

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

TWO-STEP CALL ANNOUNCEMENT (CALL) 0003

FEDERAL AGENCY NAME: United States Air Force Academy, Life Sciences Research Center

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: Use of Microalgae Feedstocks in the Joint Development and Validation of a Novel Algal Lipids Extraction Technology

CALL ANNOUNCEMENT (CALL) NUMBER: 0003

TECHNICAL POINT OF CONTACT: The technical point of contact for this CALL as outlined in the baseline BAA, Section I - Funding Opportunity Description (a)(4), Bioenergy is:

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

Grants/Agreements Specialist:
Chelsea Gurwell, 10 CONS/LGCC, United States Air Force Academy, CO
Phone: 719-333-2849
Email: Chelsea.Gurwell@usafa.af.mil

Grants/Agreements Officer:
Jessica Niebuhr, 10 CONS/LGCC, United States Air Force Academy, CO
Phone: 719-333-2786
Email: Jessica.Niebuhr@usafa.af.mil

BACKGROUND: The Life Sciences Research Center (LSRC) at the United States Air Force Academy (USAFA) is seeking white papers involving algae to biofuels research. Specifically, the center is looking for research assistance in screening, environmentally manipulating, and cultivating select algae species. The LSRC is also interested in better understanding algal carbon partitioning pathways and plan to incorporate both lipidomics and proteomics in our investigations. In order to better leverage our resources, the Academy has partnered with private and government institutions in both selecting and then testing certain microalgae species in a modified liquid CO₂ extraction (LCE) system used to extract microalgal lipids. One of the major obstacles in using microalgae is having a cost effective and environmentally friendly lipid extraction system. Traditional organic solvent systems such as hexane can be costly in terms of storage/handling and environmental hazards. Although a relatively unused process in biofuels production, LCE, in recent trials, has had positive results in terms of cost and efficiencies. Additionally, considerable time and cost is spent in regenerating algal stocks for sustained lipid extraction purposes. Some literature suggests using a “milking” process to as a way of “reusing” algae cells for continuous production of hydrocarbons. Milking is accomplished by exposing the cells to an extraction process for a short period of time. Recent work indicates that modified super critical fluid extraction (a component of LCE) may offer a way in which to remove algal lipids without cell destruction, affording reuse of algal stocks, and subsequently saving both time and resources for biofuels production. As such, additional investigations involving microalgal milking during LCE extraction will be conducted in collaboration with other USAFA research partners. Because USAFA has access to a wide range of microalgal species and strains, the LSRC has already begun initial experimentation with some promising species such as *Chlorella* spp, *Dunaliella salina*, and *Scenedesmus* spp. However, the LSRC has reached the point at which additional technical expertise is needed in cultivating and manipulating microalgae species in order to optimize lipid production. While researchers will be leading various aspects of the project, considerable cadet involvement is expected throughout each phase of the project. As the United States Air Force Academy prepares young men and women for service to our nation, it is essential they have as many educational opportunities as possible to facilitate their leadership development.

REQUIREMENT DESCRIPTION: The United States Air Force Academy is soliciting white papers/proposals for research under **Section I - Funding Opportunity Description (a)(4), Bioenergy of the Broad Agency Announcement USAFA-BAA-2009-1 posted on 30 September 2009** specifically for Use of Microalgae Feedstocks in the Joint Development and Validation of a Novel Algal Lipids Extraction Technology.

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, section IV 3.a and also include a brief resume of the principle investigator and a rough order of magnitude of cost.

WHITE PAPER DUE DATE AND TIME: The due date for white papers submitted in response to this CALL is no later than 1630 MST on 6 July 2011. *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: Chelsea Gurwell

8110 Industrial Drive, Ste # 200

United States Air Force Academy, CO 80840

Fax: 719-333-4747

Email: 10CONS.LGCC@usafa.af.mil

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: Anticipated funding for this Call is unknown at this time. 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 36 months, 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 one Cooperative Agreement 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 July/August 2011

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.