



**AFOSR-BAA-2009-4**

**OVERVIEW INFORMATION**

The Director, Defense Research and Engineering (DDR&E) sponsors the National Security Science and Engineering Faculty Fellowship (NSSEFF). NSSEFF is part of the National Defense Education Program (NDEP) that supports innovative basic science and engineering research within academia, as well as education initiatives that seek to create and develop the next generation of scientists and engineers for the defense and national security workforce.

The Air Force Office of Scientific Research (AFOSR) manages the NSSEFF program for DDR&E. To accomplish this task, AFOSR is soliciting proposals for the NSSEFF program through this Broad Agency Announcement (BAA).

AFOSR will not issue paper copies of this announcement and reserves the right to select and fund for award all, some, or none of the proposals in response to this announcement. No funding will be provided 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.

- **Federal Agency Name**

Air Force Office of Scientific Research

- **Funding Opportunity Title**

National Security Science and Engineering Faculty Fellowship

- **Announcement Type**

Four-Step Broad Agency Announcement

- **Announcement Number**

AFOSR-BAA-2009-4

- **Catalog of Federal Domestic Assistance (CFDA) Number**  
12.630

- **Due Dates**

Letter of Intent (required)	23 June 2009, 4:00 p.m. EDT
White Paper and Nomination Letter (required)	7 July 2009 , 4:00 p.m. EDT
Proposal and Confidential Letters of Recommendation (by invitation only)	16 October 2009, 4:00 p.m. EDT
Oral Presentation (by invitation only)	5-6 December 2009

EDT = Eastern Daylight Time

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## I. Funding Opportunity Description

The Director, Defense Research and Engineering (DDR&E) sponsors the National Security Science and Engineering Faculty Fellowship (NSSEFF) Program. NSSEFF is part of the National Defense Education Program (NDEP) that supports innovative basic science and engineering research within academia, as well as education initiatives that seek to create and develop the next generation of scientists and engineers for the defense and national security workforce.

The Air Force Office of Scientific Research (AFOSR) manages the NSSEFF program for DDR&E. To accomplish this task, AFOSR is soliciting proposals for the NSSEFF program through this Broad Agency Announcement (BAA). This BAA seeks outstanding researchers for the NSSEFF program 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.” ([www.defenselink.mil/comptroller/fmr/02b/02b\\_05.pdf](http://www.defenselink.mil/comptroller/fmr/02b/02b_05.pdf)). The DoD’s basic research program invests broadly in many scientific fields to ensure that it has early cognizance of new scientific knowledge. Areas of research that have produced significant improvement in military capabilities include electronics, materials science, physics, chemistry, mathematics, computer science, mechanics, biological and life sciences, atmospheric and space sciences, cognitive and neural sciences, terrestrial sciences, and ocean sciences.

DoD’s basic research investment in this program also will contribute to the development of the next generation of high performing scientists and engineers, who will be educated and trained as a part of the NSSEFF Fellows’ research. Ensuring that students are actively engaged in conducting research funded by the DoD is an important priority. The NSSEFF program helps to ensure that our Nation has an active, long-term and aggressive research and engineering portfolio that attracts the foremost creative, innovative and productive university faculty scientists, engineers and their students.

Objectives of the program are to:

- Recruit and retain highly innovative and productive university researchers
- Create a forum to recognize and reward outstanding researchers
- Demonstrate DoD commitment to high quality university researchers by providing five-year awards
- Familiarize select university researchers and their students with DoD’s current and future challenges
- Foster long-term relationships between science and engineering faculty members and the DoD

- Increase the number of exceptionally talented technical experts that are contributing to DoD's mission and upon whom DoD may draw to serve on advisory boards, panels, and groups

The focus of the current competition is to provide faculty scientists and engineers from U.S. accredited, doctoral degree-granting academic institutions with career enhancing opportunities through their association with the DoD while conducting unclassified basic research in critical areas of interest. Outstanding researchers selected for award will participate in all NSSEFF activities that are designed to enhance their understanding of critical research needs and interact with DoD senior leaders.

The NSSEFF program will focus its funding on innovative projects that have the potential for significant long-term impact. Risk-taking is encouraged; however, all proposals must demonstrate solid judgment and rationale. The BAA is for single investigator grant proposals for basic research in one of the following technical subject categories of interest to the DoD:

- Biology and Biomedical Sciences
- Chemistry
- Computer and Information Sciences
- Earth, Atmospheric, Oceanographic, and Space Sciences
- Engineering
- Materials
- Mathematics
- Physics
- Social, Behavioral, and Cognitive Sciences
- Interdisciplinary (i.e., any combination of the other technical subject categories)

## **II. Award Information**

The total amount of funding for five years available for grants resulting from this BAA is estimated to be about \$42.5M, pending out-year appropriations. It is anticipated that the maximum award will be \$850K per year for 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.

NSSEFF Fellows will be expected to attend all NSSEFF activities scheduled throughout the year. These activities may include an orientation meeting, site visits to DoD labs, technical workshops, and annual meeting to report the progress of NSSEFF-sponsored research. NSSEFF Fellows may be encouraged to serve as members of DoD advisory boards, panels, or groups.

### **III. Eligibility Information**

#### **1. Eligible Institutions**

Any accredited, U.S. doctoral-degree granting academic institution is eligible to apply. No portion of this BAA is set aside for a specific group. Foreign institutions are not eligible for awards granted in response to this BAA.

#### **2. Eligible Individuals**

The NSSEFF program is open to outstanding faculty and staff scientists and engineers employed by accredited, U.S. doctoral degree-granting academic institutions who will serve as the principal investigator (PI) for the proposed research. Only one PI may be listed on the application. The individual PI must be a U.S. citizen or permanent resident.

The NSSEFF award is not meant to be an early career award. It is expected that successful applicants will have a record of substantial scientific contributions. Applicants selected for NSSEFF awards are likely to have received awards or honors, or have a named position or a position of distinction, such as an elected fellow of a national professional society.

Individuals may be ineligible for award if all requirements of the announcement are not met by the due dates indicated in this announcement.

#### **3. Cost Sharing**

Cost sharing is not required.

### **IV. Application and Submission Information**

#### **1. Address to Request Announcement Package**

This announcement may be accessed from the Internet at the Grants.gov web site (<http://www.grants.gov/>). Applicants should be alert for any BAA amendments that may permit extensions to the proposal submission date or that may otherwise modify the announcement.

#### **2. Marking of White Papers and Proposals**

If proprietary information is submitted, DDR&E and AFOSR will make every effort to protect the confidentiality of the proposal and any evaluations. However, under the Freedom of Information Act (FOIA) requirements, such information (or portions thereof) may potentially be subject to release. If protection is desired for proprietary or confidential information, the proposer must mark the proposal with a protective legend found in Federal Acquisition Regulation (FAR) 52.215-1(e) as follows:

- (1) Mark the title page with the following legend: This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed -- in whole or in part -- for any purpose other than to evaluate this

proposal. If, however, a contract is awarded to this offeror as a result of -- or in connection with -- the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]; and

(2) Mark each sheet of data the proposer wishes to restrict with the following legend: Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

Modify the statements to permit release to outside evaluators retained by DDR&E and AFOSR. Although the legend is FAR based, it is applicable to proposals submitted either for an assistance instrument or contract.

### **3. Content and Form of Application Submission**

The application process is in four stages, as described below.

#### **A. Electronic Submission of Letter of Intent**

**The letter must be submitted electronically to <https://acqutrak.noblis.org/ApplyNSSEFF> by 4:00 p.m. Eastern Daylight Time (EDT) on 23 June 2009. Persons submitting the letter of intent must register on the website by 4:00 p.m. (EDT) on 22 June 2009.**

Institutions intending to nominate individual faculty and staff must submit a letter of intent signed by the President, Chancellor, or highest campus official of the academic institution. If the highest official is unavailable for signature at the time of submission, the highest ranking official available and authorized to sign for the individual designated above may sign.

The letter of intent must:

- Appear on official letterhead of the academic institution
- Display the date on which it was signed
- State the name, title, faculty position, department affiliation, and email address of each individual that will be nominated for award
- State the proposed research topic
- State the technical subject category most appropriate for the proposed research topic (see technical subject categories in Section I of this announcement)
- Provide Sponsored Programs Office contact information with email address
- Provide President's/Chancellor's Office contact information with email address

An institution may submit one letter of intent that contains the information required for all the individual PIs it intends to nominate. If more individuals request nomination after the

letter is sent, additional letter(s) may also be submitted. However, each individual must be named in an official letter of intent to be eligible to submit a white paper.

Letters of intent submitted after the deadline or found to be non-compliant will not be reviewed.

## **B. Electronic Submission of White Paper Package and Nomination Letter**

**The documents must be submitted electronically to**

**<https://acqutrak.noblis.org/ApplyNSSEFF> by 4:00 p.m. (EDT) on 7 July 2009. Persons submitting the white paper and/or nomination letter must register on the website by 4:00 p.m. (EDT) on 6 July 2009 if not already registered on the website.**

The documents will be submitted in PDF format as two files. The first file includes the white paper package (executive summary, white paper narrative, summary chart, and CV) and the second file is the signed nomination letter. The applicant will also enter the following information at the electronic submission portal site: project title, principal investigator's name, date of Ph.D. or equivalent degree, institution's contact information (institution's name and complete mailing address, e-mail addresses, and facsimile and phone numbers), sponsored program office contact information (point of contact name, e-mail address, phone number), technical subject category, and whether the principal investigator holds a valid U.S. security clearance. **Note: A security clearance is not required for award.**

### **B.1. White Paper Package – Format and Content**

The white paper should provide sufficient information on the research being proposed (e.g., hypothesis, theories, concepts, approaches, data measurements, and analysis) to allow for an assessment by a technical expert. The white paper will capture the essence of the full five-year research plan and permit a technical expert to assess the potential of the intended research to meet the objectives of the program.

White paper format should be as follows:

- Paper Size – 8.5 x 11 inch paper
- Margins – 1 inch
- Spacing – single
- Font – Times New Roman is strongly recommended, 12 point or larger
- PI's name and institution in header or footer
- Appropriate markings on each page that contains proprietary or confidential information (see Section IV.2 of this announcement)

White paper content should be as follows:

- Executive Summary (one (1) page limit, single-sided) – The Executive Summary should be a concise description of the scientific, technical, and management approach

proposed to address areas of interest. The Executive Summary also will point out what is innovative about the proposed research approach.

- Technical Narrative (five (5) page limit, single-sided):
  - Describe the basic scientific or technical concepts to be investigated
  - Summarize the state of the field and describe what is innovative about the proposed approach
  - Given the successful completion of the five-year course of investigation, what results, new knowledge, or insights might it afford compared to alternate approaches other researchers in this field have taken
  - Describe the technical approach
  - Identify the key scientific, technical, or engineering challenges that must be successfully met (and the sequence in which each must occur) to complete this project
  - Describe the plan to mitigate those risks
  - Describe any material that must be provided by the Government to support the proposed research
  - Provide a summary of estimated costs
  - List equipment that may exceed 25 percent of the total grant award
- Relevant references (one (1) page limit, single-sided)
- Principal Investigator'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 previous DoD funding within the last 8 years. **Note: Previous funding from the DoD is not required for award.**
- Complete Summary Chart (one (1) page, single-sided) – The required format for the summary chart can be found in the attached file SummaryChart.ppt.

**B.2. Nomination Letter from an Academic Institution Official (two (2) page limit, single-sided)**

A signed letter of nomination and commitment must be submitted in PDF format when submitting the white paper. The letter must be signed by the President, Chancellor, or highest campus official of the academic institution. If the highest official is unavailable for signature at the time of submission, the highest ranking official available and authorized to sign for the individual designated above is acceptable. Each white paper must be accompanied by a separate formal nomination letter from the academic institution.

Nomination letters must:

- Appear on official letterhead for the academic institution

- Display the date on which it was signed
- State the name of the PI nominated
- State the technical subject category of the white paper submitted
- State a commitment from the university to comply with the requirements of the grant, if awarded
- Briefly address the significance of the proposed research in relation to the frontiers of knowledge in the nominated individual's field
- Address the PI's overall record of academic and professional accomplishments that make the applicant an outstanding researcher and deserving of the award

### **B.3. White Paper and Nomination Letter Submission**

**White papers and nomination letters in PDF format must be submitted electronically via <https://acqutrak.noblis.org/ApplyNSSEFF>.** The submission could take several minutes depending on network connection and the size of the files being submitted. The submitter is responsible for leaving enough time to upload the white paper and nomination letter before the deadline. An e-mail confirmation will be sent upon receipt of the submission to the PI and/or Sponsored Programs Office. White papers and nomination letters submitted after the deadline or found to be non-compliant will not be reviewed.

## **C. Electronic Submission of Proposal Package and Letters of Recommendation**

**These application materials will only be accepted from PIs who are invited to submit full proposals. Proposal packages must be submitted electronically to Grants.gov (<http://www.grants.gov/>) by 4:00 p.m. (EDT) on 16 October 2009. Letters of recommendation must be submitted via e-mail to the AFOSR program manager, Dr. Djuana Lea, at [djuana.lea@afosr.af.mil](mailto:djuana.lea@afosr.af.mil) by 4:00 p.m. (EDT) on 16 October 2009.**

### **C.1. Proposal Package – Format**

Proposal package format should be as follows:

- Paper Size – 8.5 x 11 inch paper
- Margins – 1 inch
- Spacing – single
- Font – Times New Roman is strongly recommended, 12 point or larger
- PI's name and institution in header or footer
- Appropriate markings on each page that contains proprietary or confidential information (see Section IV.2)

### **C.2. Advance Preparation for Electronic Submission of Proposal Package**

Proposals must be submitted through Grants.gov. There are several one-time actions your organization must have completed before it will be able to submit applications through Grants.gov. Well before the submission deadline, you should verify that the persons

authorized to submit proposals for your organization have completed those actions. If not, it may take them several weeks to complete the actions before they will be able to submit applications. The process your organization must complete includes obtaining a Dun and Bradstreet Data Universal Numbering System (DUNS) number, registering with the Central Contract Registry (CCR), and registering with Grants.gov. (Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called MPIN are important steps in the CCR registration process.) Use the Grants.gov Organization Registration User Guide (<http://www.grants.gov/assets/OrgRegUserGuide.pdf>) and the Organization Registration Checklist ([http://www.grants.gov/assets/Organization\\_Steps\\_Complete\\_Registration.pdf](http://www.grants.gov/assets/Organization_Steps_Complete_Registration.pdf)) to guide you through the process. Should you have questions relating to the registration process, system requirements, how an application form works, the submittal process or Adobe Reader forms, refer to the applicant resources on Grants.gov at [http://www.grants.gov/applicants/app\\_help\\_reso.jsp](http://www.grants.gov/applicants/app_help_reso.jsp). You may also contact Grants.gov at 1-800-518-4726 or support@Grants.gov.

### **C.3. Submitting the Proposal Package**

Forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select “Apply for Grants”, and then follow the instructions. In the Grants.gov search function, enter the funding opportunity number for this announcement (AFOSR-BAA-2009-4). In the Search Results, click on the Opportunity title: NATIONAL SECURITY SCIENCE AND ENGINEERING FACULTY FELLOWSHIP (NSSEFF). On the next page, click on the box marked "Application" in the upper right hand corner of the page. Then click on “download” under the heading “Instructions and Application” to download the application package. You can also search for the CFDA Number 12.630, Basic, Applied, and Advanced Research in Science and Engineering. On the Selected Grant Applications for Download page, click on “download” under the heading “Instructions and Applications” to download the application package. The funding opportunity will be listed. Select the 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. In addition, Grants.gov is experiencing an unprecedented volume of heavy application traffic due to the increase in applications as a result of the Recovery Act. 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). Grants.gov provides links to PDF file converters at this site: <http://grants.gov/agencies/asoftware.jsp>.

### **C.4. Proposal Package Content**

The forms required for Grants.gov submission include:

**i. SF-424 (Research & Related) Application for Federal Assistance Form**

The SF 424 (R&R) form must be used as the cover page for all proposals. Complete all the required fields in accordance with the “pop-up” instructions on the form and the following instructions for the specified fields. To see the instructions, roll your mouse over the field to be filled out. You will see additional information about that field. For example on the SF424 (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 BAA 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:** The Date Received by State and the State Application Identifier are not applicable to research.

**Field 7:** Complete as indicated. If the organization is a Minority Institution, select “Other” and under “Other (Specify)” note that you are a Minority Institution (MI).

**Field 9:** List Air Force Office of Scientific Research as the reviewing agency. This field is pre-populated in Grants.gov.

**Field 16:** 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. For assistance awards, i.e., grants and cooperative agreements, proposers using the SF 424 (R&R) are providing the certification required by 32 CFR Part 28 regarding lobbying. (The full text of this certification may be found at <http://www.wpafb.af.mil/shared/media/document/AFD-070817-127.pdf>). If you have lobbying activities to disclose, you must complete the optional form SF-LLL, Standard Form – LLL, ‘Disclosure of Lobbying Activities’ in the downloaded Adobe forms package and attach it to field 18.

**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. For the principal investigator, attach a curriculum vitae (CV). The CV should list any previous

involvement and experiences with the DoD. For each of the senior staff, attach a short biographical sketch (including a list of significant publications).

Page limits for attachments:

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

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

Complete all information as requested.

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

**Field 1 and 1a - Human Subject Use.** Each proposal must address human subject involvement in the research by addressing Field 1 and 1a of the R&R Other Project Information Form. If Field 1 indicates “Yes”, the Air Force must receive a completed OMB No. 0990-0263 form before a contract, grant, or cooperative agreement may be awarded to support research involving the use of human subjects. Attach the document to the R&R Other Project Information Form. If using Grants.gov, a completed OMB No. 0990-0263 form shall be attached in field 11 of the R&R Other Project Information Form. The OMB No. 0990-0263 is available electronically at:

<http://www.hhs.gov/ohrp/humansubjects/assurance/OF310.rtf>. Refer any questions regarding human subjects to Stephanie Bruce at [stephanie.bruce@afosr.af.mil](mailto:stephanie.bruce@afosr.af.mil).

**Field 2 and 2a - Animal Use.** Each proposal must address animal use protocols by addressing Field 2 and 2a of the R&R Other Project Information Form. If selected for award, additional documentation in accordance with Air Force standards will be required. Additional proposal guidance may be found at the AFOSR web site

<http://www.wpafb.af.mil/library/factsheets/factsheet.asp?id=9388>. Refer any questions regarding animal subjects to Stephanie Bruce at [stephanie.bruce@afosr.af.mil](mailto:stephanie.bruce@afosr.af.mil).

**Field 4a through 4d - Environmental Compliance.** Federal agencies making contract, 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 AFOSR Program Manager, Dr. Djuana Lea at [djuana.lea@afosr.af.mil](mailto:djuana.lea@afosr.af.mil). Most research efforts funded by AFOSR will, however, qualify for a categorical exclusion from the need to prepare an EIS. Air Force 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 AFOSR to make a determination if the proposed research effort qualifies for categorical exclusion.

**Field 7 – Project Abstract/Summary (one (1) page limit, single-sided).** The summary should be a description of the scientific, technical and management approach proposed to address the topic area(s) over the five year duration of the Fellowship. Describe the major components of the research plan and relevant details about how each component is both necessary and complementary with the others. Point out what is innovative about the proposed research approach. Attach the project summary to field 7 of the R&R Other Project Information Form.

**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.1 of this announcement. 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 (20-page limit, excluding list of references).** Describe the basic scientific or technical concepts you will investigate, giving your complete five year research plan. Describe your technical approach and what is innovative about your proposed approach. How does your approach compare to alternate approaches other workers in this field have taken? Identify the key scientific, technical, or engineering challenges that must be met successfully to complete this project. Describe the plan to mitigate those risks. Given the successful completion of the five-year course of investigation, what results, new knowledge, or insights, might it afford? Describe how the total team effort will be managed and provide rationale for participation of key team members. Include development of graduate students involved in research. If appropriate, briefly describe anticipated schedule and milestones.

- **Project Narrative – Principal Investigator (PI) Time.** PI time is required. 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. Awards may be terminated, if the principal investigator severs connections with the organization or is unable to continue active participation in the research. State the number of graduate students 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 contract number or, in the absence of a facilities 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 in February 2010. 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. Should a grant be awarded, AFOSR will make payments to the educational institution based upon a predetermined payment schedule. Payments will normally be made quarterly in advance of performance, based upon a spending profile which must be provided as part of the proposal. Payments should be limited to the amounts needed to conduct research during each respective period. 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**

- Nomination Letter - Submit a copy of the signed letter that was submitted with the white paper.
- List of 3 Individuals Submitting Letters of Recommendation - In this section, identify three (3) persons who have been asked to submit confidential letters of recommendation. Also, provide the name, address, email address, telephone and facsimile numbers, and professional relationship with these persons. Refer to Section IV.3.C.7 for instructions on the format, content, and submission of these letters.
- Summary Chart (one (1) page limit, single-sided) – A completed summary chart will be submitted with the full proposal. The self-explanatory summary chart template found in the attached file SummaryChart.ppt. The summary chart submitted with the white paper can be utilized, or the applicant may update what was previously submitted.

### **C.5. 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 IV.3.C.4.  Attach SF-LLL to box 18 if necessary. (LastName_SFLLL.pdf)
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 Additional Senior/Key Person Profile(s) field (LastName_Bios.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 Summary	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_Year.pdf)
Attachments Form	Nomination Letter	Upload as attachment 1
	List of 3 Persons Submitting Letters of Recommendation	Upload as attachment 2
	Summary Chart	Upload as attachment 3

### **C.6. Proposal Package Receipt Notices**

The applicant's approved account holder for Grants.gov 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 by the deadline. 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.

#### **C.7. Confidential Letters of Recommendation (3 letters total)**

A letter of recommendation must be submitted by each of the three individuals designated in the proposal package 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, integrity, and general ethical fitness to assume national security research. The letters must be submitted in PDF format via e-mail to the AFOSR program manager, Dr. Djuana Lea, at [djuana.lea@afosr.af.mil](mailto:djuana.lea@afosr.af.mil) by 4:00 p.m. (EDT) on 16 October 2009. This information should be forwarded by the applicant to each of the persons submitting a letter of recommendation. Individuals may contact Dr. Lea to confirm submission of the letters.

#### **D. Oral Presentation**

Individuals invited to submit full proposals are required to give an oral presentation to the NSSEFF Senior Review Panel (SRP) to proceed in the competition. The SRP is chaired by the Director of Basic Research in the Office of the Deputy Under Secretary of Defense (Laboratories and Basic Sciences) (DUSD (LABS)) and includes distinguished and knowledgeable professionals internal and external to the DoD. Oral presentations will be limited to approximately 10 minutes followed by a 40-minute period for the presenter to respond to questions from the SRP. The questions will address the evaluation criteria cited in Section V.1 of this announcement. Each individual presenter will receive a copy of the summary chart that he/she submitted in the full proposal package for use during the presentation. No other briefing materials (charts, slides, props, etc) will be allowed.

Oral presentations will take place on 5-6 December 2009 in the Washington DC area at a location to be determined. No funding will be provided for reimbursement of travel costs.

#### **4. Intergovernmental Review**

The funding opportunity is not subject to intergovernmental review.

#### **5. 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. DDR&E and AFOSR 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.

## 6. Other Submission Requirements

The letters of recommendation must be submitted via e-mail to the AFOSR program manager. Other 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 DDR&E or AFOSR will not be accepted (unless the materials have also been submitted in accordance with the requirements outlined in this announcement). A summary of the submission requirements is provided in the table below.

<b>What to submit</b>	<b>Content and format</b>	<b>Due date</b>
Letter of intent (required)	Described in Section IV.3.A	23 June 2009, 4:00 p.m. (EDT)
White paper package (required)	Described in Section IV. 3.B	7 July 2009, 4:00 p.m. (EDT)
Executive summary		
Technical content		
Relevant references		
CV		
Summary chart		
Proposal package (by invitation)	Described in Section IV.3.C	16 October 2009, 4:00 p.m. (EDT)
SF-424 (R&R) Application for Federal Assistance		
R&R Senior/Key Person Profile Form		
R&R Project/Performance Site Locations Form		
R&R Other Project Information Form		
R&R Budget Form		
Attachments Form		
Letters of recommendation (required for those invited to submit full proposals)	Described in Section IV.3.C	16 October 2009, 4:00 p.m. (EDT)
Oral presentation (required for those invited to submit full proposals)	Described in Section IV.3.D	5-6 December 2009

Application materials submitted after the deadlines specified in this announcement will not be considered for award.

## **V. Application Review Information**

### **1. Criteria**

The NSSEFF program seeks to invest in high payoff science and to identify challenging fundamental scientific problems with the potential for long-term benefit to DoD. Proposed research should describe cutting-edge efforts on basic scientific problems.

Subject to funding availability, white papers and proposals will be evaluated under the following criteria as follows:

- The principal investigator's qualifications, ability to perform the proposed work, and history of performance
- Scientific, engineering, and technical merits of the proposed research
- Potential interest of the proposed research to the Department of Defense
- The realism and reasonableness of proposed costs

Proposals will be evaluated under the following additional criterion:

- Sound technical and managerial approach to the proposed work, including a demonstrated understanding of the critical technologies, challenges, and strategy to address those challenges including a risk mitigation strategy.

Additional administrative information regarding submission of applications is contained in Section VIII. The technical and cost information will be analyzed simultaneously during the evaluation process. 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. Therefore, it is important that proposals show strength in as many of the evaluation areas as practicable for maximum competitiveness.

### **2. Review and Selection Process**

White papers and proposals submitted under this BAA 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 external evaluators. Each external 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 kept confidential.

Technically sound white papers that best fulfill the above criteria will be identified by members of the white paper evaluation panels and recommended to the DUSD (LABS). The DUSD (LABS) will invite approximately 20 individual PIs to submit full proposals and give oral presentations to the NSSEFF Senior Review Panel (SRP). Feedback on white papers will only be provided to those invited to submit a full proposal.

Proposals are reviewed by technical experts internal and external to the DoD and members of the SRP. Proposals that meet the evaluation criteria and address the goals of the NSSEFF program will be recommended by the SRP for funding to the DUSD (LABS) who will make the final recommendations for award. The Government reserves the right to select and fund for award all, some, or none of the proposals in response to this announcement.

Employees of commercial firms under contract to DDR&E and AFOSR may be used to administratively process proposals. These support contracts include nondisclosure agreements prohibiting contractor employees from disclosing any information submitted by other contractors.

## **VI. Award Administration Information**

### **1. Award Notices**

Awardees will be notified in December 2009. Public announcement of the awards will be made in January 2010. Should your proposal be selected for award, the principal investigator will receive a letter from DDR&E stating this information. This is not an authorization to begin work. Your business office will be contacted by the AFOSR grants officer to negotiate the terms of your award. Pre-award costs are addressed in Section IV.5.

### **2. Reporting Requirements**

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

Awardees are expected to participate in all NSSEFF activities.

## **VII. Agency Contacts**

Address questions to:

Dr. Djuana Lea  
(703) 696-9558  
djuana.lea@afosr.af.mil

## **VIII. Additional Information**

1. The cost of proposal preparation in response to this Announcement is not considered an allowable direct charge to any resulting award. Such cost is, however, an allowable expense to the normal bid and proposal indirect cost specified in FAR 31.205-18, or

OMB Circular A-21, Cost Principles for Educational Institutions or OMB Circular A-122, Cost Principles for Nonprofit Organizations.

2. Every effort will be made to protect the confidentiality of the proposal and any evaluations. The proposer must mark the proposal with a protective legend as specified in Section IV.2 of this announcement.
3. Offerors are advised that employees of commercial firms under contract to the Government may be used to administratively process proposals. These support contracts include nondisclosure agreements prohibiting their contractor employees from disclosing any information submitted by other contractors.
4. Only contracting or grants officers are legally authorized to bind the government.
5. Intellectual Property
  - a. Proposers shall identify all aspects of the intellectual property; technical data, hardware, and software that they plan to develop under this award for which the Government will acquire less than unlimited rights and to list specifically what the restrictions are. In the event that proposers do not submit such a list, the Government will assume that it automatically has unlimited rights to all intellectual property, technical data, hardware, and software developed under this award. Furthermore, the Government will assume that it has unlimited rights to all intellectual property, technical data, hardware, and software developed under this award that is not listed.
  - b. Proposers are advised that proposals containing restrictions on intellectual property are by nature less favorable and valuable to the government. Restrictions will be considered in the evaluation process. If no restrictions are intended, then the proposer should state this fact.
6. AFOSR documents are available on the AFOSR website at <http://www.wpafb.af.mil/AFRL/afosr/>.
7. Responses should reference Broad Agency Announcement AFOSR-BAA-2009-4.
8. Prospective awardees shall be registered in the CCR database prior to award, during performance, and through final payment of any award resulting from this announcement. Offerors may obtain information on registration and annual confirmation requirements via the Internet at <http://www.ccr.gov> or by calling 1-888-227-2423, or 269-961-5757.
9. DDR&E and AFOSR expect the performance of research funded by this announcement to be fundamental. DoD Directive 5230.24 and DoD Instruction 5230.27 define contracted fundamental research in a DoD context as follows:

“Contracted Fundamental Research. Includes [research performed under] grants and contracts that are (a) funded by budget Category 6.1 ("Research"), whether performed by universities or industry or (b) funded by budget Category 6.2 ("Exploratory Development") and performed on-campus at a university. The research shall not be considered fundamental in those rare and exceptional circumstances where the 6.2-funded 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 contract or grant."

#### 10. Indirect Cost Limitation for Basic Research Awards Notices:

The purpose of this notice is to make potential proposers aware of the Indirect Cost Limitation for Basic Research Awards set forth in Section 8115 of the Department of Defense Appropriations Act, 2008 (P.L. 110-116). Section 8115 of the DoD Appropriations Act limits payments of negotiated indirect cost rates on contracts, grants, and cooperative agreements (or similar arrangement), which are funded with FY 2008 Basic Research appropriations and are awarded on or after November 14, 2007, to not more than 35 percent of the total cost of the instrument. This limitation also applies to any new award made by another Federal agency to a non-Federal entity on behalf of the DoD using FY 2008 Basic Research appropriations.

The purpose of this notice is to make potential proposers aware of the Indirect Cost Limitation for Basic Research Awards set forth in Section 8109 of the Department of Defense Appropriations Act, 2009 (P.L. 110-329). Section 8109 of the DoD Appropriations Act limits payments of negotiated indirect cost rates on contracts, grants, and cooperative agreements (or similar arrangement), which are funded with FY 2009 Basic Research appropriations to not more than 35 percent of the total cost of the instrument. This limitation also applies to any new award made by another Federal agency to a non-Federal entity on behalf of the DoD using FY 2009 Basic Research appropriations.

#### KEY POINTS

- The restriction on payment of indirect costs applies to all FY 2008 or FY2009 Basic Research appropriations obligated by any award – i.e., procurement contract, grant, cooperative agreement, or any other obligational arrangement – to a non-Federal entity or awardee on or after 14 November 2007.
- The limitation on payment of indirect costs applies to an award entered into at the prime level only and does not flow down to subordinate instruments.
- For the restriction on payment of indirect cost as a percentage of total cost, “total cost” has the meaning given in the Government-wide cost principles that apply to the particular awardee (2 CFR part 220, 225, or 230, or 48 CFR part 31). “Indirect costs” are all costs of a prime award that are Facilities and Administration costs (for awardees subject to the cost principles in 2 CFR part 220) or indirect costs (for awardees subject to the cost principles in 2 CFR part 225 or 230 or 48 CFR part 31).