current and projected future challenges
- Increase the number of talented technical experts that DoD can call upon.

This FOA is for single investigator grant proposals for basic research in one or more of the following technical subject categories of interest to the DoD:

1. Engineering Biology

Engineering and synthetic biology are emerging disciplines that are positioned to become powerful technologies for the potential production of DoD-relevant materials, the development of new sensing modalities, maintaining warfighter resilience and performance, as well as the production of new biologics (see: <http://defenseinnovationmarketplace.mil/resources/OTI-SyntheticBiologyTechnicalAssessment.pdf>).

Revolutionary basic research engineering biology could lead to new capabilities for the DoD in:

Specialty Materials- The commercial sector has examples of microorganisms engineered to produce commodity chemicals such as fuels and pharmaceuticals. However, examples exist in biology where organisms produce organic and inorganic materials that would be very difficult to produce outside their biological system and would have a more unique potential DoD application.

Sensing- DoD has unique sensing needs including the need for detecting unusual signatures, clandestine sensing, and sensing environmental biological molecules and chemicals. Biological systems with their molecular interactions and precise control can have an impact in this capability.

New genomic engineering technologies (such as CRISPR/Cas9) and the relatively inexpensive methods for producing synthetic DNA have made it easier to manipulate bacterial and eukaryotic systems. However, technical hurdles remain that prevent engineering biology from being a scalable top-down engineering discipline. Ground-

breaking basic research that would increase the number of biological systems that could be manipulated including bacteria, single and multi-cellular eukaryotic systems, as well as microbial consortia are of interest. The engineering of these "undomesticated" organisms and developments that make parts and systems more scalable, modular (independent of the host background) and orthogonal would be of interest to NSSEFF.

2. Quantum Information Science

Quantum Information Science (QIS) focuses on the creation, control, and manipulation of non-classical states of light and matter with potential for exceeding classical limits in communications, sensing, metrology, imaging, computing and simulation. The development of QIS was precipitated by the demonstration of a "quantum advantage" in computing due to development of Shor's factoring algorithm and Grover's search algorithm in the mid-1990s, which offered quantum speedups (in the former case, what seems to be an exponential speedup). The potential impacts of QIS on DoD capabilities may include ensuring information security, enabling novel materials design, attaining precise navigation and positioning even without GPS, improved sensing, and accomplishing significant improvements in high resolution imaging.

Developments of new algorithms that provide a "quantum advantage" are needed for quantum computing to be more than a niche application. Beyond computing, and even beyond QIS per se, of great interest is the development of small- or medium-sized quantum systems to enable the study of exotic physics that could lead to novel future technologies. This program seeks ambitious proposals that are expected to either advance the knowledge of QIS, or to disrupt the current research directions of QIS. Exploration of the limitations of QIS is highly encouraged.

3. Cognitive Neuroscience

Maintaining human cognitive effectiveness and emotional resilience are important capabilities for DoD since the physical, emotional stress and cognitive demands of warfighters is constantly increasing with the growing volume of data presented by today's weapon systems (www.acq.osd.mil/dsb/reports/DSB2030.pdf). <https://fas.org/irp/agency/dod/jason/human.pdf>. Loss of neural function due to warfighter brain injury is also of concern. The understanding neural activity for motor and cognitive functions in humans is of interest to support development of neural interfaces for warfighters that lose capability due to brain injury. DoD has several research and development thrusts in the development of brain-machine interfaces (BMIs) to allow the control of prosthetics to restore warfighter capability after injury.

Recent advancements in neuroscience have allowed understanding of how neuronal activity is organized at the molecular, neuron, neural circuit, and brain structural levels to produce human behavior. In particular, computational neuroscience work is making strides to use empirical data to model activities at each of these brain structural levels. The NSSEFF program is interested in research that seeks to identify the principles of neural circuits and systems and extract neural architectures and algorithms that can be emulated for sensing, pattern recognition and control and as neuromorphic electronic designs. Research on large-scale models of cortical systems and neural-based cognitive architectures capable of addressing cognitive skills such as attention, memory, spatial cognition, complex motor skills and language processing are also encouraged.

The NSSEFF Program is interested in forward-thinking basic research in neuroscience that could determine basic neural mechanisms of sleep, memory, neural plasticity, and motor activity that could enable new neural-based technology or allow eventual interventions that can improve warfighter performance during stressful conditions, improvements in performance during sleep-deprived conditions, and improve outcomes for warfighters with Traumatic Brain Injury (TBI). Investigations into novel factors that influence the maintenance of warfighter cognitive and emotional resilience, for example, the microbiome/enteric nervous system interaction, are also of interest.

4. Novel Engineered Materials

Engineered materials exhibit behaviors that are not observed in naturally occurring materials, but rather originate from careful designs of the structure. One example is meta-materials with negative index of refraction that can direct and focus light in ways that natural crystals cannot. Other engineered materials include superlattices, quantum dots, and ordered arrays of nanoholes which can form photonics waveguides. Recent demonstrations of structural meta-materials promise unique combinations of physical properties.

Understanding and controlling evolution of material behaviors is an area of interest. Conventional modeling and experimental techniques do not take far-from-equilibrium phenomena into account. Understanding and controlling irreversible material phenomena under extreme environments, e.g. high temperatures, high strain rates, radioactivity, etc., may lead to significant advances in materials design capabilities and in manufacturing process development.

This program seeks curiosity-driven research with the focus on discovery of new materials that enable transformative functionalities and performance under extreme conditions.

5. Applied Mathematics (theory and experiments) and Statistics

Mathematics has changed significantly over the last two decades. The emerging problems such as massive data sets, increasing complexity and connectedness, uncertainty and risk drive new developments in applied mathematics, such as compressive sensing, network analysis and image processing. As an example, Compressed Sensing epitomizes the new applications of pure mathematics and the interdisciplinary interactions between different areas of mathematics. Compressed Sensing has inspired the use of sparsity to acquire minimal information via sensing or imaging for signal analysis and reconstruction. The DoD workshop on Future Directions in Mathematics has identified the importance of Compressed Sensing as well as its shortcomings in bridging the gaps between theory and practice. New scientific concepts are needed to fill these gaps and to overcome existing technical hurdles so that mathematical ideas can seamlessly be integrated with novel sensor designs to realize the full potential of Compressive Sensing.

6. Manufacturing Science

DoD is interested in innovative research in the broad area of manufacturing science, which is defined as increasing knowledge, understanding, and manipulative capability associated with materials and materials systems with a focus on the practical control of useful physical, chemical, or mechanical properties. Research may include efforts at all length scales that deal with materials synthesis, processing, fabrication, or design of materials systems; modeling and simulation of the manipulation of structures and properties; or tools and instrumentation for characterization of manipulation and its effects. The product of the research should lead to enhanced understanding, knowledge, model materials/structures, or other outcomes that can enhance current fabrication or manufacturing processes or establish a foundation for new processes or fabricable products.

Research in materials has entered a new realm in which new functionalities are obtained through controlled processing and assembly of traditional materials, such as metals, alloys, ceramics, polymers, and composites by designing and assembling materials systems with precision. For example, metamaterials, which represent novel architectures of dissimilar materials, enable unprecedented manipulation of light, sound, and heat in ways that are not possible with natural homogenous materials. In many critical cases these architectures can only be achieved through precise and repeatable placement of dissimilar materials via processes that require discovery or new knowledge and understanding.

The emergence of new material assemblies and structures promises unprecedented capabilities for DoD related applications but poses great challenges to existing manufacturing paradigms. Despite the advancements in the 3D printing/additive process and polymeric self-assembly, it remains costly and time-consuming to manufacture complicated hierarchical and topological structures with dissimilar materials such as metals and oxides or

inorganics and organics. Basic research in processing to produce precision-engineered assemblies of functional organic and inorganic materials is desired to advance the state-of-the-art in this area. Advances in the science base are needed to enable the development of automated prototyping and other manufacturing techniques that robustly manipulate the next generation of designed materials with desired surface, interfacial, and bulk properties. Basic research in processing and modeling for scalable manufacturing techniques is required to permit meter-scale assembly and bulk structure with micro-scale or even nano-scale surface resolution.

We also seek basic research proposals on disruptive and flexible processing and processes potentially applicable to the manufacture of organic and inorganic materials and structures and on the fundamental limitations of scalability, ultimate length scale, and efficiency of manufacturing techniques.

7. Other fields of research with high potential

The list of subjects provided above is by no means a comprehensive list of topics for which white papers and proposals may be accepted. Proposed research in areas of relevance to DoD will be considered (e.g., fluid mechanics, propulsion, etc.) as long as there is a transformative science problem to be investigated and whose solution may open new ways of thinking about the phenomena that are being studied.

All proposers should ensure that they propose to conduct basic research as previously defined in this section. Proposed research should focus on developing a deep understanding of fundamental phenomena. Device development or equipment construction or integration is not a suitable end goal in itself; if proposed, it must be integral to research that will advance scientific knowledge. Risk-taking is encouraged; however, all proposals must demonstrate solid judgment and rationale.

All awardees will receive a research grant and the title of NSSEFF Fellow. NSSEFF Fellows and their students are provided with opportunities that are designed to enhance their understanding of DoD's critical research needs and interact with DoD senior Science and Technology (S&T) program leaders. Fellows and their students are expected to attend NSSEFF activities scheduled throughout the year. These activities may include an orientation meeting, site visits to DoD labs, technical workshops, and an annual meeting to report the progress of NSSEFF-sponsored research. NSSEFF Fellows may also be encouraged to serve as members of DoD advisory boards, panels, or groups. For a list of current NSSEFF Fellows, refer to: http://www.acq.osd.mil/rd/basic_research/program_info/nsseff.html.

G. Point(s) of Contact (POC)

NSSEFF Program Point of Contact:

Dr. Ellen Livingston

NSSEFF Program Manager

Office of Naval Research Code 03R

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Questions concerning White Papers, Supporting Documentation, and this FOA should be submitted by July 27, 2016 to the business point of contact with a copy to the NSSEFF program point of contact.

Questions received after the deadlines may not be answered, and the due date for submission of application materials will not be extended.

Answers to questions submitted in response to this FOA will be addressed in the form of an amendment and will be posted to one or more of the following web pages:

Grants.gov Webpage – <http://www.grants.gov/>

ONR Funding Opportunity Announcement (FOA) Webpage – <http://www.onr.navy.mil/Contracts-Grants/Funding-Opportunities/Broad-Agency-Announcements.aspx>

Applicants should be alert for any amendments that may modify the announcement.

H. Instrument Type(s)

It is anticipated that all awards resulting from this announcement will take the form of grants.

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

Examples of model grants can be found on the ONR website at the following link:

<http://www.onr.navy.mil/en/contracts-Grants/submit-proposal/grants-proposal/model-grant.aspx>

I. Catalog of Federal Domestic Assistance (CFDA) Numbers

12.300

J. Catalog of Federal Domestic Assistance (CFDA) Titles

Department of Defense (DoD) Basic and Applied Scientific Research

K. Other Information

Work funded under an FOA may include basic research and applied research. With regard to any restrictions on

the conduct or outcome of work funded under this FOA, ONR will follow the guidance on and definition of fundamental research as provided in the Under Secretary of Defense (Acquisition, Technology and Logistics) memorandum of 24 May 2010.

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

Pursuant to DoD policy, research performed under grants that are a) funded by Budget Activity 2 (Applied Research) and NOT performed on-campus at a university does not meet the definition of fundamental research. In conformance with the USD (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. For certain research projects, it may be possible that although the research being performed by the Grantee is restricted research, a sub-awardee may be conducting fundamental research. In those cases, it is the **Grantee's responsibility** in the proposal to identify and describe the sub-awardee unclassified research and include a statement confirming that the work has been scoped, negotiated, and determined to be fundamental research according to the Grantee and research performer.

Normally, fundamental research is awarded under grants with universities. Potential Offerors should consult with the appropriate ONR Technical POCs to determine whether the proposed effort would constitute basic research.

Grants made under FOAs are for scientific study and experimentation directed towards advancing the state of the art and increasing knowledge or understanding.

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

II. AWARD INFORMATION

A. Amount and Period of Performance

It is anticipated that awards will be made in the form of grants to U.S. institutions of higher education (universities). It is anticipated that the maximum award will be \$3 million per five years, with the actual amount contingent on availability of funds, the specific topic, and the scope of the proposed work.

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

B. Peer Reviews

In the case of proposals funded as basic research, DoD may utilize peer reviewers from academia, industry, and Government agencies to assist in the periodic appraisal of performance under the awards, following the process outlined under ONR Instruction 3966.1A. Such periodic program reviews monitor technical performance of funded basic research efforts. Peer reviewers who are not U.S. Government employees must sign nondisclosure agreements before receiving full or partial copies of proposals and reports submitted by the basic research performers. Offerors may include travel costs for the Principal Investigator (PI) to attend the peer review.

III. ELIGIBILITY INFORMATION

Eligible Institutions

Accredited U.S. institutions of higher education (universities) with doctoral degree-granting programs are eligible to apply. DoD institutions are not eligible to apply.

All responsible sources from academia and industry may submit proposals under this FOA. Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals. However, no portion of this FOA will be set aside for HBCU and MI participation, due to the impracticality of reserving discrete or severable items of this research for exclusive competition among such entities

Non-profit and for-profit organizations may collaborate on proposed research and may receive NSSEFF funds via subaward or subcontract. However, the NSSEFF program is oriented towards funding research at universities. Universities must perform the majority of the proposed work and receive the majority of funds

Government agencies, DoD laboratories and universities, and Federally Funded Research and Development Centers (FFRDCs) may collaborate on proposed research but may not receive NSSEFF funds, directly or via subaward.

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

Eligible Individuals

Faculty with tenure and full-time research staff with the skills, knowledge, and resources necessary to conduct the proposed research as the principal investigator (PI) are invited to submit an application. Applicants should have a record of substantial scientific contributions.

The PI must be a U.S. citizen or permanent resident.

Other Eligibility Criteria

Number of Applications: The PI may submit only one (1) application in response to this FOA. There is no limit to the number of applications that an institution may submit.

Number of PIs: Only one (1) PI may be designated on the application. While collaborations are encouraged, co-PIs are not permitted.

Resubmissions: Applicants invited to submit full proposals who have submitted Recommendation Letters for the NSSEFF program in a prior year must obtain and submit new letters. Previously submitted letters will not be retrieved. Documents dated prior to the posting date of this FOA will not be accepted.

Cost Sharing

Cost sharing is not expected and will not be used as a factor during the merit review of any proposal hereunder. However, the Government may consider voluntary cost sharing if proposed.

Export Control Laws

Offerors should be aware of recent changes in export control laws. Offerors are responsible for ensuring compliance with all International Traffic in Arms Regulation (ITAR)(22 CFR §120 *et. seq.*) requirements, as applicable. In some cases, developmental items funded by the Department of Defense are now included on the United States Munition List (USML) and are therefore subject to ITAR jurisdiction. Offerors should address in

their proposals whether ITAR restrictions apply or do not apply, such as in the case when research products would have both civil and military application, to the work they are proposing to perform for ONR. The USML is available online at <http://www.ecfr.gov/cgi-bin/text-idx?node=pt22.1.121>. Additional information regarding the President's Export Control Reform Initiative can be found at <http://export.gov/ecr/index.asp>

IV. APPLICATION AND SUBMISSION INFORMATION

A. Application and Submission Process

The application process is completed in three stages:

- (1) Online Registration via AcquTrak (required)
- (2) White Paper and Supporting Documentation submission via AcquTrak (required)
- (3) Full Proposal submission (via grants.gov) (by invitation only) and Confidential Letters of Recommendation (required)

If an Offeror does not register and submit a White paper and Supporting Documentation before the due dates and times, the Offeror will not be eligible to participate in the remaining Full Proposal submission process and is not eligible for funding.

B. Content and Format of White Paper and Supporting Documentation

White Papers Supporting Documentation, and Full Proposals submitted under this FOA are expected to be unclassified; classified proposals are not permitted.

All proposal submissions will be protected from unauthorized disclosure in accordance with applicable law and DoD/DoN regulations. Offerors are expected to appropriately mark each page of their submission that contains proprietary information.

STATEMENT OF WORK (SOW)

A non-proprietary version of the SOW must be submitted without other restrictions (e.g. ITAR). The non-proprietary SOW must be a version that is releasable under the Freedom of Information Act without changes.

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.

1. AcquTrak Online Registration

The AcquTrak Online Registration portal opens on June 15, 2016 . All applicants must register on the AcquTrak website by **11:59 pm Eastern Local Time on August 15, 2016**. Note: Applicants who registered at the AcquTrak website in a prior competition must re-register for this competition. Usernames and passwords used to submit previous applications will not be retrieved.

Each applicant must provide the following information at the time of registration:

- PI's name, title, department, educational institution, phone number, and e-mail address
- Title of the PI's proposed research topic
- Technical subject category most appropriate for the proposed research from the list given in Section I. F. (Research Opportunity Description).

2. White Paper and Supporting Documentation Content

Individual PIs must submit a Cover Page, Abstract, Basic Research Statement, White Paper, and Curriculum Vitae (CV). All documents must be submitted in PDF format in compliance with the guidelines below. When submitting the documents, the PI must upload the Cover Page, Abstract, Basic Research Statement, White Paper and CV as one PDF file.

3. Marking of White Papers and Full Proposals

ONR will make every effort to protect any proprietary information submitted in whitepapers and full proposals. Any proprietary information included in application materials must be identified. If the application includes such information, mark the white paper or full proposal as follows:

- (1) Include a cover page with the following legend: "The following contains proprietary/privileged information that (name of applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation, or pre and post award administration."
- (2) Clearly mark each page containing the proprietary/privileged information with the legend: "Use or disclosure of data contained on this page is subject to the restriction on the cover page of this document."

However, offerors should be aware that under the Freedom of Information Act (FOIA) requirements, proprietary information contained in whitepapers and proposals (marked or unmarked) may still potentially be subject to release.

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

It is the intent of ONR to treat all white papers and full proposals as privileged information before the award and to disclose their contents only for the purpose of evaluation. Whitepapers may also be disclosed to reviewers for training purposes in future competitions.

4. White Paper and Supporting Documentation

- (1) Cover page: Include the PI's name and university. Include a protective legend for proprietary information, if applicable.
- (2) Abstract (not to exceed 300 words): Describe the research objective, technical approaches, and anticipated outcome of the specific research.
- (3) Basic Research Statement (one (1) page limit, single-sided): Describe how the proposed research meets the DoD definition of basic research provided in Section I entitled, "Research Opportunity Description" of this announcement. Describe the extraordinary outcomes that may be achieved as a result of the proposed project.
- (4) White paper (three (3) page limit, single-sided): Describe the basic scientific or technical research to be undertaken. Describe the technical approach. Summarize the state of the field and describe what is innovative about the proposed approach. Given the successful completion of the course of investigation, what results, new knowledge, or insights might it afford compared to alternate approaches other researchers in this field have taken. Include approximate yearly costs for the project. Reference citations are not required but may be included within the three-page limit.
- (5) PI's Curriculum Vitae (CV) (two (2) page limit, single-sided) -The CV should include relevant experience, publications, and funding received in the area of interest, and any previous involvement and experiences with the DoD. **List all previous DoD funding including project titles within the**

last eight years.

Documents must be submitted in the following format:

- Paper Size – 8.5 x 11 inch paper
- Margins - 1 inch
- Spacing – single spaced
- Font – Times New Roman, 12 point

Do not include proprietary information in the Cover Page, Abstract, or CV. Include appropriate markings on each page of the Basic Research Statement and White Paper that contains proprietary information or other restrictions.

When submitting the White Paper and Supporting Documentation, the PI must provide the title of the proposed research project, contact information (name, e-mail address, and phone number) for the Sponsored Programs Office at the university, and indicate whether he or she is a US citizen or permanent resident. In addition, the PI must select one (and only one) technical subject category most appropriate for the proposed research from the list given in Section I. F. (Research Opportunity Description). The technical category designation will assist NSSEFF staff in assigning applications to appropriate reviewers.

The White Papers and Supporting Documentation must be submitted to AcquTrak (<https://acqutrak.noblis.org/ApplyNSSEFF>) no later than **11:59 p.m. Eastern Local Time on August 17, 2016**. Persons submitting the White Papers and Supporting Documentation must register on the website by **11:59 pm Eastern Local Time on August 15, 2016**. The submission process could take several minutes depending on the network connection and the size of the file being submitted. The offeror is responsible for allowing enough time to complete the online form, upload the documents and press the submit button before the deadline. An e-mail confirmation will be sent to the applicant upon receipt of the submission.

Documents submitted after the deadline or found to be non-compliant will not be reviewed.

Evaluation of the white paper will be issued via email notification. Any Offeror whose white paper was not identified as being of “particular value” to the DoD is ineligible to submit a full proposal under this FOA.

5. Full Proposal Package and Letters of Recommendation

Full Proposal Packages will only be accepted from PIs invited to submit full proposals. Proposal packages must be submitted electronically to Grants.gov (<http://www.grants.gov>) no later than **11:59 p.m. Eastern Local Time on January 9, 2017**.

Confidential letters of recommendation must be submitted via e-mail to ONR at paula.barden.ctr@navy.mil no later than **11:59 p.m. Eastern Local Time on January 9, 2017**.

Full Proposal Package – Format

Proposal package format should be as follows:

- Paper Size – 8.5 x 11 inch paper
- Margins – 1 inch (excluding the Summary Chart)
- Spacing – single spaced (excluding the Summary Chart)
- Font – Times New Roman, 12 point
- PI’s name and institution in header or footer
- Appropriate markings on each page that contains proprietary or confidential information (see Section IV. B., Paragraph 3 entitled, “Marking of White Papers and Full Proposals”)

Full Proposal Package Content

The following information must be completed as follows in the SF 424 located in the application package to ensure the application is directed to the correct individual for review.

- i. **SF-424 Research & Related (R&R) Application for Federal Assistance Form.** The SF-424 (R&R) form must be used as the cover page for all proposals. Complete all required fields in accordance with the “pop-up” instructions on the form and the following instructions for specific fields. To see the instructions, roll the mouse over the field to be filled out and additional information about that field will be displayed. For example, on the SF-424 (R&R) the Phone Number field says “PHONE NUMBER (Contact Person): Enter the daytime phone number for the person to contact on matters relating to this application. This field is required.” Mandatory fields will have an asterisk marking the field and will appear yellow on most computers. In Grants.gov, some fields will self-populate based on the FOA selected. Please fill out the SF-424 first, as some fields on the SF-424 are used to auto populate fields in other forms. The completion of most fields is self-explanatory except for the following special instructions:

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

Field 4a - Federal Identifier. Enter N00014

Field 4b- Agency Routing Number. Enter 03R [Livingston, Ellen].

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

Field 9 - Name of Federal Agency. List the Office of Naval Research as the reviewing agency. This field is pre-populated in Grants.gov.

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

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

- ii. **Research & Related Senior/Key Person Profile Form**

Complete the R&R Senior/Key Person Profile form for those key persons who will be performing the research. Information about an individual is subject to the requirements of the Privacy Act of 1974 (Public Law 93 579). The information is requested under the authority of Title 10 USC, Sections 2358 and 8013. The principal purpose and routine use of the requested information are for evaluation of the qualifications of those persons who will perform the proposed research. Failure to provide such information will delay award. Attach curricula vitae (CVs) for the principal investigator and senior staff. The CV should list any previous involvement and experiences with the DoD.

Page limits for attachments:

- PI Curriculum Vitae (five (5) page limit)
- Key Personnel Curricula Vitae (two (2) page limit each)

- iii. **Project/Performance Site Locations Form**

Complete all information as requested.

iv. Research And Related Other Project Information Form

Fields 1 and 1a - Human Subject Use. Each proposal must address human subject involvement in the research by addressing Fields 1 and 1a of the R&R Other Project Information form. For any proposal for research involving human subjects, the Offeror must submit or indicate an intention to 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 Federal wide Assurance (FWA) or the Offeror's DoD-Navy Addendum. In the event that an exception 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 including the category of exemption and short rationale statement. This documentation must be submitted to the ONR Human Research Protection Official (HRPO), by way of the ONR Program Officer. Information about assurance applications and forms can be obtained by contacting sevgi.bullock@navy.mil. If 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.

Fields 2 and 2a - Animal Use. Each proposal must address animal use protocols by addressing Fields 2 and 2a of the R&R Other Project Information form. If animals are to be utilized in the research effort proposed, the Offeror must complete a DoD Animal Use Protocol with supporting documentation (copies of Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) accreditation and/or National Institute of Health assurance, Institutional Animal Care and Use Committee (ACUC) approval, research literature Database searches, and the two most recent USDA inspection reports) prior to award. For assistance with submission of animal research related documents, contact the ONR Animal Use Administrator at sevgi.bullock@navy.mil.

Fields 4a through 4d - Environmental Compliance. Federal agencies making grant or cooperative agreement awards and recipients of such awards must comply with various environmental requirements. The National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. Sections 4321-4370 (a), requires that agencies consider the environmental impact of "major Federal actions" prior to any final agency decision. With respect to those awards which constitute "major Federal actions," as defined in 40 CFR 1508.18, federal agencies may be required to comply with NEPA and prepare an environmental impact statement (EIS), even if the agency does no more than provide grant funds to the recipient. Questions regarding NEPA compliance should be referred to the applicable ONR Program Manager Dr. Ellen Livingston, at ellen.s.livingston@navy.mil. Most research efforts funded by ONR will, however, qualify for a categorical exclusion from the need to prepare an EIS. Navy instructions/regulations provide for a categorical exclusion for basic and applied scientific research usually confined to the laboratory, if the research complies with all other applicable safety, environmental and natural resource conservation laws. Each proposal shall address environmental impact by filling in Fields 4a through 4d of the R&R Other Project Information form. This information will be used by ONR to make a determination if the proposed research effort qualifies for categorical exclusion.

Field 7 – Project Abstract/Summary (not to exceed 300 words). Include a concise abstract that describes the research objective, technical approaches, anticipated outcome and impact of the specific research. Attach the Abstract to the R&R Other Project Information form in Field 7. (You will not be able to type in the box, therefore, save the file you want to attach as Project Summary or Abstract). Abstracts of all funded research projects will be posted on a public website. Do not include proprietary or confidential information. Use only characters available on a standard QWERTY keyboard. Spell out all Greek letters, other non-English letters and symbols. Graphics are not allowed and there is a 300 word limit.

Field 8 – Project Narrative. Describe clearly the research, including the objective and approach to be performed, keeping in mind the evaluation criteria listed in Section V entitled, "Evaluation Information paragraph A. entitled, "Evaluation Criteria. Also, briefly indicate whether the intended research will result

in environmental impacts outside the laboratory, and how the proposer will ensure compliance with environmental statutes and regulations. Attach the proposal narrative to R&R Other Project Information form in Field 8. The narrative should describe the research in sections as described below.

- **Project Narrative - Statement of Objectives.** Summarize the actual research to be completed, including goals and objectives, on one page titled Statement of Objectives. This statement of objectives may be incorporated into the award instead of the entire technical proposal. Active verbs should be used in this statement (for example, “conduct” research into a topic, “investigate” a problem, “determine” to test a hypothesis). It should not contain proprietary information.
- **Project Narrative - Research Effort (15-page limit for this section, excluding list of references).** Describe the basic scientific or technical concepts that will be investigated, giving the complete research plan. Describe the technical approach and what is innovative about the proposed approach. How does the proposed approach compare to alternate approaches other researchers in this field have taken? Given the successful completion of the five-year course of investigation, what results, new knowledge, or insights, might it afford?
- **Project Narrative – Management Approach.** Describe the overall management approach and provide rationale for participation of key team members. Describe the planned relationships with any subawardees or collaborators. This is a single PI award; if there are subawardees or collaborators, explain how the proposed team fits the single PI structure. If appropriate, briefly describe anticipated schedule.
- **Project Narrative – Principal Investigator (PI) Time.** PI time is required. A high level of PI engagement is critical to the success of this program. The full proposal should budget several trips per year to NSSEFF-related activities, which include attending program reviews, interacting with service lab researchers, and participating in DoD-organized workshops. List the estimate of time the principal investigator and other senior professional personnel will devote to the research. This shall include information pertaining to other commitments of time, such as sabbatical or extended leave; and proportion of time to be devoted to this research and to other research. Grants to a university may be terminated, if the PI severs connections with the university or is unable to continue active participation in the research. State the number of undergraduate students, graduate students, and postdoctoral researchers for whom each senior staff member is responsible. If the principal investigator or other key personnel is currently engaged in research under other auspices, or expect to receive support from other agencies for research during the time proposed for NSSEFF support, state the title of the other research, the proportion of time to be devoted to it, the amount of support, name of agency, dates, etc. Send any changes in this information as soon as they are known. Submit a short abstract (including title, objectives, and approach) of that research and a copy of the budget for both current and pending research projects.
- **Project Narrative – Facilities.** Describe facilities available for performing the proposed research and any additional facilities or equipment the organization proposes to acquire at its own expense. Indicate government-owned facilities or equipment already possessed that will be used. Reference the facilities grant and/or contract number or, in the absence of a facilities grant/contract, the specific facilities or equipment and the number of the award under which they are accountable.
- **Project Narrative – Special Test Equipment.** List special test equipment or other property required to perform the proposed research. Segregate items to be acquired with award funds from those to be furnished by the Government. When practical, give a description or title and estimated cost of each item. When information on individual items is unknown or not available, group the items by class and estimate the values. In addition, state why it is necessary to acquire the property with award funds.
- **Project Narrative – Equipment.** Justify the need for each equipment item. Additional facilities

and equipment will not be provided unless the research cannot be completed by any other practical means. Include the proposed life expectancy of the equipment and whether it will be integrated with a larger assemblage or apparatus. If so, state who owns the existing apparatus.

v. Research & Related Budget Form

Estimate the total research project cost. Categorize funds by year. Provide separate annual budgets for each of the five years of the NSSEFF award. For planning purposes, assume that grants will start between June and September 2017. In addition to the Research & Related Budget forms available on Grants.gov, the budget proposal should include a budget justification for each year, clearly explaining the need for each item. Applicants who enter a fee on Part J of the budget will not be eligible to receive a grant. Educational organizations shall submit a spending profile with their cost proposal. Attach the budget justification and/or spending profile to Section K of the R&R Budget form.

vi. Attachments Form

List of References - Identify three (and only three) persons who have been asked to submit confidential letters of recommendation. Also, provide the name, e-mail address, phone number, and professional relationship with these persons. Refer to Section IV entitled, "Application and Submission Information" paragraph vii entitled "Confidential Letters of Recommendation" for instructions on the format, content, and submission of these letters. No more than three letters will be forwarded to evaluators.

Summary Chart (one (1) page limit, single-sided) – A completed summary chart must be submitted with the full proposal. This summary chart should be in quad chart format which will include objectives, technical approach, anticipated DoD benefit, and budget.

vii. Confidential Letters of Recommendation (3 letters total)

A confidential letter of recommendation must be submitted by each of the three references listed above on official letterhead. These letters have no content requirements, but they should accurately describe relevant information about the nominee with regard to professional abilities, technical skills, research management acumen, and integrity.

The confidential letters of recommendation must be submitted in PDF format via e-mail to ONR at paula.barden.ctr@navy.mil by **11:59 p.m. Eastern Local Time on January 9, 2017**. This information should be forwarded by the applicant to each of the persons submitting a confidential letter of recommendation.

Individuals may contact Ms. Barden to confirm submission of the letters.

C. Submission of Proposals through Grants.gov

This announcement package may be accessed from the Internet at the Grants.gov web site (<http://www.grants.gov/>) and on the ONR website at <http://www.onr.navy.mil/Contracts-Grants/Funding-Opportunities/Broad-Agency-Announcements.aspx>

Forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov/>, select "Apply for Grants," followed by "Step 1 – Download a Grant Application Package." In the search function, enter the funding opportunity number for this announcement (N00014-16-R-FO12). In the search results, click on "download" under the heading "Instructions and Application" to download the instructions and application package. Offerors can also search for the CFDA Number "12.300" or Funding Opportunity Competition ID "NSSEFF" to download the instructions and application.

Due to high traffic volume, applicants are highly encouraged to submit applications early. Waiting until the due date and time may result in applications being late. Common closing dates include the first, fifteenth and last

day of any month. Potential applicants are reminded to plan accordingly. Also, please check Grants.gov prior to submission for any notices posted on Grants.gov offering alternate submission options as a result of system saturation. Note: All attachments to all forms must be submitted in PDF format (Adobe Portable Document Format).

Full Proposal Packages will only be accepted from PIs invited to submit full proposals. Proposal packages must be submitted electronically to Grants.gov (<http://www.grants.gov/>) **no later than 11:59 p.m. Eastern Local Time on January 9, 2017.**

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/Contracts-Grants/submit-proposal/grants-proposal/grants.gov.aspx>.

White Papers and Supporting Documentation should not be submitted through the Grants.gov Apply process. They should be submitted via Acqtrak.

For electronic submission of full grant 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 System for Award Management (SAM), registering with the credential provider, and registering with Grants.gov. See [www.grants.gov](http://www.grants.gov/GetStarted), specifically www.grants.gov/GetStarted.

Use the Grants.gov Organization Registration Checklist at <http://www.grants.gov/web/applicants/organization-registration.html> which will provide guidance through the process. Designating an E-Business Point of Contact (E-Biz POC) and obtaining a special password called 'MPIN' are important steps in the SAM registration process. Applicants who are not registered with SAM.gov and Grants.gov should allow at least 21 days in order to complete these requirements. The process should be started as soon as possible. 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 (1-606-545-5035 for foreign applicants) or support@grants.gov.

Special Notices Relative to Grant Applications to be submitted through Grants.Gov:

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.

Abstracts of all funded research projects will be posted on a public website. Do not include proprietary or confidential information in the abstract.

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. You will know that your proposal has reached ONR when the AOR receives e-mail Number 3. You will need 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 that is used to determine whether the proposal was submitted.

Number 2 – The applicant will receive an e-mail indicating that the proposal has been validated by Grants.gov within two days of submission (This means that all of the required fields have been

completed). After an institution submits an application, Grants.gov generates a submission receipt via email and also sets the application status to "Received." This receipt verifies the Application has been successfully delivered to the Grants.gov system. Next, Grants.gov verifies the submission is valid by ensuring it does not contain viruses, the opportunity is still open, and the applicant login and applicant DUNS number match. If the submission is valid, Grants.gov generates a submission validation receipt via email and sets the application status to "Validated." If the application is not validated, the application status is set to "Rejected." The system sends a rejection email notification to the institution, and the institution must resubmit the application package. Applicants can track the status of their application by logging in to Grants.gov.

Number 3 – The third notice is an acknowledgment of receipt in e-mail form from ONR within ten days from the proposal due date, if applicable. 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.

V. EVALUATION INFORMATION

A. Evaluation Criteria

The NSSEFF program seeks to invest in basic research and to identify challenging fundamental scientific areas of investigation that may have potential for long term benefit to DoD. Proposed research should describe cutting-edge efforts on basic scientific problems. White papers deemed to be applied research, as opposed to basic research, will not advance to the proposal stage of the competition. Refer to the DoD definitions of basic research and applied research at http://comptroller.defense.gov/fmr/current/02b/Volume_02b.pdf

Subject to funding availability, white papers and proposals deemed to be basic research will be evaluated under the following criteria:

- Scientific and technical merits of the proposed research;
- The principal investigator's qualifications, ability to perform the proposed work, and the overall management approach;
- Relevance of the proposed research to the DoD and to its NSSEFF program; and
- The reasonableness of proposed costs.

The U.S. Government does not guarantee an award in each research area. Further, be advised that as funds are limited, otherwise meritorious proposals may not be funded.

All, some, one, or none of the full proposers may be contacted after the full proposal review process by phone by the Director of the Basic Research Office, ASD(R&E) to clarify certain aspects of their proposed research efforts.

B. Evaluation Panel

White papers and proposals submitted under this FOA are evaluated through a peer or scientific review process. Evaluation will use merit-based competitive procedures according to Department of Defense Grant and Agreement Regulations (DoDGARs) citation of 32 C.F.R Sec 22.315. White papers and proposals will be evaluated by Government personnel and Non-Government reviewers. Non-Government reviewers will include university faculty and staff researchers. Each reviewer is required to sign a conflict-of-interest and confidentiality statement attesting that the reviewer has no known conflicts of interest, and that application and evaluation information will not be disclosed outside the evaluation panel. The names and affiliations of reviewers are not disclosed.

White papers that best fulfill the evaluation criteria will be identified by members of the white paper evaluation panels and recommended to the Assistant Secretary of Defense for Research & Engineering (ASD(R&E)). ASD(R&E) will invite individual PIs to submit full proposals. Feedback on white papers will only be provided to those invited to submit a full proposal.

Proposals that best meet the evaluation criteria will be recommended for funding. The Government reserves the right to select and fund for award all, some, one, or none of the proposals in response to this announcement.

Employees of commercial firms under contract to ASD(R&E) and ONR may be used to process white papers and proposals. By submitting a proposal, offerors consent to allowing access to their proposals by these support contractors, their support contracts include nondisclosure agreements prohibiting contractor employees from disclosing any information submitted by other contractors.

VI. SUMMARY OF PROPOSAL SUBMISSION FORMS

Form	Attachment	Action
SF-424 (R&R) Application for Federal Assistance	SF-LLL if there are lobbying activities to disclose	Enter appropriate information in the data fields as described in Section VIII. E. Attach SF-LLL to box 18 if necessary. (Last_Name_SFLLL.pdf) Attach Representation Regarding an Unpaid Delinquent Tax Liability or a Felony Conviction Under any Federal Law – DoD Appropriations to box 18 with other documentation.
R&R Senior/Key Person Profile Form	PI Curriculum Vitae	Attach to PI Biographical Sketch field (LastName_CV.pdf)
	Key Personnel Biographical Sketches	Attach to Biographical Sketch field for each senior/key person (LastName_Bio.pdf)
R&R Project/Performance Site Locations Form	None	Enter appropriate information in the data fields as described below.
R&R Other Project Information Form	Project Abstract	Attach to Field #7 (LastName_Abstract.pdf)
	Project Narrative	Attach to Field #8 (LastName_Narrative.pdf)
R&R Budget Form	Budget Justification	Enter appropriate information in the data fields as described below. Attach budget justification to Section K of the budget form for each applicable year (LastName_Budget.pdf)
Attachments Form	List of 3 Persons Submitting Letters of Recommendation	Upload as attachment 1
	Summary Chart	Upload as attachment 2

VII. SIGNIFICANT DATES AND TIMES

Schedule of Events		
Event	Date	Time
AcquTrak open for submission	June 15, 2016	
Questions Regarding White Paper and Supporting Documentation (submitted by)	July 27, 2016	
AcquTrak Registration (required by)	August 15, 2016	11:59 PM Eastern Local Time
White Paper and Supporting Documentation (required by)	August 17, 2016	11:59 PM Eastern Local Time
Notification of White Paper Selection	October 28, 2016**	
Proposal and Confidential Letters of Recommendation (invitation only by)	January 9, 2017	11:59 PM Eastern Local Time
Notification of Selection for Award	15 Mar 2017**	
Start Date of Grant	01 Jun 2017** to 30 Sep 2017**	

* Questions submitted after the Q&A deadline as noted in the table above may not be answered.

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

a. Submission of Late Proposals

Any full proposal submitted and validated through Grants.gov where the time and date for submission (e-mail Number #2) is after the deadline for proposal submission in Section IV entitled, "Application and Submission Information" paragraph number 3 entitled, "Significant Dates and Times" 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 FOA 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 any soft-copy proposals be uploaded at least two days before the deadline established in the solicitation so that it will not be received late and be ineligible for award consideration.

b. Intergovernmental Review

The funding opportunity is not subject to intergovernmental review.

c. Funding Restrictions

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

All pre-award costs are incurred at the recipient's risk. DoD Research and Engineering Enterprise (ASD (R&E)) and ONR are under no obligation to reimburse such costs, if for any reason the institution does not receive an award or if the award is less than anticipated and inadequate to cover such costs.

Government agencies, DoD laboratories and universities, and Federally Funded Research and Development Centers (FFRDCs) may collaborate on the research but may not receive NSSEFF funds, directly or via subaward.

d. Other Submission Requirements

Other Submission Requirement application materials submitted in whole or in part by electronic media (computer disk or tape, facsimile machine, electronic mail, etc.) or in hard copy form to ASD (R&E) or ONR will not be accepted (unless the materials have also been submitted in accordance with the requirements outlined in this announcement).

VIII. AWARD ADMINISTRATION INFORMATION

A. Administrative Requirements

System for Award Management (SAM): All Offerors submitting proposals or applications must:

- 1) be registered in the SAM prior to submission;
- 2) maintain an active SAM registration with current information at all times during which it has an active Federal award or an application under consideration by any agency; and
- 3) provide its DUNS number in each application or proposal it submits to the agency.

The System for Award Management (SAM) is a free web site that consolidates the capabilities you used to find in CCR/FedReg, ORCA, and EPLS. Future phases of SAM will add the capabilities of other systems used in Federal procurement and awards processes.

SAM may be accessed at <https://www.sam.gov/portal/public/SAM/>

B. Access to your Grant

Hard copies of award/modification documents are no longer mailed to Offerors. All ONR award/modification documents will be available via the DoD Electronic Document Access System (EDA).

EDA is a web-based system that provides secure online access, storage, and retrieval of awards and modifications to DoD employees and vendors.

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

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

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

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

C. Federal Funding Accountability and Transparency Act of 2006:

The Federal Funding Accountability and Transparency Act of 2006 (Public Law 109-282), as amended by Section 6202 of Public Law 110-252, requires that all agencies establish requirements for recipients reporting information on subawards and executive total compensation as codified in 2 CFR Part 170. Any company, non-profit agency or university that applies for financial assistance (either grants, cooperative agreements or other transaction agreements) as either a prime or sub-recipient under this BAA must provide information in its proposal that describes the necessary processes and systems in place to comply with the reporting requirements identified in 2 CFR

Part 170 Appendix A. Entities are required to meet reporting requirements unless an exception or exemption applies. Please refer to 2 CFR Part 170, including Appendix A, for a detailed explanation of the requirements, exceptions, and exemptions.

D. Military Recruiting on Campus (DoDGARs § 22.520):

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

E. Certification regarding Restrictions on Lobbying:

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 (complete Block 17).

(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.

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

All grant applicants are required to complete the "Representation on Tax Delinquency and Felony Conviction" found at <http://www.onr.navy.mil/Contracts-Grants/submit-proposal/grants-proposal.aspx> by checking the "I agree" box in block 17 and attaching the representation to block 18 of the SF424 (R&R) as part of the electronic proposal submitted via Grants.gov. The representation reads as follows:

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

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

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

SDO as soon as it can do so, to facilitate completion of the required consideration before award decisions are made.

G. Representation Regarding the Prohibition on Using Funds with Entities that Require Certain Internal Confidentiality Agreements

Agreement with the representation below will be affirmed by checking the "I agree" box in block 17 of the SF424 (R&R) as part of the electronic proposal submitted via Grants.gov. The representation reads as follows:

By submission of its proposal or application, the applicant represents that it does not require any of its employees, contractors, or subrecipients seeking to report fraud, waste, or abuse to sign or comply with internal confidentiality agreements or statements prohibiting or otherwise restricting those employees, contractors, subrecipients from lawfully reporting that waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information.

Note that: (1) the basis for this representation is a prohibition in section 743 of the Financial Services and General Government Appropriations Act, 2015, Pub. L. 113-235 on provision of funds through grants and cooperative agreements to entities with certain internal confidentiality agreements or statements; and 92 section 743 states that it does not contravene requirements applicable to Standard Form 312, Form 4414, or any other form issued by a Federal department or agency governing the nondisclosure of classified information.

H. Applicants for grants, cooperative agreements, or other transaction agreements as applicable are required to comply with 2 CFR 215.42, Codes of Conduct, to prevent real or apparent conflicts of interest in the award and administration of any contracts supported by federal funds. This provision will be incorporated into all assistance instruments awarded under this BAA.

I. Reporting:

If the Federal share of any Federal award may include more than \$500,000 over the period of performance, the post award reporting requirements, Award Term and Condition for Recipient Integrity and Performance Matters (2 U.S.C. 200 Appendix XII), is applicable as follows:

Reporting of Matters Related to Recipient Integrity and Performance

1. General Reporting Requirement

If the total value of your currently active grants, cooperative agreements, and procurement contracts from all Federal awarding agencies exceeds \$10,000,000 for any period of time during the period of performance of this Federal award, then you as the recipient during that period of time must maintain the currency of information reported to the System for Award Management (SAM) that is made available in the designated integrity and performance system (currently the Federal Awardee Performance and Integrity Information System (FAPIS)) about civil, criminal, or administrative proceedings described in paragraph 2 of this award term and condition. This is a statutory requirement under section 872 of Public Law 110-417, as amended (41 U.S.C. 2313). As required by section 3010 of Public Law 111-212, all information posted in the designated integrity and performance system on or after April 15, 2011, except past performance reviews required for Federal procurement contracts, will be publicly available.

2. Proceedings About Which You Must Report

Submit the information required about each proceeding that:

- a. Is in connection with the award or performance of a grant, cooperative agreement, or

procurement contract from the Federal Government;

b. Reached its final disposition during the most recent five year period; and

c. Is one of the following:

- (1) A criminal proceeding that resulted in a conviction, as defined in paragraph 5 of this award term and condition;
- (2) A civil proceeding that resulted in a finding of fault and liability and payment of a monetary fine, penalty, reimbursement, restitution, or damages of \$5,000 or more;
- (3) An administrative proceeding, as defined in paragraph 5. of this award term and condition, that resulted in a finding of fault and liability and your payment of either a monetary fine or penalty of \$5,000 or more or reimbursement, restitution, or damages in excess of \$100,000; or
- (4) Any other criminal, civil, or administrative proceeding if:
 - (i) It could have led to an outcome described in paragraph 2.c.(1), (2), or (3) of this award term and condition;
 - (ii) It had a different disposition arrived at by consent or compromise with an acknowledgment of fault on your part; and
 - (iii) The requirement in this award term and condition to disclose information about the proceeding does not conflict with applicable laws and regulations.

3. Reporting Procedures

Enter in the SAM Entity Management area the information that SAM requires about each proceeding described in paragraph 2 of this award term and condition. You do not need to submit the information a second time under assistance awards that you received if you already provided the information through SAM because you were required to do so under Federal procurement contracts that you were awarded.

4. Reporting Frequency

During any period of time when you are subject to the requirement in paragraph 1 of this award term and condition, you must report proceedings information through SAM for the most recent five year period, either to report new information about any proceeding(s) that you have not reported previously or affirm that there is no new information to report. Recipients that have Federal contract, grant, and cooperative agreement awards with a cumulative total value greater than \$10,000,000 must disclose semiannually any information about the criminal, civil, and administrative proceedings.

5. Definitions

For purposes of this award term and condition:

a. Administrative proceeding means a non-judicial process that is adjudicatory in nature in order to make a determination of fault or liability (e.g., Securities and Exchange Commission Administrative proceedings, Civilian Board of Contract Appeals proceedings, and Armed Services Board of Contract Appeals proceedings). This includes proceedings at the Federal and State level but only in connection with performance of a Federal contract or grant. It does not include audits, site visits, corrective plans,

or inspection of deliverables.

b. Conviction, for purposes of this award term and condition, means a judgment or conviction of a criminal offense by any court of competent jurisdiction, whether entered upon a verdict or a plea, and includes a conviction entered upon a plea of nolo contendere.

c. Total value of currently active grants, cooperative agreements, and procurement contracts includes—
(1) Only the Federal share of the funding under any Federal award with a recipient cost share or match; and

(2) The value of all expected funding increments under a Federal award and options, even if not yet exercised.

J. Security Classification:

ONR does not provide access to classified material under grants.

K. Use of Animals and Human Subjects in Research:

If animals are to be utilized in the research effort proposed, the Offeror must submit prior to award a Full Appendix or Abbreviated Appendix with supporting documentation (copies of IACUC approval, IACUC Approved Protocol and most recent USDA inspection reports) prior to award. For assistance with submission of animal research related documentation, contact the ONR Animal Use Administrator at sevgi.bullock@navy.mil. Guidance: <http://www.onr.navy.mil/en/About-ONR/compliance-protections/Research-Protections/Animal-Recombinant-DNA.aspx> Similarly, for any proposal for research involving human subjects, the Offeror must submit or indicate an intention to 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 Federal wide Assurance (FWA) or the Offeror's DoD-Navy Addendum. 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 including the category of exemption and short rationale statement.

Determinations that the activity is not research involving human subjects must also be provided. This documentation must be submitted to the ONR Human Research Protection Official (HRPO), by way of the ONR Program Officer. 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. For assistance with submission of human subject research related documentation, contact the ONR Human Research Protection Official at (703) 696-4046.

L. Recombinant DNA:

Proposals which call for experiments using recombinant DNA must include documentation of compliance with Department of Human and Health Services (DHHS) recombinant DNA regulations, approval of the Institutional Biosafety Committee (IBC), and copies of the DHHS Approval of the IBC letter.

M. Institutional Dual Use Research of Concern:

As of September 24, 2015, all institutions and USG funding agencies subject to the United States Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern must comply with all the requirements listed therein. If your research proposal directly involves certain biological agents or

toxins, contact the cognizant Technical Point of Contact.. U.S. Government Science, Safety, Security (S3) guidance may be found at <http://www.phe.gov/s3/dualuse>.

N. Department of Defense High Performance Computing Program:

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

O. 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. (This statement does not apply to international offerors submitting proposals to ONRG. International offerors should contact the cognizant ONRG Administrative Director (AD) for guidance prior to submitting a proposal.) Interim meetings are likely, but these will be accomplished via video telephone conferences, telephone conferences, or via web-based collaboration tools.