

BROAD AGENCY ANNOUNCEMENT
USAFA-BAA-2009-1
Research Interests of the United States Air Force Academy (USAFA)

TWO-STEP CALL ANNOUNCEMENT (CALL) 0008

FEDERAL AGENCY NAME: K-12 STEM (Science, Technology, Engineering and Mathematics) Outreach & Research Center at the United States Air Force Academy

BROAD AGENCY ANNOUNCEMENT TITLE: Research Interests of the United States Air Force Academy

BROAD AGENCY ANNOUNCEMENT NUMBER: USAFA-BAA- 2009-1

BROAD AGENCY ANNOUNCEMENT TYPE: This is an initial announcement.

CATALOG OF FEDERAL DOMESTIC ASSISTANCE (CFDA) NUMBER: 12.800

CALL ANNOUNCEMENT TITLE: STEM Outreach to K-12 Schools in Southern Colorado

CALL ANNOUNCEMENT (CALL) NUMBER: 0008

TECHNICAL POINT OF CONTACT: The technical point of contact for this call as outlined in the baseline BAA, Section 1 - Funding Opportunity Description (a)(14), is:

Dr. William Crisler
Director, USAF Academy K-12 STEM Outreach & Research Center
PH (719) 333-4317, FAX (719) 333-4013
E-mail: william.crisler@usafa.edu

CONTRACTING POINTS OF CONTACT: The contracting points of contact for this call are:

Grants/Agreements Specialist:

Brittany Henry, 10 CONS/LGCC, United States Air Force Academy, CO
Phone: 719-333-8930
Email: Brittany.Henry@us.af.mil

Grants/Agreements Officer:

Jeff Fugate, 10 CONS/LGCC, United States Air Force Academy, CO
Phone: 719-333-3907
Email: Jeffrey.Fugate@us.af.mil

BACKGROUND: The US Air Force Academy (USAFA) and the Department of Defense (DoD) intend to investigate models of K-12 STEM outreach to increase nationwide enrollment in undergraduate engineering and basic science majors, commonly referred to as Science,

Technology, Engineering and Mathematics (STEM). Model constituents may include (but not necessarily be limited to) STEM content delivery systems, organizational and teaming arrangements, pre-packaged content and infra-structure (e.g., national student design challenges, project-based learning activities, etc.), and assessment methods. Research revolves around development, extension, and assessment of K-12 student motivational experiences, teacher training, and project-based design competitions and learning activities. USAFA efforts are focused on existing programs in the local community and supporting emerging STEM outreach programs across the United States in collaboration with professional societies, industry associations, and STEM-heavy employers like NASA.

REQUIREMENT DESCRIPTION: The United States Air Force Academy is soliciting white papers/proposals for research under Section I - Funding Opportunity Description (a)(14) of the Broad Agency Announcement USAFA-BAA-2009-1 posted on 30 September 2009 specifically for “STEM outreach to K-12 schools in southern Colorado” in accordance with the attached Research Considerations document.

THIS WILL BE A TWO-STEP CALL ANNOUNCEMENT:

FIRST STEP: WHITE PAPERS

WHITE PAPER FORMAT: White papers submitted in response to this call should conform to the requirements found in USAFA-BAA-2009-1, section IV c.1 and also include a brief resume of the principle investigator and a rough order of magnitude of cost. Papers should not exceed four pages describing research objectives, approach, past performance, and qualifications of proposed personnel.

WHITE PAPER DUE DATE AND TIME: The due date for white papers submitted in response to this call is no later than 1159 PM MDT on 20 July 2012. *White papers received after the due date and time shall be governed by the provisions of FAR 52.215-1(c)(3).*

WHITE PAPERS ARE TO BE E-MAILED TO:

10 CONS/LGCC

Attn: Brittany Henry in response to USAFA-BAA-2009-1 Call 0008

8110 Industrial Drive, Ste # 200

United States Air Force Academy, CO 80840

Fax: 719-333-4747

Email: 10MSG.LGCC@us.af.mil

WHITE PAPERS SHOULD ADDRESS ANY OR ALL OF THE PROGRAM OBJECTIVES FOUND IN ATTACHMENT ONE OF THIS CALL.

WHITE PAPERS EVALUATED AND SELECTED: White papers will be evaluated and full proposals may be requested in accordance with USAFA-BAA-2009-1. Offerors whose white papers are determined to be of interest to the Government will be asked to submit full cost and technical proposals in response to this call. Offerors whose white papers are not of interest to the Government will be notified via letter that the effort proposed is not of interest to the Government.

SECOND STEP: PROPOSALS, IF REQUESTED

INTENT TO PROPOSE: Potential offerors are requested to advise the Grants/Agreements point of contact (by e-mail) if they intend to submit a proposal after receiving a formal request for proposal from the Grants Officer. Such notification is merely a courtesy and is not a commitment by the offeror to submit a proposal.

PROPOSAL INSTRUCTIONS: Offerors are requested to follow the instructions within the baseline BAA, USAFA-BAA-2009-1 for instructions on how to submit a proposal. All proposals must be submitted through Grants.Gov, <https://www.grants.gov> and include all the required forms specified within the baseline BAA.

REGISTRATION REQUIREMENTS: Prospective recipients 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 www.ccr.gov or by calling 1-866-606-8220.

ANTICIPATED FUNDING: Funding is anticipated for this call. This posting is not to be construed to mean the assurance of an award, as availability of funds, technical need, Government discretion and successful negotiations are prerequisites to award.

ANTICIPATED TYPE OF CONTRACTS/INSTRUMENTS: The Government anticipates awarding a Cooperative Agreement as a result of this call but reserves the right to award the instrument best suited to the nature of research proposed including a Grant or Procurement Contract. Potential offerors are reminded that in accordance with DoDGARs 22.205, a fee or profit may not be paid to the recipient of a Cooperative Agreement or Grant.

PERIOD OF PERFORMANCE: The anticipated period of performance for the award resulting from this call is approximately 60 months (5 years), depending on the proposed effort.

PROPOSAL DUE DATE AND TIME: The due date for proposals will be 30 days after formal request for proposal has been sent to the submitter of the selected white paper(s). Proposals for any other technology area identified in the baseline BAA will not be accepted under this call. **Proposals received after the due date and time shall be governed by the provisions of FAR 52.215-1(c)(3).**

ANTICIPATED NUMBER OF AWARDS: The Government anticipates awarding up to three Cooperative Agreements or Grants as a result of this call. However, the Government reserves the right to make multiple awards, single awards, or no awards pursuant to this call.

AWARD DATE: Anticipated November 2012

CALL AMENDMENTS: Offerors should monitor **GRANTS.GOV** <http://www.grants.gov> for any additional notices to this call that may permit extensions to the white paper submission date or otherwise modify this announcement.

APPLICABILITY OF BASELINE BAA: All requirements of USAFA-BAA-2009-1 apply unless specifically amended and addressed in this call. For complete information regarding USAFA-BAA-2009-1, refer to the initial opened-ended BAA as amended. It contains information applicable to all calls issued under the BAA and provides information on the overall program, proposal preparation and submission requirements, proposal review and evaluation criteria, award administration, agency contacts, etc. Direct questions to the points of contact identified above.

ATTACHMENT: Research Considerations

**RESEARCH CONSIDERATIONS TO
ASSIST IN DEVELOPMENT OF A COOPERATIVE AGREEMENT
FOR RESEARCH IN
DEVELOPMENT OF INNOVATIVE LEARNING PEDAGOGIES
IN STEM OUTREACH TO K-12 SCHOOLS IN SOUTHERN COLORADO
20 June 2012**

1. GENERAL DESCRIPTION OF RESEARCH TO BE PERFORMED

The US Air Force Academy (USAFA) and the Department of Defense (DoD) intend to investigate models of K-12 outreach to increase nationwide enrollment in undergraduate engineering and basic science majors, commonly referred to as Science, Technology, Engineering and Mathematics (STEM). Model constituents may include (but not necessarily be limited to) STEM content delivery systems, organizational and teaming arrangements, pre-packaged content and infrastructure (e.g., national student design challenges, etc.), and assessment methods. The research revolves around development, extension, and assessment of K-12 student motivational experiences, teacher training, and project-based design competitions. USAFA efforts are focused on existing programs in the local community and supporting emerging STEM outreach programs across the United States in collaboration with professional societies, industry associations, and STEM-heavy employers like NASA.

2. OBJECTIVES AND EXPECTATIONS OF RESEARCH

The main objectives of this research are to develop all aspects of STEM outreach programs for K-12 in southern Colorado, test and refine these programs in the classroom, and assess long-term effectiveness of each program in achieving the overall goal of increasing the number of US high school graduates enrolled in college majors leading to STEM careers. Products of this research will support the strategic goal of migrating successful features of USAFA K-12 STEM outreach to other regions of the United States.

3. BACKGROUND INFORMATION

An excellent introduction to the STEM workforce shortfall may be found in the book “*Rising Above the Gathering Storm*,” published by the National Academy of Sciences in 2007 and augmented in 2010. At USAFA, STEM research will focus on regional K-12 outreach, not the STEM features of the Academy’s undergraduate education mission. Other Federal and National organizations such as the American Institute of Aeronautics and Astronautics, the National Institute of Aerospace, the Air Force Association, etc., have similar STEM outreach charters, goals, and outreach programs, and it may be appropriate to pursue collaboration with those agencies for the research planned here.

4. POSSIBLE KNOWN CONSTRAINTS

Existing experience with development and delivery of K-12 STEM outreach at USAFA has shown the following constraints may be expected:

- Attendance of students for enrichment programs may require limited financial support to cover such expenses as on-base bus transportation, etc.

- Candidate teacher trainees may require stipends to cover salary and expenses during training.
- Achieving high participation and economy of scale in operations will depend heavily on good organization and effective and timely marketing / promotion / communication with the teacher community.

5. REQUIRED DELIVERABLES

Quarterly reports are required to summarize progress made and products delivered by the Recipient in three areas: development, implementation, and assessment. Upon completion of the project, a final report summarizing all quarterly reports is required and shall be submitted by the Recipient to the technical POC and Grants Officer (GO).

6. GOVERNMENT FURNISHED PROPERTY

N/A

7. REQUIRED TRAVEL

N/A

8. OPERATIONS SECURITY CONSIDERATIONS

The deliverables under this effort and any scientific or technical information obtained or provided under this project have not been identified as critical information. Reports do not require prior approval from the STINFO officer to be released. The USAFA STINFO Officer is the Director of Research, 719-333-4195.

9. ORGANIZATIONAL CONFLICT OF INTEREST (OCI) CONSIDERATIONS

None anticipated.

10. DATA RIGHTS

The Government shall have government purpose rights to all newly developed intellectual property deliverables developed under this program. The Recipient shall clearly disclose which items were developed prior to the award of grant and all such items shall remain the property of the recipient. The Government shall retain custody of all records associated with recipient deliverables and shall have exclusive control in the distribution of all written deliverables.

11. RESEARCH SCHEDULE

The Recipient shall include in their proposal a proposed schedule. The schedule shall show start, major event(s), periodic review(s), and end dates. The schedule shall also indicate the report that will be provided at each milestone. This schedule will double as an invoicing schedule. The technical POC or Research Center Director may request progress meetings to discuss the content and pace of the work.