PROGRAM ANNOUNCEMENT

Fiscal Year 2009 Young Investigator Research Program

AFOSR-BAA-2008-4

PROPOSAL DEADLINE:
4:00 p.m. Eastern Daylight Time
Tuesday, 22 July 2008

OVERVIEW INFORMATION

The Young Investigator Research Program supports young scientists and engineers in Air Force relevant disciplines and is designed to promote innovative research in science and engineering. The awards foster creative basic research in science and engineering, enhance early career development of outstanding young investigators, and increase opportunities to recognize Air Force mission and challenges in science and engineering.

1. **Agency Name**

The Air Force Office of Scientific Research (AFOSR)

2. **Funding Opportunity Title**

Air Force Fiscal Year 2008 Young Investigator Research Program

3. **Announcement Type**

This is the initial announcement.

4. **Funding Opportunity Number**

AFOSR-BAA-2008-4

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

12.800 - Air Force Defense Research Sciences Program

6. **Response Dates**

Proposals must be received by 4:00PM Eastern Daylight Time, 22 July 2008

I. Funding Opportunity Description

The AFOSR's Young Investigator Research Program (YIP) is to support scientists and engineers who have received Ph.D. or equivalent degrees in the last five years (on or after 1 May 2003) and who show exceptional ability and promise for conducting basic research. The objective of this program is to foster creative basic research in science and engineering, enhance early career development of outstanding young investigators, and increase opportunities for the young investigators to recognize Air Force mission and the related challenges in science and engineering.

Proposals addressing the research areas of interest for the Air Force Research Laboratory will be considered. The basic research areas of current interest are available on-line at the AFOSR web site:

http://www.wpafb.af.mil/AFRL/afosr/

Select "Research Interests of the Air Force Office of Scientific Research (AFOSR-BAA-2008-1)

For detailed information regarding technical goals, potential applicants are advised to refer to the announcement cited above and may contact AFOSR program managers listed therein to explore mutual interests before submitting proposals.

II. Award Information

Through this YIP competition, AFOSR plans to make approximately 25 awards for FY 2009, subject to the availability of funds. The anticipated types of awards will be grants or contracts. The estimated value of each award is at the $100K level per year for three years. Exceptional cases will be considered individually based on the proposed effort. In FY 2008, 29 proposals were funded totaling $9.5M for the three-year period.

III. Eligibility Information

1. Eligible Applicants – The individual award will be made to a U.S. institution of higher education, industrial laboratory, or non-profit research organization 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 YIP competition. The principal investigator must be a U.S. citizen, national, or permanent resident who has received a Ph.D. or equivalent degrees in the last five years as indicated in Section I above.

2. Cost Sharing – Cost Sharing is not required.

3. Other – An accompanying letter from the institution must be submitted to indicate that the applicant will be considered for a regular position, if he/she has a short-term appointment.

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: Young Investigator Research Program 2009. Also found at: www.grants.gov. See 3(c) Electronic Submission for access instructions.

2. Marking of Proposals - Every effort should be made 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. The proposer must mark the proposal with a protective legend found in FAR Part 15.609, Limited Use of Data, (http://farsite.hill.af.mil/) modified to permit release to outside evaluators retained by AFOSR, if protection is desired for proprietary or confidential information.

3. Content and Form of Application 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) 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 20 single-sided pages. The grants.gov forms, abstract, budget, curricular vitae, 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

(b) 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. 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. 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 for updated information.

(c) 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-2008-4**. 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: **Research Interests of the Air Force Office of Scientific Research**. 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.

(d) Hard Copy Submission

One original and 5 copies and one electronic copy (on a 3.5 inch Diskette or CD-ROM in Microsoft Word, or Excel, or PDF format) of the proposal should be submitted to the Agency contact in Section VII.

(e) 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 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 in a red box 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

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

(f) 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.

If it is determined a contract is the appropriate vehicle, AFOSR will request additional documentation from prospective awardees. For contract awards, prospective contractors shall complete electronic annual representations and certifications at http://www.bpn.gov/orca. The representations and certifications shall be submitted to ORCA as necessary, but updated at least annually, to ensure they are current, accurate, and complete. These representations and

certifications are effective until one year from date of submission or update to ORCA. In addition to the ORCA representations and certifications, prospective contractors shall complete the AFOSR Contract Certification which can be located at http://www.wpafb.af.mil/shared/media/document/AFD-070820-024.doc.

(g) 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.

(h) 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. 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.

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

(j) 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://apply.grants.gov/apply/forms/sample/ProtectionofHumanSubjects-V1.1.pdf Refer any questions regarding human subjects to the AFOSR Directorate of Mathematics, Information and Life Sciences at (703) 696-7720.

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 animal

subjects to the AFOSR Directorate of Mathematics, Information and Life Sciences at (703) 696-7720.

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 please include (if known) the program manager's name(s) and directorate to receive the proposal for consideration and evaluation. To assist AFOSR in directing the proposal, please reference the list of research interests cited on the AFOSR website at http://www.wpafb.af.mil/library/factsheets/factsheet.asp?id=8973.** Attach the Abstract to the R&R Other Project Information form in field 6.

(k) 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 – 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.

(l) R&R Budget Form - Estimate the total research project cost. It is anticipated that the awards will have an initial performance period of twelve months with two twelve month options,

assuming a 1 January 2009 effective date. 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. (http://www.wpafb.af.mil/library/factsheets/factsheet.asp?id=9388).

(m) 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.

(n) Application Receipt Notices

i. 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. A proposal received after the deadline is "late" and will not be considered for an award. 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.

ii. 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, if one is specifically listed in the announcement, 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.

4. Submission Dates and Time – Full proposals must be received at AFOSR by 4:00 PM, EDT, 22 July 2008, 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 had 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 young investigators research program competition.

V. Application Review Information

Criteria - Proposals under this Broad Agency Announcement (BAA) will be evaluated through a peer or scientific review process, and selected for award on a competitive basis according to DoD 3210.6-R, DoD Grant and Agreement Regulations (DoDGARS), Section 22.315 or Public Law 98-369, Competition in Contracting Act of 1984, 10 U S C 2361, and 10 U S C 2374. All proposals will be evaluated under the following two primary criteria, of equal importance, as follows:

(a) The scientific and technical merits of the proposed research.

(b) The broader impacts of the proposed research (e.g., potentially to advance technology or/and to contribute to AF mission)

Other evaluation criteria used in the technical reviews, which are of lesser importance than the

primary criteria and of equal importance to each other, are as follows:

(c) The proposer's qualification to conduct the proposed research.

(d) How well does the proposed activity promote teaching, training, or/and technology transitioning/transfer.

(e) The realism and reasonableness of proposed costs.

VI. Award Administration Information

1. Award Notices – The Award winners will be announced on or about 22 October 2008. Principal Investigator of successful proposals will receive a notice, by letter or e-mail, on or about 29 October 2008. 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, at the recipient's own risk and to the extent that the recipient organization allows, charging to awards of 90 days pre-award costs. Negotiations may result in funding levels that are less than proposed. Only an award document signed by a Government Contracting/Grants Officer will bind the Government. Your business office will be contacted by the grant or contracting 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. Contacts typically require annual and final technical and patent reports. Copies of publications and presentations should be submitted along with the technical reports.
Additional deliverables may be required based on the research being conducted.

VII. Agency Contact(s)

Address questions to:

Dr. Spencer Wu
Telephone Number: (703) 696-7315
Facsimile Number: (703) 696-7320
Email: Spencer.wu@afosr.af.mil

Mail to:

Air Force Office of Scientific Research
ATTN: Dr. Spencer Wu - PIE
875 North Randolph Street
Suite 325, Room 3112
Arlington, Virginia 22203-1768

VIII. Additional Information

If the proposal is not selected for the Young Investigator Research Program Award, it may be reviewed and re-evaluated under the AFOSR-BAA-2008-1 unless it is stated that this proposal is for the Young Investigator Research Program only.