

**BROAD AGENCY ANNOUNCEMENT
USAFA-BAA-2021
Research Interests of the United States Air Force Academy (USAFA)**

TWO-STEP CALL ANNOUNCEMENT (CALL) 0001

FEDERAL AGENCY NAME: United States Air Force Academy, Department of Mechanical Engineering

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

BROAD AGENCY ANNOUNCEMENT NUMBER: USAFA-BAA-2021

BROAD AGENCY ANNOUNCEMENT TYPE: This is an initial announcement.

CATALOG OF FEDERAL DOMESTIC ASSISTANCE (CFDA) NUMBER: 12.800

CALL ANNOUNCEMENT TITLE: Developing Novel Engineering Design Methodologies for the Classroom, the Department of Defense, and Industry

CALL ANNOUNCEMENT (CALL) NUMBER: 0001

TECHNICAL POINT OF CONTACT: The technical point of contact for this CALL as outlined in the baseline BAA, Section 1 - Funding Opportunity Description (a)(8), is:

Dr. Michael L. Anderson, Director of Capstone Programs
USAF Academy Department of Mechanical Engineering
United States Air Force Academy, CO
Phone: (719) 333-4048
Email: michael.anderson@usafa.edu

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

Grants/Agreements Specialist:

Casey Perhson, 10 CONS/PKC
United States Air Force Academy, CO
Email: casey.pehrson.2@us.af.mil

Grants/Agreements Officer:

Erica Wilson, 10 CONS/PKC
United States Air Force Academy, CO
Email: erica.wilson.7@us.af.mil

BACKGROUND: The Department of Mechanical Engineering (DFME) has multiple senior capstone design research programs that have a common need for improved design methodologies and initial proof-of-concept. These projects include autonomous systems, general small system design, special operations equipment design, corrosion prevention technologies, hardened and deeply buried target neutralization, munitions innovations and others. The capstone teams start at the beginning of the Engineering Design Process and progress through initial prototyping to develop concepts and prototypes that demonstrate initial feasibility. The research to be performed should advance the state of current design methodologies, explore how to best teach these design methodologies to students, collect feedback on their efficacy and report the findings to the larger engineering community. The research should help capstone teams develop more innovative and useful solutions to customer needs and requirements. The research program in DFME is geared toward providing all undergraduates with a rich, relevant research experience while answering critical research needs of our highly varied customer base. Researchers may expect extensive access to premier facilities and faculty, tremendous latitude of pursuits and single-minded focus on research tasks, but must seek to incorporate student/cadet participation in their projects.

STATEMENT OF OBJECTIVES: This CALL is focused on research to develop state-of-the-art design methodologies for design teams (cadets, DoD, industry) that produce innovative designs and demonstrate their feasibility for warfighting and other applications. These methodologies should have specific application to cadet capstone teams. The ultimate goal of the research is to enable cadets to generate innovative solutions to challenging projects and demonstrate the feasibility of their novel engineering designs that the customer may further develop. Research should support the full design lifecycle which may include research thrusts related to concept generation research, state of the art detailed design technology and methods, and research that guides solutions into production and operational use phases. Recipient will be expected to collaborate with Mechanical Engineering faculty to draft and publish scholarly research papers describing the research effort. Other materials that support the teaching/implementation of any new design methods are also expected as deliverables (such as pamphlets, handouts, activity cards, rubrics, etc.) Projects must be new research efforts. Proposals for the continuation of existing research projects funded under previous grant or cooperative agreement awards are not desired. Collaboration among proposing institutions is strongly encouraged.

REQUIREMENT DESCRIPTION: The United States Air Force Academy is soliciting white papers for research under **Section I - Funding Opportunity Description (a)(8), Mechanical Engineering of the Broad Agency Announcement USAFA-BAA-2021 posted on 02 December 2020** specifically for Developing Novel Engineering Design Methodologies for the Classroom, the Department of Defense, and Industry with the Statement of Objectives above.

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-2021, section IV c. 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 18 March 2021. *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/PKC

Attn: Casey Pehrson

8110 Industrial Drive, Ste # 200

United States Air Force Academy, CO 80840

Fax: 719-333-4747

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

WHITE PAPERS EVALUATED AND SELECTED: White papers will be evaluated and full proposals requested in accordance with USAFA-BAA-2021. 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

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. 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-2021 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 Awardees shall be registered in the System for Award Management 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 beta.sam.gov or by calling 1-866-606-8220.

ANTICIPATED FUNDING: The total anticipated funding for the total cumulative amount of all awards made as a result of this CALL is \$1.1M over four years of effort. All funding is subject to change due to Government discretion and availability as well as technical needs.

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, Procurement Contract, or other type of agreement. Potential offerors are reminded that in accordance with 32 CFR 22.205 and 2 CFR 200.400, 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 up to 4 years per award, 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 1-2 Cooperative Agreements 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.

ANTICIPATED AWARD DATE: 30 May 2021

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-2021 apply unless specifically amended and addressed in this CALL. For complete information regarding USAFA-BAA-2021, 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.