

## **OVERVIEW INFORMATION**

### **1. Federal Agency Name**

Air Force Office of Scientific Research

### **2. Funding Opportunity Title**

Fiscal Year 2011 Materials and Processes far from Equilibrium

### **3. Announcement Type**

This is the initial announcement

### **4. Funding Opportunity Number**

**BAA- AFOSR-2011-04**

### **5. Catalog of Federal Domestic Assistance (CFDA) Number**

12.800

### **6. Response Dates**

Proposals must be received by 4:00 PM EST, 7 January 2011

### **7. Additional Overview Content**

The Air Force Office of Scientific Research (AFOSR) manages the basic research investment for the U.S. Air Force (USAF). As a part of the Air Force Research Laboratory (AFRL), AFOSR's technical experts foster and fund research within the Air Force Research Laboratory, universities, and industry laboratories to ensure the transition of research results to support USAF needs.

AFOSR announces a fiscal year 2011 competition for research to promote and sustain university research and education focused on small molecule activation chemistry and related technologies. The program description is found in Section I of this announcement. It is expected that multiple awards will be made.

AFOSR is seeking unclassified, fundamental research proposals that do not contain proprietary information.

It is anticipated that the awards will be made in the form of grants. AFOSR reserves the right to select and fund for award all, some, or none of the proposals in response to this announcement.

AFOSR will not issue paper copies of this announcement. AFOSR provides no funding for direct reimbursement of proposal development costs. Any material submitted in response to this BAA will not be returned.

## **FULL TEXT OF ANNOUNCEMENT**

### **I. Funding Opportunity Description**

The objective of this topic includes physics and chemistry of materials in highly stressed environments where system performance depends on, and limited by, the evolution and/or degradation of materials in the presence of high chemical, electrical, thermal, radiative, or other stresses. This area includes a wide range of activities characterized by processes that are sufficiently energetic to require the understanding and managing of plasma phenomenology and the non-linear response of materials to combined loads of high electric and magnetic fields; high energy density non-equilibrium processes. The program seeks innovative and high risk proposals that advance the field of high temperature materials, space propulsion and electro-energetic physics research through the discovery and characterization of new materials and/or propulsion systems that exhibit superior performance at conditions of space propulsion or directed energy. The aim is to discovery and development of fundamental and integrated science among materials science, electric and chemical propulsion, and electro energetic physics that advances future space power and propulsion concepts.

Research would be in area that pursues advances in the understanding of materials response to combined loads of aforementioned external fields, and requires the design of techniques and experimental measurement of surface phenomena from the atomic scale up through the macro scale; study of physical and chemical processes by which such materials modified, and their response can be predicted with multi-scale modeling efforts. It is expected that molecular dynamics models, meso- and micro-scale modeling of complex surface phenomena and subsurface regimes of material would be utilized to understand and predict processes at the different time and length-scales corresponding to non-equilibrium conditions. In addition to research into underlying materials and fundamental chemical and physical processes, this area considers how they might be integrated into new classes of materials, seeking breakthroughs in electric propulsion, secure revolutionary advances of electro-energetic physics, and multi-modal diagnostics that validates the fidelity of simulations. The propellant portion of this program is devoted to the understanding electrically conductive flowing propellants (plasmas or charged particles) that serve to convert beamed or electrical energy into kinetic form such that process can be coupled with radiation-mass-transfer model that connects plasma activity and output with the deposition of energy in the materials surface, by specifying the flow of mass, momentum, and energy through the interplay between plasma and material, and by forecasting the degradation and providing scientific pathways to minimize the degradation and thus provide quantum leap in energy saving and/or increased efficiency.

Theoretical and experimental investigations focus on the phenomenon of energy coupling and the transfer of plasma flows in electrode and electrodeless systems under dynamic environments. This focus area will require the development of new experimental and computational tools to address the complexity of thermal, acoustic, chemistry, plasma, shear or pressure loads as they relate back to the performance of the space propulsion systems, power sources, directed energy weapons, sensors and radar, electronic warfare, communications, by understanding and modeling the combined behavior of physics, chemistry and mechanics of materials, surfaces and their interfaces. This topic supports transformative, basic research in materials, plasma, design and

processing to enable radical reductions in degradation, erosion, system weight with concurrent enhancements in performance. One route to achieving game-changing achievements in propulsion and plasma physics field is through the creation of hierarchical architectures that combine materials of different classes, scales, and properties to provide optimized, synergistic and tailorable performance.

## **II. Award Information**

It is anticipated the awards will be made in the form of grants to universities. Therefore, applications submitted as a result of this announcement will fall under the Department of Defense Grant and Agreement Regulations (DoDGARs). Multiple investigator / multiple institution proposals are encouraged. It is anticipated that each project selected will be funded in the range from \$100,000 to \$1,000,000 per year for a period of three to five years.

## **III. Eligibility Information**

- 1. Eligibility.** This competition is open only to, and full proposals are to be submitted only by, U.S. institutions of higher education (universities) including DoD institutions of higher education, with degree-granting programs in science and/or engineering. Proposals are encouraged from Historically Black Colleges and Universities and Minority Institutions (HBCU/MI). However, no funds are specifically allocated for HBCU/MI participation.
- 2. 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>). See ‘For Electronic Submission’ below.

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

Full Proposal format should be as follows:

- Paper Size - 8.5 x 11 inch paper
- Margins - 1 inch
- Spacing - single or double spaced
- Font - Times New Roman, 10 or 12 point
- Number of Pages - no more than twenty-five (25) single-sided pages of program description. NOTE: The SF 424 forms are not included in this 25 page limit. Pages in excess of the page limit will not be evaluated.

## **Full Proposal Submission: Content and Format of Applications**

**NOTE: Full Proposals may be submitted electronically via grants.gov or in hardcopy form, but not both.**

**(1) Advance Preparation for Electronic Submission** - Electronic 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 up to 21 days 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), registering with the credential provider, 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.) Go to [http://www.grants.gov/applicants/get\\_registered.jsp](http://www.grants.gov/applicants/get_registered.jsp). Use the Grants.gov Organization Registration Checklist at <http://www.grants.gov/section3/OrganizationRegCheck.pdf> to guide you through the process. To submit a proposal to through Grants.gov, applicants will need to download Adobe Reader. This small, free program will allow you to access, complete, and submit applications electronically and securely. To download a free version of the software, visit the following web site: [http://www.grants.gov/help/download\\_software.jsp](http://www.grants.gov/help/download_software.jsp). Consult [Grants.gov](http://www.grants.gov) to ensure you have the required version of Adobe Reader installed. Should you have questions relating to the registration process, system requirements, how an application form works, the submittal process or Adobe Reader forms, call Grants.gov at 1-800-518-4726 or [support@Grants.gov](mailto:support@Grants.gov) for updated information.

### **(2) Submitting the Application**

**(a) For Electronic Submission** – Application forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select “Apply for Grants”, and then follow the instructions. In the Grants.gov search function, enter the funding opportunity number for this announcement (BAA-AFOSR-2011-04). In the Search Results, click on the Opportunity title: Materials and Processes far from Equilibrium. 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 12.800, Air Force Defense Research Sciences Program. 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 ‘MATERIALSANDPROCESSES’. 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#3>.

**(b) For Hard Copy Submission** – For hard copy submission, the original proposal and 10 copies must be delivered to the attention of the program manager at the Air Force Office of Scientific Research at the following address:

AFOSR (Attn: Dr. Mitat Birkan, Dr. Ali Sayir, Dr. John Luginsland, or Dr Joycelyn Harrison )  
Air Force Office of Scientific Research  
875 North Randolph Street, Room 3112  
Arlington VA 22203

**(c) SF 424 Research and Related (R&R)**

The SF 424 (R&R) form must be used as the cover page for all electronic and hard copy proposals. No other sheets of paper may precede the SF 424 (R&R) for a hard copy proposal. A signed copy of the SF 424 (R&R) should be submitted with all hardcopy 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 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 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 2: The Applicant Identifier may be left blank.
- Field 3: The Date Received by State and the State Application Identified are not applicable to research.
- Field 7: Complete as indicated. If Small Business is selected, please note if the organization is Woman-owned and/or Socially and Economically Disadvantaged. 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 17: Choose ‘No’. Check 'Program is Not Covered By Executive Order 12372'.
- Attachments: All attachments to all Grants.gov forms must be submitted in PDF format (Adobe Portable Document Format). To convert attachments into PDF format, Grants.gov provides a list of PDF file converters at [http://www.grants.gov/resources/download\\_software.jsp](http://www.grants.gov/resources/download_software.jsp)

A signed copy of the SF 424 (R&R) should be submitted with all hardcopy proposals.

**(d) 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.

**(e) Research and Related (R&R) Other Forms** – The following other forms must be used for all electronic and hard copy proposals: R&R Senior/Key Person Profile form, R&R Project/Performance Site Locations form, R&R Other Project Information form and the R&R Budget form. The R&R Subaward Budget Attachment Forms is required when subawardees are involved in the effort. The SF-LLL form is required when applicants have lobbying activities to disclose. PDF copies of all forms may be obtained at the [grants.gov](http://grants.gov) website.

**(f) R&R 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 and each of the senior staff, provide a short biographical sketch and a list of significant publications (vitae) and attach it to the R&R Senior/Key Person Profile Form.

**(g) R&R Project/Performance Site Locations Form** – Complete all information as requested.

**(h) R&R Other Project Information Form** – Human Subject/Animal Use and Environmental Compliance.

**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](http://grants.gov), a completed OMB No. 0990-0263 form shall be attached in field 11 of the R&R Other Project Information Form. Refer any questions regarding human subjects to Stephanie Bruce of the AFOSR Directorate of Mathematics, Information and Life Sciences at [stephanie.bruce@afosr.af.mil](mailto:stephanie.bruce@afosr.af.mil).

**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. Refer any questions regarding human subjects to Stephanie Bruce of the AFOSR Directorate of Mathematics, Information and Life Sciences at [stephanie.bruce@afosr.af.mil](mailto:stephanie.bruce@afosr.af.mil).

**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 AFOSR legal staff at (703) 696-9705. 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.

**Abstract** - Include a concise (not to exceed 300 words) abstract that describes the research objective, technical approaches, anticipated outcome and impact of the specific research. In the header of the abstract include the program manager’s name and directorate who should receive the proposal for consideration and evaluation. Attach the Abstract to the R&R Other Project Information form in field 6.

**(i) R&R Other Project Information Form – Project Narrative Instructions**

Project Narrative – Describe clearly the research including the objective and approach to be performed keeping in mind the evaluation criteria listed in Section V 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 7.

Project Narrative - Statement of Objectives – Describe 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 incorporating 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 – Impact. Describe clearly the expected impact of the research on the university, the appropriate field of science or engineering, and/or the DoD. Additionally, address the transformative potential of the research on current technologies, systems, methods, approaches, etc. The benefit(s) to the DoD and the ability of the basic (6.1) research to be transitioned to applied (6.2) research may be addressed in this section as well.

Project Narrative - Research Effort – Describe in detail the research to be performed. State the objectives and approach and their relationship and comparable objectives in progress elsewhere. Additionally, state knowledge in the field and include a bibliography and a list of literature citations. Discuss the nature of the expected results. The adequacy of this information will influence the overall evaluation. Proposals for renewal of existing support must include a description of progress if the proposed objectives are related.

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 when 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 are currently engaged in research under other auspices, or expect to receive support from other agencies for research during the time proposed for AFOSR 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 present 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 possible and practicable, 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 of apparatus. If so, state who owns the existing apparatus.

Project Narrative – High Performance Computing Availability. Researchers that are supported under an AFOSR grant or contract, and meet certain restrictions, are eligible to apply for special accounts and participation in a full-spectrum of activities within the DOD high performance computing modernization program. This program provides, at no cost to the user, access to a range of state-of-the-art high performance computing assets and training opportunities that will allow the user to fully exploit these assets. Details of the capabilities of the program can be found at the following Internet address: <http://www.hpcmo.hpc.mil>. Researchers needing high

performance cycles should address the utilization of this program to meet their required needs. AFOSR program managers will facilitate the establishment of accounts awarded.

**(j) R&R Budget Form** – Estimate the total research project cost. Categorize funds by year and provide separate annual budgets for projects lasting more than one year. 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 or cooperative agreement. Should a grant be awarded AFOSR will make payments to educational and nonprofit recipients 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 and Non-profit 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.

It is anticipated that the awards will have an initial performance period of six months with two up to 4 twelve month increments and one final 6 month increment, assuming a 01-Apr-2011 effective date. However, the start date is subject to negotiations. Individual budgets should be provided for each period.

### **3. Other Submission Requirements**

Submission by facsimile, e-mail or other electronic media will not be accepted. The proposal must be complete and self-contained to qualify for review.

### **4. Application Receipt Notices.**

**a. For Electronic Submission** - 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.

**A proposal received after the deadline is "late" and will not be considered for an award. Proposals received after 4:00 PM EDT on 7 JAN 2011 are considered late and will not be considered.**

**b. For Hard Copy Submission** – An applicant that submits a hard copy proposal to AFOSR will receive an email from the agency approximately ten days after the proposal due date to acknowledge receipt of the proposal and provide the agency’s assigned tracking number. The email is sent to the authorized representative for the applicant institution. A hard copy proposal received at an agency’s listed mailing address after the deadline is “late” and will not be considered for an award, except for cases in which there is acceptable evidence to establish that the proposal:

- a. Was delivered to the agency and was under the agency’s control prior to the deadline: or
- b. Was sent to the agency’s listed mailing address by the U.S. Postal Service Express Mail three or more business days prior to the date specified for the receipt of the proposals. The term “business days” excludes weekends and U.S. federal holidays.

**Both the electronic and hard copy proposers will be notified by letter or e-mail that the proposal has been received by AFOSR approximately ten days after the due date.**

**5. Submission Dates and Time** – Full proposals must be received at AFOSR by 4:00 PM, EDT, 7 JAN 2011, whether submitted electronically or in hard copy.

For electronic submission, the proposal must be validated by the grants.gov to indicate that the grants.gov has received and kept the submission. Should the site of grants.gov not be operational on the due date and is unable to receive the proposal, the deadline is extended to the same time of the first day when the site is in operation.

For hard copy submission, in case the operation of the agency is interrupted and unable to receive the proposal, the deadline is extended to the same time of the first day when the agency is in operation.

Proposals received late will **not** be considered for the Materials and Processes far from Equilibrium program competition.

## **V. Application Review Information**

Proposals submitted under this BAA are evaluated through a peer or scientific review process. Grant/assistance instrument awards will be evaluated using merit-based competitive procedures according to DoDGARS 32 C.F.R Sec 22.315. Proposals may be evaluated by program managers at EOARD/AOARD and the appropriate AFRL Technology Directorates. 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.

## **1. Evaluation Criteria**

Proposals shall be evaluated under two principal selection criteria, of equal importance, as follows:

1. Technical merits of the proposed research and development.
2. Potential relationship of the proposed research and development to the Department of Defense missions.

Additional administrative information regarding submission of applications is contained in Section VIII below. The technical and cost information will be analyzed simultaneously during the evaluation process.

## **2. Review Process**

Full proposals will be evaluated by a scientific review process which may include personnel at the appropriate AFRL technology Directorates or non-government evaluators retained by AFOSR.

## **3. Selection Process**

Full proposals will be selected on a competitive basis by AFRL personnel after consideration of the recommendation of the scientific reviews.

## **VI. Award Administration Information**

1. Award Notices.

Should your proposal be selected for award, the principal investigator will receive a letter from the Technical Directorate stating this information. This is not an authorization to begin work. Your business office will be contacted by the grant or contracting officer to negotiate the terms of your award.

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.

Additional deliverables may be required based on the research being conducted.

## **VII. Agency Contacts**

Should you have questions about a technical research area, contact the program managers Dr Mitat A. Birkan (703-696-7234, [mitat.birkan@afosr.af.mil](mailto:mitat.birkan@afosr.af.mil)), Dr Ali Sayir (703-696-7236,

[ali.sayir@afosr.af.mil](mailto:ali.sayir@afosr.af.mil)), Dr John Luginsland (703-696-8481, [john.luginsland@afosr.af.mil](mailto:john.luginsland@afosr.af.mil)), Dr Joycelyn Harrison (703-696-6225, [joycelyn.harrison@afosr.af.mil](mailto:joycelyn.harrison@afosr.af.mil)) for submission of a proposal. Should you have questions about the BAA or procedures for submission of a proposal, contact [afosr.baa@afosr.af.mil](mailto:afosr.baa@afosr.af.mil).

### **VIII. Other 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 indicated in paragraph IV.2. above.
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. The AFOSR website is available at <http://www.wpafb.af.mil/AFRL/afosr/>.
6. Responses should reference Broad Agency Announcement BAA-AFOSR-2011-04.
7. Prospective awardee 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.
8. AFOSR expects 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.”

9. Marking of Proposals - AFOSR is seeking proposals that do not contain proprietary information. If proprietary information is submitted, 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 the protective legend 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 it 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.

#### 10. Federal Awardee Performance and Integrity Information System (FAPIS)

Potential offerors should be aware that as of April 2010 (SAF/AQC Memo, "Contractor Responsibility (EPLS and FAPIS Requirements) awardees of contracts or recipients of grants have been required to update the information in the Federal Awardee Performance and Integrity Information System (FAPIS) on a semi-annual basis, throughout the life of the agreement, by entering the required information in the Central Contractor Registration database at <http://www.ccr.gov> (see 52.204-7). Contract clauses and Grant articles provide specific information on this requirement.

#### 11. Additional Subcontract /Subaward Reporting Requirements

The Federal Funding and Transparency Act and 22 September 2010 DDR&E memo, "New Reporting required Under DoD Grant and Cooperative Agreements" require that as of 01 October 2010 awardees of contracts and recipients of grants have been required to report Executive Compensation and First-Tier Subcontract/Subrecipient Awards for any contract or grant valued at \$25,000 or more excluding classified contracts or contracts/grants with

individuals. Two articles have been added to all awards as a consequence of this requirement. See below:

**CCR Registration:** Unless exempted by 2 CFR 25.110 all offerors must:

- (1) Be registered in the Central Contractor Registration (CCR) prior to submitting an application or proposal;
- (2) Maintain an active CCR registration with current information at all times during which it has an active Federal award or an application or proposal under consideration by an agency; and
- (3) Provide its DUNS number in each application or proposal it submits to the agency.

### **Reporting Subawards and Executive Compensation.**

#### *a. Reporting of first-tier subawards.*

1. *Applicability.* Unless you are exempt as provided in paragraph d. of this award term, you must report each action that obligates \$25,000 or more in Federal funds that does not include Recovery funds (as defined in section 1512(a)(2) of the American Recovery and Reinvestment Act of 2009, Pub. L. 111–5) for a subaward to an entity (see definitions in paragraph e. of this award term).

#### *2. Where and when to report.*

i. You must report each obligating action described in paragraph a.1. of this award term to <http://www.fsrs.gov>.

ii. For subaward information, report no later than the end of the month following the month in which the obligation was made. (For example, if the obligation was made on November 7, 2010, the obligation must be reported by no later than December 31, 2010.)

3. *What to report.* You must report the information about each obligating action that the submission instructions posted at <http://www.fsrs.gov> specify.

#### *b. Reporting Total Compensation of Recipient Executives.*

1. *Applicability and what to report.* You must report total compensation for each of your five most highly compensated executives for the preceding completed fiscal year, if—

i. the total Federal funding authorized to date under this award is \$25,000 or more;

ii. in the preceding fiscal year, you received—

(A) 80 percent or more of your annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards); and

(B) \$25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards); and

iii. The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To

determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>.)

2. *Where and when to report.* You must report executive total compensation described in paragraph b.1. of this award term:

- i. As part of your registration profile at <http://www.ccr.gov>.
- ii. By the end of the month following the month in which this award is made, and annually thereafter.

c. *Reporting of Total Compensation of Subrecipient Executives.*

1. *Applicability and what to report.* Unless you are exempt as provided in paragraph d. of this award term, for each first-tier subrecipient under this award, you shall report the names and total compensation of each of the subrecipient's five most highly compensated executives for the subrecipient's preceding completed fiscal year, if—

i. in the subrecipient's preceding fiscal year, the subrecipient received—

(A) 80 percent or more of its annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards); and

(B) \$25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts), and Federal financial assistance subject to the Transparency Act (and subawards); and

ii. The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>.)

2. *Where and when to report.* You must report subrecipient executive total compensation described in paragraph c.1. of this award term:

- i. To the recipient.
- ii. By the end of the month following the month during which you make the subaward. For example, if a subaward is obligated on any date during the month of October of a given year ( *i.e.*, between October 1 and 31), you must report any required compensation information of the subrecipient by November 30 of that year.

d. *Exemptions*

If, in the previous tax year, you had gross income, from all sources, under \$300,000, you are exempt from the requirements to report:

- i. Subawards,  
and
- ii. The total compensation of the five most highly compensated executives of any subrecipient.

e. *Definitions.* For purposes of this award term:

1. *Entity* means all of the following, as defined in 2 CFR part 25:

- i. A Governmental organization, which is a State, local government, or Indian tribe;
- ii. A foreign public entity;
- iii. A domestic or foreign nonprofit organization;
- iv. A domestic or foreign for-profit organization;
- v. A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.

2. *Executive* means officers, managing partners, or any other employees in management positions.

3. *Subaward*:

- i. This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which you received this award and that you as the recipient award to an eligible subrecipient.
- ii. The term does not include your procurement of property and services needed to carry out the project or program (for further explanation, see Sec. \_\_ .210 of the attachment to OMB Circular A-133, "Audits of States, Local Governments, and Non-Profit Organizations").
- iii. A subaward may be provided through any legal agreement, including an agreement that you or a subrecipient considers a contract.

4. *Subrecipient* means an entity that:

- i. Receives a subaward from you (the recipient) under this award; and
- ii. Is accountable to you for the use of the Federal funds provided by the subaward.

5. *Total compensation* means the cash and noncash dollar value earned by the executive during the recipient's or subrecipient's preceding fiscal year and includes the following (for more information see 17 CFR 229.402(c)(2)):

- i. *Salary and bonus*.
- ii. *Awards of stock, stock options, and stock appreciation rights*. Use the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year in accordance with the Statement of Financial Accounting Standards No. 123 (Revised 2004) (FAS 123R), Shared Based Payments.
- iii. *Earnings for services under non-equity incentive plans*. This does not include group life, health, hospitalization or medical reimbursement plans that do not discriminate in favor of executives, and are available generally to all salaried employees.
- iv. *Change in pension value*. This is the change in present value of defined benefit and actuarial pension plans.
- v. *Above-market earnings on deferred compensation which is not tax-qualified*.
- vi. Other compensation, if the aggregate value of all such other compensation (e.g. severance, termination payments, value of life insurance paid on behalf of the employee, perquisites or property) for the executive exceeds \$10,000.

## KEY POINTS

- The restriction on payment of indirect costs applies to all FY2008, FY2009, FY2010 and/or FY2011 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).