

**1. Agency Name**

The Air Force Office of Scientific Research (AFOSR)

**2. Funding Opportunity Title**

Air Force Fiscal Year 2010 High Energy Laser Multidisciplinary Research Initiative (HEL MRI)

**3. Announcement Type**

This is the initial announcement.

**4. Funding Opportunity Number**

AFOSR-BAA-2010-2

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

12.800 - Air Force Defense Research Sciences Program

**6. Response Dates**

Proposals must be received by 4:00 PM Eastern Daylight Time (EDT), 20 APR 2010

**7. Additional Overview**

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 AFRL, universities, and industry laboratories to ensure the transition of research results to support USAF needs. Using a carefully balanced research portfolio, research managers seek to create revolutionary scientific breakthroughs enabling the Air Force and U.S. industry to produce world-class, militarily significant, and commercially valuable products.

To accomplish this task, AFOSR, in conjunction with the High Energy Laser - Joint Technology Office (HEL-JTO) is soliciting proposals for the Fiscal Year 2010 High Energy Laser Multidisciplinary Research Initiative (MRI). Proposals will be considered in the topics of novel components for high energy lasers, ultra-short, ultra-intense pulse lasers and laser effects, laser interactions, and materials, devices, and techniques for high average power solid-state lasers. The details of these topics are described in Section I, Funding Opportunity Description.

AFOSR is seeking unclassified, fundamental research proposals that do not contain proprietary information. Additionally, proposals should have a potential to transition to applied research at the end of the MRI performance period.

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.

This announcement will remain open until 20 APR 2010, 4:00 pm (EDT). Proposals may be submitted at any time prior to this closing date. However, proposal evaluation and other selection processes will not commence until this BAA has been officially closed at the aforementioned time. Late proposals will not be considered.

AFOSR will not issue paper copies of this announcement. AFOSR, or any of the other organizations participating in this joint BAA, will provide no funding for direct reimbursement of proposal development costs. Technical and cost proposals, or any other material, submitted in response to this BAA will not be returned.

## **8. Award Information**

This BAA MRI will be executed by the Air Force Office of Scientific Research (AFOSR) on behalf of the High Energy Laser - Joint Technology Office (HEL-JTO). Universities are to be the primary awardees of the grants and must perform at least 60% of the proposed work effort. Industrial partners are permitted to respond as sub-recipients only and they may not contribute more than 40% to the overall effort or receive more than 40% of the total granted funds. Only proposals submitted directly by universities will be considered for award.

There are 4 major thrust areas described here for the Fiscal Year 2010 competition for the HEL MRI, sponsored by the HEL-JTO and the Office of the Deputy Undersecretary of Defense for Science and Technology (DUSD (S&T)). The primary focus of these awards are to enhance the capabilities of the US institutions of higher education to perform basic science and engineering research related to lasers, optics, laser interaction physics and advanced concepts necessary for national defense applications.

The specific research topic area descriptions are provided below.

## **I. Funding Opportunity Description**

### **Topic #1: Novel Components for High Energy Lasers**

Proposals for this topic should address new, innovative concepts for components in high-energy laser systems, such as mirrors, beam splitters or combiners, and beam shaping and steering devices. Novel possibilities might include, but are not restricted to, reflectors based on density gradients, holographic optical elements, or concepts involving nano-patterned materials or metamaterials. In all cases adequate consideration should be given to the impact of local high-field and high-power effects within such components and structures for the high-energy laser application being addressed.

### **Topic #2: Ultra-Short, Ultra-Intense Pulse Lasers and Laser Effects**

Proposals for this topic should address research advances in the generation, propagation, or interactions of ultra-short, ultra-intense laser pulses (*extreme light*). Femtosecond pulses at the petawatt level (or higher) are of interest, at moderate to high repetition rates. Studies of the interaction of extreme light with gaseous and solid materials are of interest, especially as a source

of high quality x-ray, electron, and heavy particle beams. The use of such beams to generate x-rays via inverse Compton Scattering or free electron laser interactions is another topic of interest, as is study of the use of such x-rays for applications in directed energy or other DOD concerns. New theoretical and experimental studies of propagation of extreme light are of interest, including beam trapping effects in the atmosphere.

**Topic #3: Laser Interactions**

Proposals should address fundamental laser interaction physics research, especially the investigation of the contribution of external influences on the removal of material during laser irradiation. The phenomenology of material removal in a benign environment is well known for a large variety of target materials (metals, composites, plastics, polymers, energetic materials, etc). Understanding the physics of external influences on the material removal process will significantly enhance the ability to perform analysis. This task is to develop a physics model of the influence of external stimulus on the laser/material interaction. The specific external influences to be investigated are: 1) air flow and 2) oxidation and char physics.

In the case of air flow, technical issues include:

- Effect of air flow velocity, pressure, and temperature on the melt removal process
- Effect of melt removal on the coupling of laser energy to the material
- Effect of air flow on exothermic reactions

In the case of oxidation and char physics, technical issues include:

- Identifying and testing potential measurement techniques that would determine change in material properties
- Analyzing these techniques to develop first order accuracy estimates
- Developing an oxidation and/or char model as a function of material phase, temperature, irradiance level, and target roll rate
- Developing a functional relationship between material emissivity and oxidation and/or char rate

**Topic #4: Materials, Devices, and Techniques for High Average Power Solid-State Lasers**  
Proposals should address exploration of innovations in devices, materials, and techniques for solid-state lasers, including bulk and fiber lasers and combinations and arrays of them.

For bulk solid-state lasers areas of interest include, but are not restricted to, new techniques for making low-loss ceramic host materials with spatially varying index and dopant concentrations, including advantageous non-isotropic host materials. Techniques for producing less heat and for better heat removal are of interest, as are better pumping techniques and achieving higher overall efficiency.

For fiber lasers, proposals should address increasing the power of individual fibers and fiber combinations. Suggested subjects include, but are not restricted to, novel waveguide structures or materials to reduce nonlinear effects, devices or techniques to yield increased pump brightness, and robust and compact devices for active or passive coherent or incoherent beam combining. Since scaling capability is a priority interest, issues such as inevitable nonlinear and thermal issues, as well as issues arising from particular features of the design or method, must be addressed.

Of particular interest for high average power solid-state lasers are devices which have the potential for multiple applications and which emphasize energy and cost efficiency, and mechanical, thermal, and optical robustness.

## **II. Award Information:**

Through this HEL MRI competition, AFOSR plans to make approximately 5 awards for FY 2010, subject to the availability of funds. The anticipated types of awards will be grants. The estimated value of each award is approximately \$500K per year for three (3) years with an additional two (2) year option upon review. Funding for years four (4) and five (5) are contingent upon completion of a satisfactory third year oral review. A multi-government agency panel composed of members from AFOSR, JTO, the Office of Naval Research and the Army Research Office will assess the third year reviews to determine the satisfactory level of each grant. Exceptional proposals will be considered individually for higher funding levels.

## **III. Eligibility Information**

**1. Eligible Applicants** - The individual award will be made to a U.S. institution of higher education where the principal investigator is employed on a full-time basis and holds a regular position. Researchers working at the Federally Funded Research and Development Centers and Government Laboratories will not be considered for the HEL MRI competition as the principal investigator, though they may be involved in subcontract awards. FFRDCS may be eligible in accordance with FAR 17.504(e), 35.017(a)(2) and DFARS 235.017. The principal investigator must be a U.S. citizen, national, or permanent resident. Foreign Universities and research institutions may only be involved in subcontract awards.

**2. Cost Sharing** - Cost Sharing is not required.

**3. Other** - An accompanying letter from the institution shall be submitted to indicate that the applicant will be considered for a regular position, if he/she has a short-term appointment. Failure to submit this letter with the proposal will deem the offeror to be non-responsive and will not be considered for award.

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

**1. Address to Request Application Package** - This announcement may be accessed from the internet at AFOSR's web site, <http://www.wpafb.af.mil/AFRL/afosr/>. Click on "Need Funding" link and then "Broad Agency Announcement." Solicitation title: High Energy Laser Multidisciplinary Research Initiative (HEL MRI) 2010. Also found at: <http://www.grants.gov/>. See 3(c) Electronic Submission for access instructions.

**2. 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.

**3. Content and Form of Application Submission** – This is a One-Step BAA as defined in the AFRL BAA Guide for Industry at <http://www.wpafb.af.mil/library/factsheets/factsheet.asp?id=6790>. There will be a proposal submission process for proposals being considered for funding. Prospective awardees should submit a full proposal electronically or in hard copy form no later than 4:00 PM (EDT) 20 APR 2010.

## **Full Proposal Submission**

The proposal may be submitted either electronically or in hard copy form, but not both. All proposers must include the SF 424 (R&R) form as the cover page. Unnecessarily elaborate brochures, reprints or presentations beyond those sufficient to present a complete and effective proposal are not desired.

### **(a) Full Proposal Format**

- Paper Size – 8.5 x 11 inch paper
- Margin – 1 inch
- Spacing – single
- Font – Times New Roman, 10, 11, or 12 point
- Page Limit – no more than 25 single-sided pages. The grants.gov forms, abstract, budget, curricular vitae, references, letters of support (if any), and contract certifications, if required are excluded from the page limitation.
- Attachments – Submit in **PDF** format (Adobe Portable Document Format)
- Copies of hardcopy submissions – one original and 5 copies, plus an electronic disc copy
- Content as described below

### **(1) Advanced Preparation for Electronic Submission**

Electronic proposals must be submitted through Grants.gov. There are several onetime 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 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 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) 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: **AFOSR-BAA-2010-2**. You can also search for the CFDA Number 12.800, Air Force Defense Research Sciences Program. In the **Search Results** click on the Opportunity title: **High Energy Laser Multidisciplinary Research Initiative (HEL MRI)**. 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.

**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#3>.

**(b) Hard Copy Submission**

One original and 5 copies and one electronic copy (CD-ROM in Microsoft Word, or Excel, or PDF format) of the proposal should be submitted to the Agency contact in Section VII.

AFOSR/RSE  
Attn: Dr. John R. Hottle  
875 N Randolph Street, Suite 325, Rm 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)

**(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 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 is for evaluation of the qualifications of those persons who will perform the proposed research. Provide the principal investigator's eligibility information including the date PhD received (or equivalent degree) and citizenship (national or permanent resident status).

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, 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 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. 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 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 applicable AFOSR Program Manager. 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 500 words) abstract that describes the research objective, technical approaches, anticipated outcome and impact of the specific research. In the header of the abstract, please include the Title and Topic Number and Topic Title as found in section II of this BAA. 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 - 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 – Impact.** Describe clearly the expected impact of the research on the university, high energy laser field 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 – Principal Investigator (PI) Time.** PI time is required. List an 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. The awards will have an initial performance period of 36 months with one 24 month option. The option will be exercised at the discretion of the AFOSR and based off of successful completion of a committee review and their favorable recommendation. The effective start date is assumed to be on or around 18 AUG 2010. However, the start date is subject to negotiations. Individual budgets should be provided for each period. 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 non-profit 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. Please submit a quarterly spending plan that will match the anticipated needs of the research. Estimates should consider major outlays for materials, equipment and other costs. Required funding during the academic year and summer will vary based on proposal research. Attach the budget justification and/or spending profile to Section K of the R&R Budget form.

#### **(4) 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.

## **(5) 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 20 APR 2010 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.**

**6. Submission Dates and Time** – Full proposals must be received at AFOSR by 4:00 PM, EDT, 20 APR 2010, 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 HEL MRI 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, the Joint Technologies Office, the Office of Naval Research, the Army Research Office 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. Any exception to these procedures should be directed to the Business POC identified in Section VII herein. Proposals shall be evaluated under two principal selection criteria, of equal importance, as follows:

1. Technical merits of the proposed research and development; and
2. Potential relationship of the proposed research and development to DoD missions.

Other evaluation criteria used in the technical reviews, which are of lesser importance than the principal selection criteria and of equal importance are:

1. The proposer's and associated personnel's record of previous performance.
2. The proposer's, principal investigator's, team leader's, or key personnel's qualifications, capabilities, related experience, facilities, or techniques or a combination of these factors that are integral to achieving DoD objectives.
3. The realism and reasonableness of proposed costs.
4. The likelihood or potential of the research transitioning to applied research, i.e. 6.1 to 6.2 researches.
5. The proposer's plan for establishing collaborations with scientific organizations that transition research findings to applications will be used to assess this criteria. Particularly U.S. industrial organizations, DoD laboratories, and other DoD organizations that perform research and development for defense applications are encouraged to be involved

in this process. These collaborations can include, but are not limited to: funding via subcontract awards, exchange of technical ideas and/or exchange of scientific related personnel to further advance the technology transition.

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.

Proposals may be submitted for one or more topics or for a specific portion of one topic. A proposer may submit separate proposals on different topics or different proposals on the same topic. The U.S. Government does not guarantee an award in each topic 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.

## **VI. Award Administration Information**

**1. Award Notices** – Successful offerors will be announced on or about 4 JUN 2010. The Principal Investigator of a successful proposal will receive a notice, by letter or e-mail, on or about 1 JUL 2010. For those proposals being recommended for an award, the notification should not be regarded as an authorization to commit or expend funds. Proposals selected for funding as grants may include charging to awards of 90 days pre-award costs at the recipients own risk and to the extent that the recipient organization allows, and only after authorization has been provided by the AFOSR Business Office. Negotiations may result in funding levels that are less than proposed. Only an award document signed by a Government Grants Officer will bind the Government. Your business office will be contacted by the grants-officer to negotiate the terms of your award.

**2. Reporting Requirements** – Grants and cooperative agreements typically require annual and final technical reports, financial reports, and final patent reports. Interim reports and briefings will be required on a monthly, quarterly and annual basis. Copies of publications and presentations should be submitted along with the technical reports. At least once per year, a review meeting will be held, at which point the PI and other participating members of the MRI will be required to orally present and review their scientific findings as they pertain to the HEL MRI. The times and dates will be specified by the program manager in charge of the award topic and may be jointly held with similar reviews at the discretion of the program manager. Upon completion of the third (3<sup>rd</sup>) year, a formal review and assessment of the MRI award will be performed. The findings of this review and assessment will be used to determine whether or not to grant the second (2<sup>nd</sup>) option proposed within the MRI. Additional deliverables may be required based on the research being conducted.

## **VII. Agency Contact(s)**

Address questions to:

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### **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 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 grants officers are legally authorized to bind the government.

5. AFOSR documents are available on the AFOSR website at <http://www.wpafb.af.mil/AFRL/afosr/>.
6. Responses should reference Broad Agency Announcement AFOSR-BAA-2010-2.
7. 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.
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. If the proposal is not selected for the High Energy Laser Multidisciplinary Research Initiative, it may be reviewed and re-evaluated under the AFOSR-BAA-2010-1 unless it is stated that this proposal is for the High Energy Laser Multidisciplinary Research Initiative only. However, given the size of these programs, resubmission of a reduced proposal may be requested for re-evaluation purposes.
10. Indirect Cost Limitation for Basic Research Awards Notices:

The purpose of this notice is to make potential offerors aware of the Indirect Cost Limitation for Basic Research Awards originally set forth in Section 8115 of the Department of Defense Appropriations Act, 2008 (P.L. 110-116) and subsequently included in the 2009 and 2010 DoD Appropriations Acts. The Indirect Cost Limitation of the DoD Appropriations limits payments of negotiated indirect cost rates on contracts, grants, and cooperative agreements (or similar arrangement), which are funded with FY2008, FY2009 and/or FY2010 Basic Research appropriations and are awarded on or after 14 November 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 FY2008, FY2009 and/or FY2010 Basic Research appropriations.

## ***KEY POINTS***

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