AIR FORCE OFFICE OF SCIENTIFIC RESEARCH
FUNDING OPPORTUNITY ANNOUNCEMENT #
FOA-AFRL-AFOSR-2024-0007

FY24 DEFENSE ESTABLISHED PROGRAM TO STIMULATE COMPETITIVE RESEARCH (DEPSCoR) – RESEARCH COLLABORATION (RC)

OVERVIEW INFORMATION

The Department of Defense (DoD) announces the fiscal year 2024 (FY24) Defense Established Program to Stimulate Competitive Research (DEPSCoR) – Research Collaboration (RC) opportunity. The program is sponsored and managed by the Basic Research Office, Office of the Under Secretary of Defense for Research and Engineering (OUSD [R&E]), awarded by the Air Force Office of Scientific Research (AFOSR), and administered through the Office of Naval Research (ONR). The DoD plans to award FY24 DEPSCoR appropriations through this announcement.

DEPSCoR's objectives are to: (1) increase the number of university researchers in eligible States/Territories capable of performing science and engineering (S&E research responsive to the needs of the DoD; and (2) enhance the capabilities of institutions of higher education (IHE) in eligible States/Territories (listed below) to develop, plan, and execute (S&E) research that is relevant to the mission of the DoD, and competitive under the peer-review systems used for awarding Federal research assistance; (3) increase the probability of long-term growth in the competitively awarded financial assistance that IHE in eligible States receive from the Federal Government for S&E research.

Consistent with these long-term objectives of building research infrastructure, the DoD intends to competitively make, and fund from fiscal year 2024 appropriations, multiyear awards for S&E research in areas relevant to the DoD's mission and important to national security.

This funding opportunity aims to create basic research collaborations between a **pair** of researchers, namely 1) Applicant/Principal Investigator (PI), henceforth referred to as

Applicant, a full-time faculty member who has never served as a PI on a prior DoD directly funded research Prime award and 2) Collaborator/co-Principal Investigator (co-PI), henceforth referred to as Collaborator, an investigator who will provide mentorship to the Applicant **and** has served as a PI on a DoD directly funded research Prime award actively between 1 October 2017 and 30 September 2024. This structure is aimed at introducing potential applicants to the DoD's unique research challenges and its supportive research ecosystem.

Prime award defined in the context of this announcement is the DoD legal instrument (assistance or acquisition) that a Principal Investigator receives directly from a DoD awarding agency and not indirectly from a non-DoD pass-through entity to carry out scientific research.

- You are eligible to apply as the Applicant under the DEPSCoR-RC FOA as long as you were NOT listed as the Principal Investigator on a previous DoD funded research award and are a full-time faculty member in a tenured or tenure track position in a DEPSCoR eligible State/Territory. Being a "Co-PI" or "sub-PI" on a prior DoD funded award does not count as being a "PI" for the purposes of eligibility of the Applicant for the DEPSCoR-RC FOA.

- The DEPSCoR-RC White Paper package must include prior research award documentation which indicates that the Collaborator was a PI on a previous DoD directly funded research Prime award between 1 October 2017 and 30 September 2024. If the Collaborator is not identified as the PI within the award document, a letter from the awarding agency point of contact should be furnished supporting the assertion within the timeframe identified.

- The Collaborator must have served as a Principal Investigator on a directly funded DoD research Prime award during the eligibility period and not have been subcontracted by other PIs, non-DoD entities, or companies as a Co-Principal Investigator. Subawards indirectly funded by the DoD where the Collaborator has served as a Co-Principal Investigator do not count as eligible criteria for the Collaborator for the purposes of this funding opportunity announcement.

- The flow charts below serve as a guide for determining Applicant and Collaborator eligibility. Each diamond shape is an eligibility criterion question which elicits either a "yes" or "no" response. You are not eligible to submit a White Paper or Full Proposal if any "yes" or "no" response leads to the "Not eligible" outcome. Submissions found to be "Not eligible" will not be subject to technical review. You are not eligible to submit a White Paper or Full Proposal if you do not meet this requirement.

Tenured or tenure-track faculty members with appointments at IHE, in the following States/Territories are eligible to apply for DEPSCoR opportunities under this announcement: Alabama, Alaska, Arizona, Arkansas, Connecticut, Delaware, District of Columbia, Guam, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Dakota, Oklahoma, Oregon, Puerto Rico, Rhode Island, South Carolina, South Dakota, Tennessee, U.S. Virgin Islands, Vermont, West Virginia, Wisconsin, and Wyoming.

Hyperlinks have been embedded within this document and appear as underlined, and blue-colored words in the midst of paragraphs. The reader may "jump" to the linked section within this document by "clicking" (CTRL + CLICK or CLICK).

SUMMARY OF FUNDING OPPORTUNITY INFORMATION

1. FEDERAL AWARDING AGENCY NAME

Air Force Office of Scientific Research
875 North Randolph Street, STE 325, Room 3112
Arlington, VA 22203

2. FUNDING OPPORTUNITY TITLE

Defense Established Program to Stimulate Competitive Research (DEPSCoR) – Research Collaboration (RC)

3. ANNOUNCEMENT TYPE

Initial Funding Opportunity Announcement (FOA)

4. FUNDING OPPORTUNITY NUMBER

FOA-AFRL-AFOSR-2024-0007

5. CATALOG OF FEDERAL DOMESTIC ASSISTANCE (CFDA) NUMBER(S)

12.431 – Basic Scientific Research

6. KEY DATES

Schedule of Events		
Event	**Date**	**Eastern Time**
RunGrants website open for White Paper submission (https://dod-basicresearch.**nvision.noblis.org**/program/depscor)	Tuesday, 16 April 2024	9:00 AM
DEPSCoR Webinar For details and registration, please visit (https://dod-basicresearch.**nvision.noblis.org**/program/depscor)	Tuesday, 16 April 2024	1:00 - 3:00 PM
RunGrants Registration (strongly suggested by) & Cut-off date for Q&As with Program Officers	Thursday, 20 June 2024	NLT 11:59 PM
White Paper and Supporting Documentation submission on RunGrants website (https://dod-basicresearch.**nvision.noblis.org**/program/depscor) (required by)	Monday, 24 June 2024	NLT 11:59 PM
Notification of White Paper Selection	Friday, 6 September 2024	NLT 11:59 PM
Full Proposal Submission (by invitation only) electronically on Grants.gov website (submitted by)	Monday, 25 November 2024	NLT 11:59 PM
Notification of Selection for Award	Monday, 17 March 2025	NLT 11:59 PM

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I. PROGRAM DESCRIPTION

A. OBJECTIVES

The aim of DEPSCoR is to improve the research capabilities at institutions of higher education (IHE) in eligible States/Territories to perform competitive basic research in science and engineering that is relevant to the DoD mission and reflect national security priorities. As defined in the DoD Financial Management Regulation:

> Basic research is systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind. It includes all scientific study and experimentation directed toward increasing fundamental knowledge and understanding in those fields of the physical, engineering, environmental, and life sciences related to long-term national security needs. It is farsighted high payoff research that provides the basis for technological progress (DoD 7000.14-R, vol. 2B, chap. 5, para. 1.5.1)

The DoD's basic research program invests broadly in many scientific fields to ensure that it has early cognizance of new scientific knowledge.

To address the program's aim, DEPSCoR will focus on capacity building through human and technical resources by soliciting applications in a DEPSCoR – Research Collaboration (RC) competition. DEPSCoR – RC seeks proposals that advance knowledge in basic science involving bold and ambitious research that may lead to extraordinary outcomes such as disrupting accepted theories and perspectives.

Authority for a grant award under this announcement is established in 10 U.S.C. 4001 for basic research. Authority for DEPSCoR specifically was established in the National Defense Authorization Act for Fiscal Year 1995, and has subsequently been amended and reauthorized over the years since (see specifically 10 U.S.C. 4010 referring to DEPSCoR in the National Defense Authorization Act for Fiscal Year 2024).

B. COLLABORATION COMPOSITION

This funding opportunity aims to create basic research collaborations between a **pair** of researchers, namely 1) Applicant/Principal Investigator

(PI), henceforth referred to as Applicant, a full-time faculty member who has never served as a PI on a prior DoD directly funded research Prime award and 2) Collaborator/co-Principal Investigator (co-PI), henceforth referred to as Collaborator, an investigator who will provide mentorship to the Applicant **and** has served as a PI on a DoD directly funded research Prime award actively between 1 October 2017 and 30 September 2024. This structure is aimed at introducing potential applicants to the DoD's unique research challenges and its supportive research ecosystem. Only one Applicant/Principal Investigator and one Collaborator/co-PI are allowed per application.

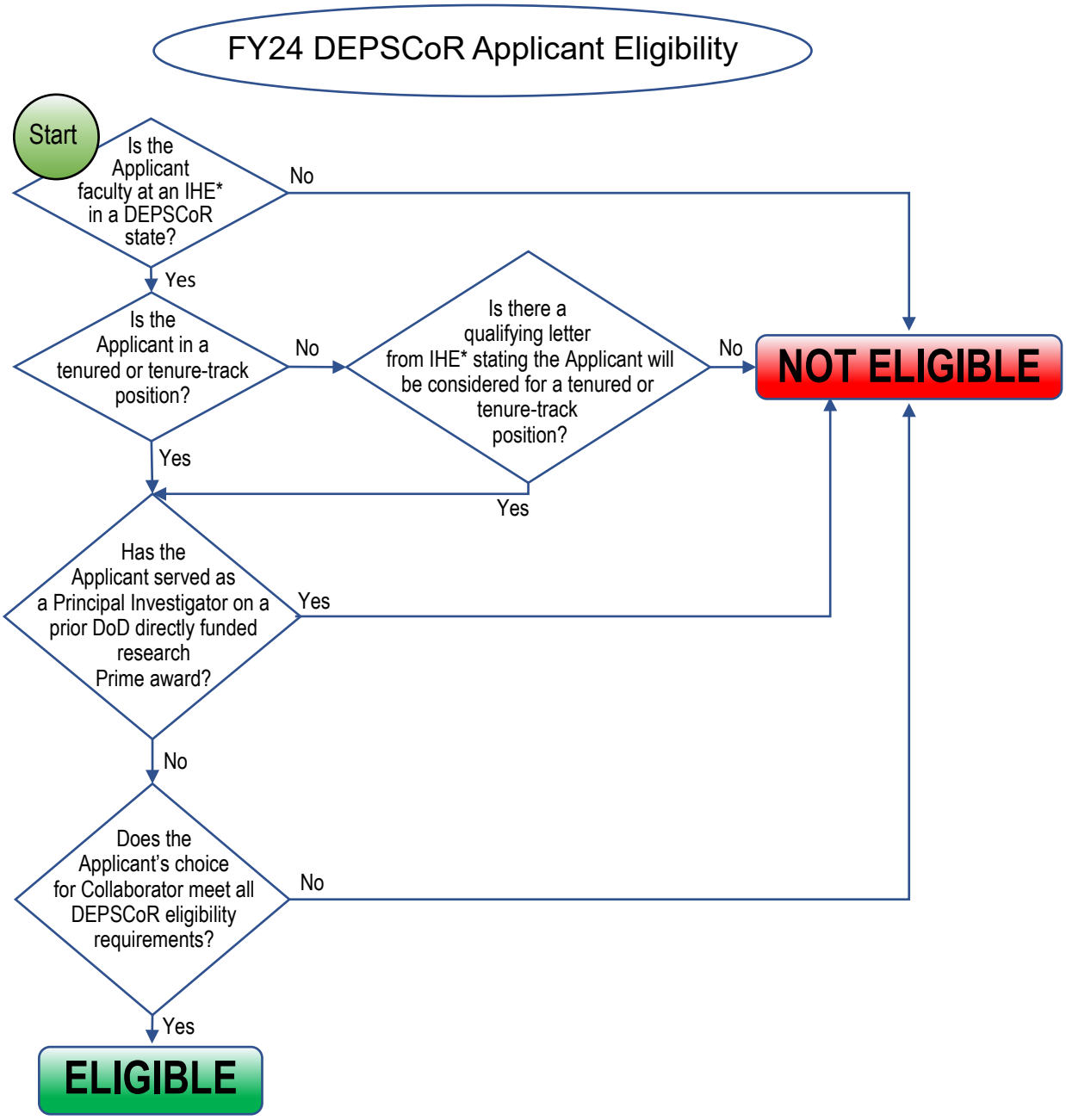
Applicants must be aware of the following eligibility criteria:

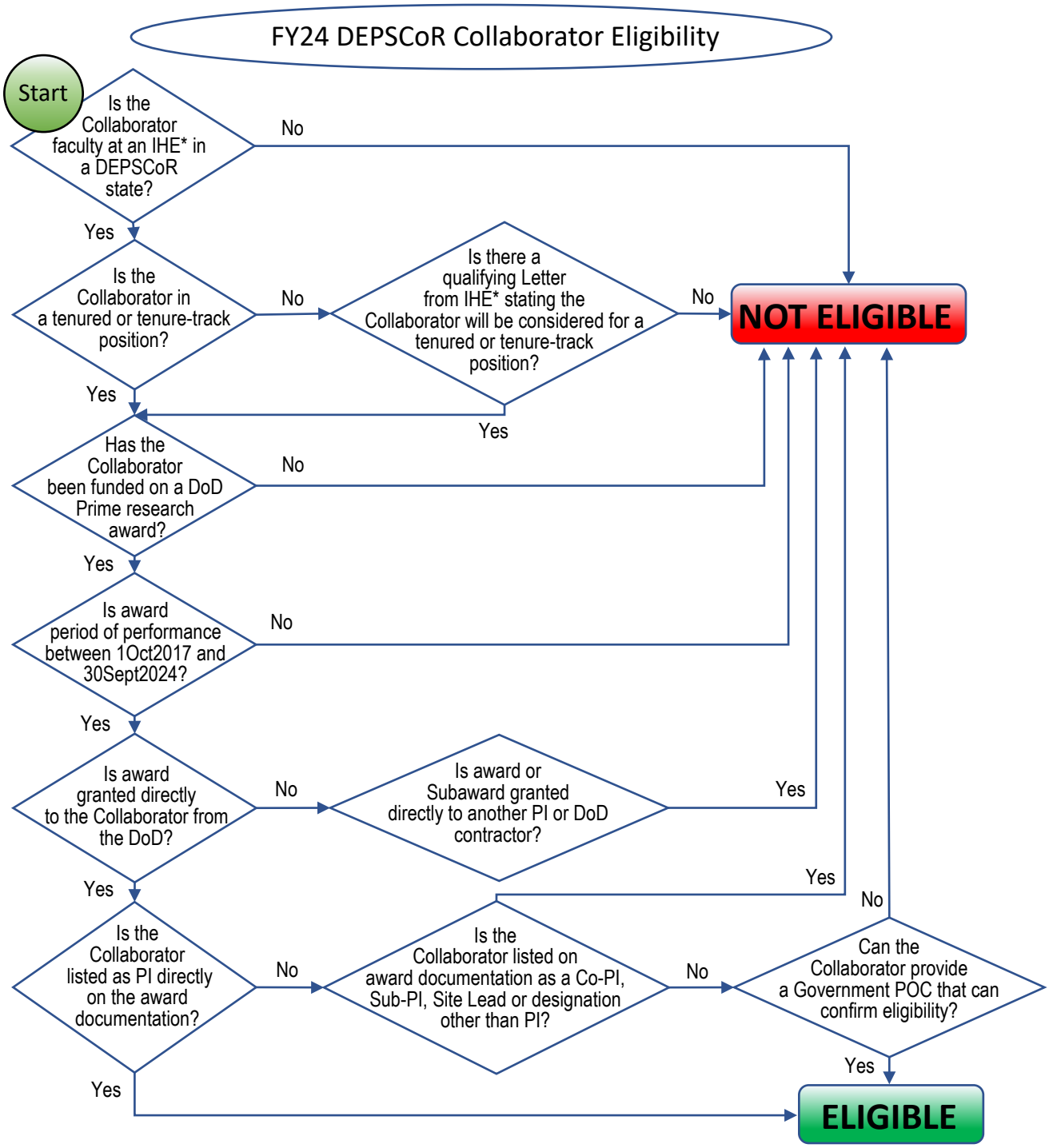
- You are eligible to apply as the Applicant under the DEPSCoR-RC FOA as long as you were NOT listed as the Principal Investigator on a previous DoD funded research award and are a full-time faculty member in a tenured or tenure track position in a DEPSCoR eligible State/Territory. Being a "Co-PI" or "sub-PI" on a prior DoD funded award does not count as being a "PI" for the purposes of eligibility of the Applicant for the DEPSCoR-RC FOA.

- The DEPSCoR-RC White Paper package must include prior research award documentation which indicates that the Collaborator was a PI on a previous DoD directly funded research Prime award between 1 October 2017 and 30 September 2024. If the Collaborator is not identified as the PI within the award document, a letter from the awarding agency point of contact should be furnished supporting the assertion within the timeframe identified.

- The Collaborator must have served as a Principal Investigator on a directly funded DoD research Prime award during the eligibility period and not have been subcontracted by other PIs, non-DoD entities, or companies as a Co-Principal Investigator. Subawards indirectly funded by the DoD where the Collaborator has served as a Co-Principal Investigator do not count as eligible criteria for the Collaborator for the purposes of this funding opportunity announcement.

- The flow charts below serve as a guide for determining Applicant and Collaborator eligibility. Each diamond shape is an eligibility criterion question which elicits either a "yes" or "no" response. You are not eligible to submit a White Paper or Full Proposal if any "yes" or "no" response leads to the "Not eligible" outcome. Submissions found to be "Not eligible" will not be subject to technical review. You are not eligible to submit a White Paper or Full Proposal if you do not meet this requirement.


FY24 DEPSCoR Applicant Eligibility
Start
Is the Applicant faculty at an IHE* in a DEPSCoR state?
No
Yes
Is the Applicant in a tenured or tenure-track position?
No
Is there a qualifying letter from IHE* stating the Applicant will be considered for a tenured or tenure-track position?
No
NOT ELIGIBLE
Yes
Yes
Has the Applicant served as a Principal Investigator on a prior DoD directly funded research Prime award?
Yes
No
Does the Applicant's choice for Collaborator meet all DEPSCoR eligibility requirements?
No
Yes
ELIGIBLE



*** Institution of Higher Education (IHE) must be in a DEPSCOR eligible State/Territory and with an advanced degree granting program in science, mathematics, and/or engineering.**

The Applicant is permitted to submit only one DEPSCoR-RC White Paper per this DEPSCoR-RC FOA. Each White Paper is permitted a single Applicant and a single Collaborator.

Collaborators are allowed to work with more than one Applicant and thus aren't restricted from participating in more than one White Paper. However, please note it is expected that Collaborators serve as a vital component of the proposed team and commit to providing time for research collaboration and mentorship throughout the entire process.

The website https://discover.dtic.mil/products-services/ is a non-comprehensive repository of government-funded scientific, technical, and engineering information for the DoD. Researchers and Applicants new to DoD are encouraged to visit the site as a starting point for identifying past and present DoD-funded researchers.

The Basic Research Office has also established a "Connect and Collaborate" site where prospective Applicants and Collaborators, seeking collaboration in this DEPSCoR opportunity can post their interest. Please see (https://dod-basicresearch**.nvision.noblis.org**/program/depscor) for more information. Posting your interest is NOT a requirement.

While each member of the collaboration should be in a tenure-track appointment or tenured at an IHE in DEPSCoR-eligible States/Territories, you do not need to be in the same State/Territory. Likewise, the Applicant and Collaborator can have appointments at the same IHE.

Proposals should name the Applicant as the PI and their IHE as the primary institution. Awards will be issued to the IHE where the Applicant resides. It is anticipated but not a requirement that the Collaborator will be funded through a sub-award. The Applicant IHE must receive greater than 50% of the funding. The relationship among participating institutions and their respective roles, as well as the apportionment of funds including sub-awards, if any, shall be described in both the proposal text and the budget. All key personnel proposed must hold appointments at an IHE in a DEPSCoR eligible state. In addition to providing technical expertise to the project, the Collaborator is strongly encouraged to provide guidance and mentorship to the Applicant in the DoD application process.

In this announcement, the term "you/your" refers to the Applicant.

C. TOPICS

The FY24 DEPSCoR – Research Collaboration competition seeks proposals addressing the topics listed below. You are strongly encouraged to contact the Topic Area Program Officer prior to submitting a White Paper, preferably by email to discuss the current state of the art in his/her area of interest and how your research would advance it. This information will be requested in the IV.C.4 White Paper Package.

SECTION	Topic Number	SERVICE	TOPIC AREA	PROGRAM OFFICER
I.C.1	1	Air Force Office of Scientific Research (AFOSR)	Natural Materials and Systems	Dr. Bennett Ibey
I.C.2	2	AFOSR	Atomic and Molecular Physics	Dr. Boyan Tabakov
I.C.3	3	AFOSR	Mathematical Optimization	Dr. Warren Adams
I.C.4	4	AFOSR	Ghz - Thz Electronics	Dr. Kenneth C. Goretta
I.C.5	5	Army Research Office (ARO)	Fluid Dynamics	Dr. Jack R. Edwards
I.C.6	6	ARO	Polymer Chemistry	Dr. Robert H. Lambeth
I.C.7	7	ARO	Information Processing and Fusion	Dr. John S. Hyatt
I.C.8	8	ARO	Physical Properties of Materials	Dr. Katherine J. Duncan
I.C.9	9	Office of Naval Research (ONR)	Novel, fast-response, infrared (IR) detector concepts enabling higher temperature operation	Dr. Richard Espinola
I.C.10	10	ONR	Vertical Cloud and Aerosol Profiling	Dr. Josh Cossuth
I.C.11	11	ONR	Multifunctional Marine Antifouling Surfaces	Ms. Danielle Paynter
I.C.12	12	ONR	Understanding Mind and Body Relationship Through Respiratory Control	Dr. Sandra Chapman
I.C.13	13	ONR	Novel Attachment Methods for Fiber Reinforced Thermoplastics	Mr. Bill Nickerson

Topic 1: Natural Materials and Systems

Program Description: Materials found in nature combine many inspiring properties such as multifunctionality, self-assembly and

hierarchical organization, tolerance, resilience, and adaptability. Biological molecules are also interesting to explore for their exquisite sensitivity, selectivity, and energy efficiency. The vision of this program is to elucidate and use biological design principles and biological material for building novel functional materials to support AF's future missions. For example, multifunctional materials that can sense and respond while providing structural/thermal support, cell-based manufacturing platforms for on-demand material synthesis with locally sourced starting materials.

Biological design principles may enable us to build lighter, tougher materials for extreme loading conditions or dynamically responsive materials. The intent of this program is to study/understand the mechanism of existing natural systems, to utilize existing biological materials, or to add new capabilities to current systems and/or materials. The research will encompass four general areas: biomaterials (non-medical only), biomolecular engineering, bio-interfacial sciences, and engineering biology for materials.

Basic Research Objectives: The non-medical ***Biomaterials*** area is focused on understanding how organisms synthesize materials and control their properties. The intent is to understand the property and structure relationship within the biomaterial to enable synthetic methods to be developed or to modify existing biomaterials genetically. Natural materials can also be engineered or re-engineered through targeted chemistry (both organic and inorganic), ordering, or tailored processing to modulate material properties.

The ***Biomolecular Engineering*** explores strategies for building novel functional materials from biological molecules (peptides, sugars, nucleic acids, etc.). For example, some metabolites can form higher-order structures through molecular interactions not found in nature. These relatively simple and scalable building blocks may lead to development of inexpensive/ubiquitous sensors for biological or non- biological targets.

The ***Bio-interfacial Sciences*** area is focused on the fundamental science at the biotic and abiotic interface of a biomaterial or organism with a non-natural material such as metals and inorganics (i.e., biotemplating). Exploitation of the materials-selective binding of biomolecules is key to producing new hierarchically structured biological or bio-hybrid materials. The nanotechnology and mesotechnology sub-efforts under this area are focused on surface structure and new architectures using nature's idea of directed assembly at the nanoscale to mesoscale to create desired effects, such as quantum electronics or three dimensional power

structures. These structures could be used in the design of patterned and templated surfaces, new catalysts, and natural materials-based optics/electronics (biophotonics).

Engineering Biology for Materials requires fundamental understanding to drive the development of new synthetic biology tools and parts that will function robustly and predictively in cells under various environmental conditions for materials synthesis. There are three sub-effort areas:

1) cells as factories—borrow nature's ability for self- assembly and guided assembly to have cells produce structures/materials of interest beyond small molecules. This approach offers the potential to build designed, nanostructured biomaterials with greater complexity of structure and/or function at multiple length scales.

2) cells as materials—engineered cells to interface with other biological or non-biological materials to form composites/hybrids for novel function.

3) beyond mesophiles— mechanistic understanding and harnessing of genetic parts from unusual chemistries/phenotypes found in nature, such as radiotrophy, lithotrophy, biostasis, solvent resistance, etc., and impart those phenotypes into different biosystems for materials synthesis and/or synergistic functionalities.

TOPIC 1 POC: DR. BENNETT IBEY, AFOSR/RTB2
Email: afosr.nature@us.af.mil
(703) 965-5327

Topic 2: Atomic and Molecular Physics

Program Description: This program encompasses fundamental experimental and theoretical Atomic and Molecular Physics research that is primarily focused on studies of cold and ultra-cold quantum gases, precision measurement, matter-wave optics, and non- equilibrium quantum dynamics. These research areas support technological advances in application areas of interest to the U.S. Air and Space Force, including precision navigation, timekeeping, remote sensing, metrology, and novel materials for the U.S. Air and Space Force needs in the future.

Basic Research Objectives: AMO (Atomic, Molecular and Optical) physics today offers an unprecedented level of coherent control and manipulation of atoms and molecules and their interactions, allowing for significant scientific advances in the areas of cold and ultra-cold matter and precision measurement. Specific research topics of interest in this

program include, but are not limited to, the following: physics of quantum degenerate atomic and molecular gases; precision control techniques; strongly-interacting quantum particles; new quantum phases of matter; non- equilibrium dynamics of cold quantum particles; ultra-cold chemistry; precision spectroscopy; and high-precision techniques for navigation, guidance, and remote sensing**.**

TOPIC 2 POC: DR. BOYAN TABAKOV, AFOSR/RTB1
Email: amphysics@us.af.mil
(703) 696-9518

Topic 3: Mathematical Optimization

Program Description: The program goal is to develop novel theory, algorithms, and software for the many classes of Mathematical Optimization problems that arise in support of decision, design, and allocation problems confronting the U.S. Air Force and Space Force. Areas of fundamental interest include resource allotment, planning, logistics, interdiction, engineering design, resiliency, and scheduling. Problems can be deterministic in that input parameters and objectives are known with certainty or can have data uncertainty that is addressed using such methods as stochastic programming and robust optimization. The research, while of fundamental importance to such problems, can also profoundly impact related areas of study, including the operation of autonomous vehicles and the effectiveness of machine learning.

Basic Research Objectives: The program welcomes basic research in theory, algorithms, and computational methods for continuous and discrete problems, both deterministic and stochastic. Contributions/impacts can be generally applicable to large families of problems or be specially tailored to exploit specific mathematical structures found within special, important classes. As basic research aimed at having the broadest possible impact, the development of computational methods should include an emphasis on theoretical underpinnings, on rigorous convergence analysis, and on establishing provable bounds for approximation methods. Areas of interest include, but are not limited to:

- Integer and mixed-integer programming
- Continuous, nonconvex optimization
- Multi-level optimization
- Conic programming
- Combinatorial optimization
- Stochastic programming

Methodologies include:

- Cutting plane and polyhedral methods for mixed-integer programs
- Decomposition methods for large, specially structured problems
- Global optimization for nonconvex programs
- Interior-point and first- and second order methods for conic/convex/nonconvex optimization

A key evaluation criterion is the identification of innovative idea(s) that show promise for advancing the field of mathematical optimization, with reference to the optimization/mathematical programming literature.

TOPIC 3 POC: DR. WARREN ADAMS, AFOSR/RTA2
E-mail: warren.adams.2@us.af.mil
(703) 835-6487

Topic 4: GHz – THz Electronics and Materials

Program Description: This program seeks scientific breakthroughs in materials, heterostructures, and devices that can lead to game-changing capabilities in digital electronics, RF sensing and amplification, transmit/receive functions, wideband operation, and novel functionalities. The primary frequencies of interest range from GHz to THz.

Basic Research Objectives: The focus of the portfolio is on fundamental interactions of electrons and quasiparticles with each other and their host materials in all regions of device operation. Technical challenges include understanding and controlling (1) interactions between particles/quasiparticles and host lattices, boundaries, and defects, including thermal effects and changes over time that limit lifetime and performance; (2) carrier velocity; and (3) methods of device operation that do not rely solely on conventional transistors or transport mechanisms such as drift, diffusion, and tunneling. Efficiency, volume, speed, and power are important figures of merit. It is expected that to understand fully well the various new phenomena and device configurations, novel techniques to study and control nanoscale structures, defects, and operations may be required. Fundamental studies of radiation damage and its effects on properties and performance and of superconductors are of special interest. The program emphasizes experiments and supports theory and modeling.

TOPIC 4 POC: DR. KENNETH C. GORETTA, AFOSR/RTA1
E-mail: ghz.thz@us.af.mil
(703) 835-2221

Topic 5: Fluid Dynamics

Program Description: Fluid dynamics plays a critical role in many Army operational capabilities. Accurate and efficient prediction of the flow physics required for the design of future advanced capabilities and improvements to the performance of existing systems is challenged by the nonlinear and high-dimensional character of the governing equations. In addition, Army relevant platforms are often dominated by flows with high degrees of unsteadiness, turbulence, multiple and widely separated spatio-temporal scales, and geometrical complexity of solid or flexible boundaries. The program seeks to support basic research investigations of fundamental and novel flow physics to gain the necessary physical insights underpinning future concepts and capabilities spanning Army vehicles, munitions, manufacturing, and logistics. The program seeks basic research proposals in the following three thrust areas:

Dynamics of Unsteady and Separated Flows
Efforts in this research area require novel and aggressive strategies for examination of the interplay between disparate spatio-temporal scales, the inclusion of physically significant sources of three dimensionality, and the characterization of the role of flow instabilities and nonlinear interactions across a range of Mach and Reynolds numbers appropriate to Army aerial vehicle and weapons systems. In all cases, the flow is characterized by a high degree of unsteadiness. Criteria for identifying the signature of unsteady separation and/or incipient separation are of particular interest. Historical management of complexity has often resulted in scientific approaches that lead to the elimination of potentially critical flow physics. Research efforts capable of gaining deep understanding of highly complicated flows are likely to allow these critical physics to be exploited.

Nonlinear Flow Interactions and Turbulence
Many Army relevant flows are governed by strong nonlinearities and turbulent behaviors. Historically, many analysis tools developed for linear dynamics have been applied to gain understanding of flow behaviors. The practical usefulness of such techniques has saturated; the ability to gain global understanding of the evolution of flows requires the development and use of approaches that are capable of dealing directly with inherent nonlinearities. Operator theoretic methods are making great strides in tackling the perennial difficulties associated with the Navier-Stokes equations. Turbulent dynamics are also benefitting from new approaches based in dynamical systems theory to build frameworks beyond the notions based on Reynolds averaging and stochastic dynamics. By leveraging the existence of underlying deterministic structures, significant advances in the ability to design systems capable of not just dealing with turbulence but exploiting its dynamics. Modeling flows near walls is a continuing challenge to accurate numerical prediction of complex physics

that may benefit from novel non-intrusive diagnostics to inform creative numerical and theoretical constructs capable of efficiently producing a high degree of fidelity near physical boundaries.

Dynamics of Particle-Laden Flows
Understanding the dynamics and control of particle-laden flows has the potential to permit flow-assisted assembly of heterogeneous materials and address the role of dust, sand, and other particulates in degraded performance of Army systems. Accurate prediction and description of the interactional physics of particle-fluid, particle-particle, and particle-boundary interactions represents an exciting opportunity to contribute to the creation of next-generation materials and capabilities. Use of a variety of mechanisms, including (but not limited to) electro-kinetics, diffuseophoretics, or selective permeability, should allow the identification of fundamental mechanisms related to the dynamics and control of such multi-phase flows.

TOPIC 5 POC: DR. JACK R. EDWARDS, ARO
Email: jack.r.edwards36.civ@army.mil
(919) 549-4235

Topic 6: Polymer Chemistry

Program Description: The Polymer Chemistry program supports basic, foundational research in polymer design, synthesis, and characterization with the goal of linking the molecular level structure through the atomic/molecular- nano- and microstructural continuum to bulk macroscopic properties. Innovative methodologies are sought for synthesizing polymers with well-defined functionality and architecture with the objective of gaining a more acute understanding of how chemical structure influences microstructure, morphology, phase behavior, self-assembly, processing and ultimately, functional/structural properties. The continued development of these relationships is critical to creating new generations of materials with superior mechanical, thermal, optical, chemical, electrical, and other transport properties to perform well under extreme operating conditions. Research areas of interest include but are not limited to the following:

Polymer Synthesis Methodology
New synthetic approaches are sought for preparing polymers with well-defined molecular weight, functionality, architecture, tacticity, and sequence. This could include new methodologies for controlled polymerization, catalyst and initiator design for tacticity or sequence control, novel strategies for post-polymerization functionalization or

transformation and accessing ultra-high molecular weights. Proposals are also sought which link molecular level control to polymer assembly to access increasingly complex structures with improved selectivity driven by non-covalent chemistry, solvent effects, and/or immiscibility. Of particular interest are methodologies that leverage autonomy, high-throughput experimentation, and machine learning to accelerate the pace of discovery.

Advanced Polymer Networks
Polymer networks find broad utility in defense applications yet suffer numerous limitations due to the nature of their polymerization and the resulting defects that are formed which tend to dominate their mechanical response. New architectures, topologies and synthetic approaches are desired to access polymer networks with limited defects and extraordinary properties. Incorporation of novel molecular mechanisms for energy dissipation, sensing, self-healing, actuation, and recyclability which are triggered by external stimuli such as light, heat, and stress are also wanted. Mechanisms that induce responsiveness and local molecular motion in thermosets below Tg/Tm are of particular interest. New approaches and chemistries for the synthesis of porous crystalline networks are also sought which target new linking groups and backbone chemistry for improved stability, unique functionality, improved mechanical response and/or ease of processing.

TOPIC 6 POC: DR. ROBERT H. LAMBETH, ARO
Email: robert.h.lambeth2.civ@army.mil
(410) 306-0281

Topic 7: Information Processing and Fusion

Program Description: With ubiquitous data acquisition capabilities, effective data and information processing is of critical importance to defense missions. The Information Processing and Fusion program is concerned with the creation of innovative theories and algorithms for extracting actionable intelligence from diverse, distributed multimodal data to support Army operations.

Foundations of Image and Multimodal Data Analysis
Innovative research is sought concerning: (1) novel representations of multimodal data to enable the understanding of multimodal sensor data and contextual information, including nonstandard data types beyond image and video; (2) detection, localization, and recognition of objects and locations from image data with particular emphasis on provable performance guarantees; (3) detection of events, actions, and activities to

extract activity-based intelligence, especially when no extensive training data is available; and (4) integrated approaches that enable semantic descriptions of objects and events including relations. Learning and adaptation should enable the representation at both low and high levels, where inputs from actual users of the systems are used to improve the performance of the algorithms and the fidelity of models at all levels of the modeling hierarchy. Of high interest are methods to exploit the structure of the data, capture its intrinsic dimensionality, and extract information content of data, and which go beyond correlative modeling to incorporate causality, symbolic reasoning, and physics. The development of an "information/complexity theory" and a "learning theory" specific for remote sensing, imaging data, and decision tasks is highly desirable.

Data and Information Fusion

Multimodal data acquisition systems are increasingly prevalent with disparate sensors and other information sources, ranging in design from a finite number of locally grouped sensors to a very large, geographically dispersed sensor network. This thrust seeks advanced mathematical theories and approaches for integrating multimodal data and contextual information to provide actionable intelligence. Of particular interest are systematic and unifying approaches for data and information fusion from diverse sources with heterogeneous fidelities and timescales, varying degrees of overlap, and differing levels of uncertainty. Scalable methods are needed for efficiently handling vast amounts of data, as are methods for preserving data provenance and identifying the key raw data used to generate fused representations or make predictions. Fusion in networked environments addressing issues such as adaptive, distributed, and cooperative fusion is emphasized. Theories and principles for performance analysis and guarantees at all fusion levels to support robust, uncertainty-aware data and information fusion are important to ensure successful military operations.

Active and Collaborative Sensing

Modern sensing systems typically include multiple networked sensors with communication capabilities where the whole network can be thought of as a meta-sensor that can be controlled, in addition to each individual node having some controllable degrees of freedom such as mobility for unmanned aerial/ground systems, pan-tilt-zoom for infrastructure sensors, or waveform for agile radar. Depending on the task or query, it is desirable for the system to control the data acquisition process to acquire the "most informative data" for the specific task or query, to minimize uncertainty, or to identify the type and deployment scheme of additional sensors required. Consequently, of particular interest are methods that address the integration of mobility, sensor-selection, modality selection, and active observation for real-time assessment and improvements of sensing performance. Another research area of interest is performance-

driven active data collection, where a query is given to the system together with a desired performance bound. Where the confidence in answering the query is insufficient, the system should actively interrogate or control sensors to achieve the desired confidence. Such an active learning and information-driven sensor control should include the user in the feedback loop.

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Topic 8: Physical Properties of Materials

P**rogram Description:** The Physical Properties of Materials program seeks to discover novel functional materials and elucidate fundamental mechanisms responsible for achieving extraordinary electronic, photonic/optical, magnetic, and thermal properties in materials to enable future innovative Army applications. There are mainly three focus areas in this program:

Novel Functional Materials Discovery area supports the discovery of novel functional materials with unique compositions and/or structures to realize unique physical properties. Examples of materials include oxides, nitrides, carbides, chalcogenides, super-lattices, free-standing low dimensional (0D, 1D, 2D organic / inorganic) materials, hetero-structures, polymers, organic-inorganic hybrids, co-crystals, etc. Basic research ideas in the areas such as synthesis (thin films as well as bulk materials), modeling, and influence of external stimuli such as light, magnetic field etc. to determine unprecedented functional properties (semiconducting, superconducting, ferroelectric/multiferroic, photonic, magnetic, thermal etc.) are encouraged.

Science & Engineering of Crystal Imperfections area explores the influence (either positive or negative) of various crystalline imperfections (e.g., point, line, area, volume defects etc.) on the physical properties (electronic, optical, magnetic, and thermal) in functional materials. Basic research ideas in the areas such as elucidation of different mechanisms of incorporation/elimination of the defects during thin film growth/bulk materials processing of materials, characterization of novel defects, and influence of them on the extraordinary functional properties of the materials etc. are encouraged.

Novel materials characterization techniques: Development of novel characterization techniques to determine composition- structure- defects- stimuli- property relationships in functional materials.

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Topic 9: Novel, Fast-response, Infrared (IR) Detector Concepts Enabling Higher Temperature Operation

Background: Infrared (IR) imagers operating in the mid-wave infrared (MWIR) (3-5 um) and long-wave infrared (LWIR) (8 – 12 um) enable the Navy and Marine Corps to see long distances in all lighting conditions (day and night) as well as through challenging atmospheric conditions. Typically, these high-performance imagers have detectors that must be cooled between 45 K and 120 K, depending on wave band. This is to enable them to operate at the background limited infrared photon (BLIP) condition. Progress has been made in recent years within semiconductor materials and detector designs to increase this operating temperature. But S&T challenges remain in infrared material selection, crystal growth, and quality, as well as device design optimization that alleviate the need for cryocooled temperature operation.

The second class of detectors most commonly used in the LWIR band for uncooled infrared imaging is the microbolometer. While this design does enable room temperature operation, it's fundamentally limited by the material properties for electrical and thermal conductivity. In the case of the uncooled microbolometers, they are further limiting in the response time and typically must dwell longer per imaging frame compared to a cooled imager. In either case, both of these devices are ultimately limited by photon shot noise from the background leading to an inevitable cooling limit based the desired SNR. The key S&T challenges are in the discovery of a new class of materials and/or microbolometer design that can obviate the fundamental limit of electrical and thermal conductivity and signal sensitivity.

Objectives: This topic aims to increase our fundamental understanding of the physics and quantum limitations of current infrared detection and to explore novel concepts, such as novel architectures, materials, and light-matter interactions, to overcome photon shot noise and BLIP limits without sacrificing response time or sensitivity.
Basic research approaches are sought to explore novel materials platforms for the design of detector architectures that can break the inherent signal to noise sensitivity, temporal bandwidth, and operating

temperature parameters of existing state-of-the-art across a wide infrared spectral range. Research interests include high-gain processes such as avalanche, phonon assisted gain, and stochastic photon methods, although alternative novel concepts are highly desired as well.
Proposals should include high fidelity modeling of material properties that can enable high temperature infrared detector operation, material growth/procurement, detector design and fabrication, and laboratory experimentation to validate modeling predictions.
All proposed concepts should be passive based and improve the fundamental understanding of imaging and detection without the use of active IR illumination.

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Topic 10: Vertical Cloud and Aerosol Profiling

Program Description: This topic solicits novel basic research to characterize vertical profiles of atmospheric particles that affect visibility, including aerosol speciation, cloud and fog microphysics, and multiphase water.

The Marine Meteorology and Space Weather program sponsors innovative research in atmospheric prediction and processes, atmospheric effects, air-sea interaction and boundary layer processes, satellite remote sensing, and ionospheric analysis and prediction. Emphasis is placed on basic research to improve the fundamental understanding of atmospheric processes critical to Navy and Marine Corps operations in maritime and littoral regions.

Particularly, analysis and forecast of three-dimensional visibility in the atmosphere remains a difficult scientific and operational problem. Current approaches are typically limited to coarse derivations of vertically integrated properties. Where there are observations that discriminate in more detail, it is relegated to layer averaged binning, partitioned into coarse/fine mode, and otherwise smoothed out spatially and temporally. There is also limited neighboring spatial and temporal context that limits assessment of lifecyle evolution. Such information also makes it difficult to validate numerical parameterized physics processes and formulate methods to improve skill in predictive models.

To inform how new data and methodologies should be formulated and attained, this call seeks to understand fundamental strengths and weaknesses in how three-dimensional distributions of cloud and aerosol

properties and their changes in time are measured. In particular, efforts should attempt to better sort specific physical properties that distinguish the types and varieties of hydrophobic, hydroscopic, and hydrometeor particles and how those properties vary with the meteorological environment they reside in. Given difficulties in constraining vertical placement and transport of water, cloud condensation nuclei, and aerosol particles, innovative approaches are desired to assess the quality and character of observed three-dimensional atmospheric visibility and the constituents that affect it.

Objectives: Research objectives include, but are not limited to:

- Improved theoretical development on radiative transfer, small scale physics, and/or turbulent processes that modulate injection heights and transport.
- Systematic study or meta-analysis of state of the science field datasets that elucidate the modes of atmospheric visibility and particle distributions with respect to meteorological conditions and source regions.
- Understanding fundamental properties of particle geometry that facilitate synthesis of atmospheric visibility relationships across electromagnetic spectrum, particularly in the near-ultraviolet, optical, infrared, and microwave frequencies.

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Topic 11: Multifunctional Marine Antifouling Surfaces

Program Description: This topic solicits research focused on developing surfaces that improve antifouling (AF) or fouling release (FR) mechanisms.

The ONR Environmental Quality Program addresses challenges in marine antifouling and has previously explored both bioinspired research in textured topographies as well as development of chemically modified surfaces for fouling deterrence. Previous research has shown that textured surfaces are effective when the pattern features are tailored to the biofouling species. They can thus be designed against a specific class of biofoulers and have transitioned to medical implants for in vivo use. However, marine biofouling organisms have highly varied geometries, making viability of this approach challenging. For chemically modified surfaces, tethered biocides provide short-term activity against marine

bacteria, but collected cell debris interrupts biocide interaction with marine settlers and negates biocide efficacy. Another class of chemical surface modifiers, zwitterions, highly hydrate the coating surface and are capable of broadly deterring settlement though mode of deterrence is little understood. Other surface modifiers such as those found in biofilms and natural derivatives are being studied, but these singular approaches are also rendered ineffective when exposed to more complex environments. This is likely because there is a confluence of multiple variables (physical, chemical, biological) in realistic environmental settings that are difficult to mimic with a single AF or FR solution.

Achieving long term antifouling efficacy requires a holistic understanding of the interplay between chemical, biological, and physical modes of fouling deterrence or removal. While current research has been limited to investigating these solutions in isolation, there is now over two decades of literature focused on the development and function of these mechanisms. The area has thus reached a critical mass enabling the study of more complex environments. Anticipated challenges include understanding 1) surface modifier interaction on non-smooth substrates, 2) surface modifier-texture functionalization and interaction at varying scales and geometries, 3) hydrodynamic implications at various scales, and 4) impact on fouling organism approach and settlement.

Objectives: Proposals should explore the design and synthesis of AF/FR approaches leveraging advanced polymers and surface chemistry to achieve superior fouling resistance and/or self-cleaning functionalities as compared to the current state of the art. Approaches should build on past work and may include synergistic combinations of some of the approaches described above. Additional pertinent research questions can explore the relationship between AF/FR attributes at various scales and environmental conditions to potentially include fouling organism settlement mechanisms, hydrodynamic implications, and interfacial chemical organization. Any developed materials should be assessed for marine AF or FR performance and performers are highly encouraged to consider environmental compatibility as well.

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Topic 12: Understanding Mind and Body Relationship Through Respiratory Control

Program Description: Extreme environments such as high altitude, cold weather, undersea and artificial life support affect respiratory performance and can result in significant physiological and cognitive impacts. Increasing the ability to optimize respiratory resilience and adaptation could potentially improve human performance/health in extreme environments. In humans, respiratory activity is a dichotomous system that can be controlled autonomously or through conscious intervention. The autonomic process is fairly well understood due to the fact that the controls are programmed according to chemoresponsive afferent signals in the central nervous system that continuously monitor and modulate blood carbon dioxide, oxygen, and pH levels, providing neuronal signaling to the brainstem to increase or decrease respiratory rate as appropriate. However, conscious stimuli stemming from the cerebral cortex can overrule this physiologic process. Various groups use meditation and similar breath-holding practices to achieve a wide range of physiologic and cognitive outcomes but the mechanisms linking breath control to its psychophysiological effects are still unknown. Furthermore, how long-term control of respiration dynamics affects the thresholds set as a function of the autonomic system is unknown.

Recent research using new physiological monitoring tools in disparate populations such as elite and generational breath-hold divers, marine mammals, high-altitude populations, athletes, and meditation practitioners demonstrate plasticity in respiratory control and suggest that conscious control of breathing patterns influences respiratory performance. Respiratory research has identified biologic and mechanical (muscle training) triggers of the exercise ventilator response but their roles in influencing the plasticity of the ventilator drive are largely unknown.

Objectives: Research is sought to advance the fundamental understanding of controlled respiration in humans and the physiological effects of controlled respiration in comparison with autonomic respiration. Fundamental questions of interest include: 1) What biochemical and/or mechanical features of breath control affect breath patterns and timing? 2) How does conscious breath control affect physiological systems (for instance, heart rate, peripheral and core body temperature changes, whole-body (total) metabolic rate, cerebral metabolic rate/cognitive function, blood gases, pH, etc.)? Lines of inquiry that aim to identify the relative contribution of the various respiratory mechanics variables altered during breath-hold training and their effects on downstream physiologic states of interest (e.g., body temperature, blood gas levels, metabolic rate, etc.) are of interest. Studies may consider such physiological effects at different time scales, from immediate effects during periods of conscious breath control to long-term

physiological effects of consistent breath control practices such as meditation.

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Topic 13: Novel Attachment Methods for Fiber Reinforced Thermoplastics

Program Description: New and improved structures and materials for aerospace applications are required to advance and innovate for naval aviation aircraft and weapons systems, including both manned and unmanned operations. Requirements for naval aviation platforms and weapons are often unique and more stringent than land- and sea- based systems, due to the unique shipboard take-off and landing conditions, as well as the shipboard limits to space and infrastructure for operations and maintenance alike. There remain scientific gaps in the understanding of the complex behaviors, design and development of materials, and associated manufacturing and repair processes for novel and efficient aerostructures.

Objectives: To support these objectives, this particular topic call is for concepts and white papers to address novel, structural joining methods that could potentially enable attachment of thermoplastic fiber reinforced polymers (FRPs) onto extant structural substrates. Current state of the art approaches is either mechanically fastened or adhesively bonded; the interest here is in supporting basic research into novel FRP processing and handling. Approaches of interest include, but are not limited to, the following:

- Thermoplastic to in-situ thermoset, especially for aero composite structures, enabled by novel methods of surface preparation, such as thermal softening, diffusion doping, or chemical activation of extant thermoset polymer matrix composites, or

- Thermoplastic to in-situ metal joining methods, enabled by localized energetic or mechanical joining methods, other than traditional mechanical fastening or chemical adhesive bonding.

White papers will be considered that advance research on joining of FRPs using benchtop studies, novel experimental methods, and/or processing and manufacturing concepts. Science and technology efforts in these areas will enable more efficient structures that are both more durable and more maintainable.

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II. FEDERAL AWARD INFORMATION

The Basic Research Office anticipates up to $15 million in total funding will be made available for this program to fully fund and award up to twenty-five (25) grants up to $600,000 (total cost) each. Each grant award will be funded up to $200,000 (total cost) per year for three (3) years.

Awards are subject to funding availability. There is no guarantee of an award.

Cost sharing or matching is not required or considered as an evaluation criterion, but you may propose voluntary committed cost sharing or matching, for example, additional support for students. Any voluntary committed cost sharing amount will be included in the total award value.

The DEPSCoR-RC award is to an IHE. However, should the awardees transfer IHE, the agency may attempt to accommodate these changes if funds are available and approved by the Basic Research Office. Potential options may include: (1) grant remains at awarded DEPSCoR IHE with a new PI, identified by the DEPSCoR awardee, (2) sub-award to the new IHE of the DEPSCoR awardee (new IHE must be in a DEPSCoR-eligible state/territory), or (3) termination of DEPSCoR grant or any combination of the above. The new PI must meet the stated DEPSCoR-eligibility requirements.

The award start date is determined at the time of the award but is most likely projected for a JUNE 2025 start date.

Authority for award under this competition is established in 10 U.S.C. 4001 for basic research. Regulations, terms, and conditions that will apply to the award can be found in Section VI. Federal Award Administration Information.

A. ADDITIONAL DEPSCoR FUNDING OPPORTUNITIES

In addition to this DEPSCOR - Research Collaboration FOA, the Basic Research Office anticipates funding up to 4 awards under the DEPSCoR – Capacity Building FOA # FOA-AFRL-AFOSR-2024-0007 to support university capacity building activities in DoD-relevant fields. This additional competitive research funding is separate from this announcement and is also set aside for IHEs in DEPSCoR-eligible States/Territories.

You are strongly encouraged to examine and apply directly to this opportunity as well. The full FOA can be found on Grants.gov

III. ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

Though this is a collaboration between the Applicant and Collaborator, the Applicant's IHE will submit the proposal. Both the Applicant's and Collaborator's IHE must be located in a DEPSCoR eligible State/Territory as listed in the table below. Applicant institutions are not limited in the number of applications that can be submitted under this FOA. Applicants (PIs) are permitted to submit only one DEPSCoR-RC White Paper per this DEPSCoR-RC FOA. Each White Paper is permitted a single Applicant and a single Collaborator. Collaborators are allowed to work with more than one Applicant and thus aren't restricted from participating in more than one White Paper. However, please note it is expected that Collaborators serve as a vital component of the proposed team and commit to providing time for research collaboration and mentorship throughout the entire process. All key personnel proposed must hold appointments at an IHE in a DEPSCoR eligible State/Territory. Funds may be used to support students and post docs in DEPSCoR eligible States/Territories that support the research effort for both the Applicant and Collaborator. A small portion of the budget may be allocated through a subaward to non-university partners (such as industry or a National DOE lab) in DEPSCoR-eligible States/Territories, but these proposed costs should be justified in the White Paper.

States/Territories are deemed eligible to submit proposals for DEPSCoR research grants based on meeting both of the following criteria:

Falls into a specific range of DoD R&D S&E funding to IHE in that State/Territory as defined in legislation. All activities supported by a DEPSCoR award must be performed in a DEPSCoR eligible State/Territory. Funding support for the Applicant and any potential subawardees is limited to those with addresses within one or more DEPSCoR eligible States/Territories.

AND

Contains an advanced degree granting program in science, mathematics, and/or engineering.

IHE in 38 States/Territories are eligible to receive awards under this announcement.

IHEs do not need to submit proposals through an EPSCoR State Committee in response to this announcement. Awards made as a result of this announcement will be limited to IHE in States/Territories that are eligible under the DEPSCoR program authority.

STATES/TERRITORIES DoD HAS DETERMINED ELIGIBLE FOR FY24 DEPSCoR AWARDS[1]

Alabama	Delaware	Indiana	Maine	Nebraska	North Dakota	South Carolina	West Virginia
Alaska	District of Columbia	Iowa	Minnesota	Nevada	Oklahoma	South Dakota	Wisconsin
Arizona	Guam	Kansas	Mississippi	New Hampshire	Oregon	Tennessee	Wyoming
Arkansas	Hawaii	Kentucky	Missouri	New Jersey	Puerto Rico	U.S. Virgin Islands	
Connecticut	Idaho	Louisiana	Montana	New Mexico	Rhode Island	Vermont	

The Basic Research Office and AFOSR will review your application, Full Proposal, and Office of Management and Budget (OMB) designated repositories of government-wide public and non-public data, including comments you have made, as required by 31 U.S.C. 3321 and 41 U.S.C. 2313 and described in 2 CFR 200.206 and 32 CFR 22.410 to assess risk posed by applicants, and to confirm applicants are qualified, responsible, and eligible to receive an award.

B. INELIGIBLE ENTITIES

None of the following entity types are eligible to submit proposals as primary award or subaward recipients under this announcement.

1. Federally Funded Research and Development Centers (FFRDCs).
2. Federal agencies (to include Military Educational Institutions).

[1] ***The average annual amount of all DoD obligations for S&E research and development that were in effect with IHEs in the state/territory for the three fiscal years preceding the fiscal year for which the designation is effective or for the last three fiscal years for which statistics are available is less than the amount determined by multiplying 60 percent times the amount equal to 1/50 of the total average annual amount of all DoD obligations for S&E research and development that were in effect with IHEs in the U.S. for such three preceding or last fiscal years, as the case may be.***

C. COST SHARING OR MATCHING

We do not require cost sharing or matching for proposals under this announcement. Cost sharing is not an evaluation or selection criterion.

D. OTHER

1. Employment Requirement

Both the Applicant and Collaborator must hold a tenured or tenure-track position with their IHE, otherwise the White Paper submission must include a letter from the IHE stating that the Applicant or Collaborator (as applicable) will be considered for a tenured or tenure-track position if a short-term appointment is currently held. The team is not eligible to submit a White Paper or Full Proposal if either the Applicant or the Collaborator does not meet this requirement, no exceptions. All key personnel proposed must hold appointments at an IHE in a DEPSCoR eligible state.

2. Prior DoD-Funding Requirement

- You are eligible to apply as the Applicant under the DEPSCoR-RC FOA as long as you were NOT listed as the Principal Investigator on a previous DoD funded research award and are a full-time faculty member in a tenured or tenure track position in a DEPSCoR eligible State/Territory. Being a "Co-PI" or "sub-PI" on a prior DoD funded award does not count as being a "PI" for the purposes of eligibility of the Applicant for the DEPSCoR-RC FOA.

- The DEPSCoR-RC White Paper package must include prior research award documentation which indicates that the Collaborator was a PI on a previous DoD directly funded research Prime award between 1 October 2017 and 30 September 2024. If the Collaborator is not identified as the PI within the award document, a letter from the awarding agency point of contact should be furnished supporting the assertion within the timeframe identified.

- The Collaborator must have served as a Principal Investigator on a directly funded DoD research Prime award during the eligibility period and not have been subcontracted by other PIs, non-DoD entities, or companies as a Co-Principal Investigator. Subawards indirectly funded by the DoD where the Collaborator has served as a Co-Principal Investigator do not

count as eligible criteria for the Collaborator for the purposes of this funding opportunity announcement.

- The flow charts above serve as a guide for determining Applicant and Collaborator eligibility. Each diamond shape is an eligibility criterion question which elicits either a "yes" or "no" response. You are not eligible to submit a White Paper or Full Proposal if any "yes" or "no" response leads to the "Not eligible" outcome. Submissions found to be "Not eligible" will not be subject to technical review. You are not eligible to submit a White Paper or Full Proposal if you do not meet this requirement.

3. Acknowledgment of Support and Disclaimer Requirements

- You must include the VI.C.3. Acknowledgment of Research Support on all materials created or produced under our awards.

- The VI.C.4. Disclaimer Language for Research Materials and Publications must be included on materials as required.

- Our award document may provide additional instructions about specific distribution statements to use when you provide research materials to us. You are not eligible to submit a White Paper or Full Proposal if you cannot accept these terms.

4. Expectation of Public Dissemination of Research Results

We expect research funded by this announcement will be basic research. We expect public dissemination of research results if you receive an award. This is a basic requirement for unclassified research results.

We intend, to the fullest extent possible, to make available to the public all unclassified, unlimited peer-reviewed scholarly publications and digitally formatted scientific data arising from research and programs funded wholly or in part by the DoD as described in the OUSD Memorandum, *"Public Access to Department of Defense-Funded Research"* dated 9 JULY 2014.

We follow DoDI 5230.24 and DoDI 5230.27 policies and procedures to ensure broad dissemination of unclassified research results to the public and within the Government. The DoDI 5230.27 policy and procedures allowing publication and public presentation of unclassified fundamental research results, and DoDD 5230.25 policy and procedures regarding withholding of

unclassified technical data from public disclosure, will apply to all research proposed under this competition unless the Basic Research Office gives you an explicit, written exclusion to these policies with the Grants Officer's advice and consent. All exclusions must be authorized or required by law and must cite a valid legal authority.

You must provide a copy of all peer-reviewed publications developed or produced from research conducted with DoD funds to the Basic Research Office.

You are not eligible to submit a White Paper or Full Proposal if you cannot accept these terms.

5. Conflict of Interest (COI) / Conflict of Commitment (COC)

Definitions

- **Conflict of interest (financial conflict of interest):** is a situation in which an individual, or the individual's spouse or dependent children, has a financial interest or financial relationship that could directly and significantly affect the design, conduct, reporting, or funding of research.[2]

- **Conflict of commitment (non-financial conflict of interest):** is a situation in which an individual accepts or incurs conflicting obligations between or among multiple employers or other entities. Many institutional policies define conflicts of commitment as conflicting commitments of time and effort, including obligations to dedicate time in excess of institutional obligations, including obligations to improperly share information with, or withhold information from, an employer or funding agency, can also threaten research security and integrity, and are an element of a broader concept of conflicts of commitment.[3]

6. General Requirement for Disclosure

You and your IHE must disclose any potential or actual scientific or nonscientific COI/COC to us. You must also disclose any potential or actual COI/COC for any sub-recipient you include in your Full Proposal. You must provide enough information for us to

[2] The White House Office of Science and Technology Policy, Enhancing the Security and Integrity of America's Research Enterprise (Washington, D.C.: June 23, 2020).
[3] The White House Office of Science and Technology Policy, Enhancing the Security and Integrity of America's Research Enterprise (Washington, D.C.: June 23, 2020).

evaluate your disclosure. We may have to ask you more questions if we need more information.

Any decision to accept a proposal for funding under this announcement will include full reliance on your disclosures. Failure to report fully and completely all sources of project support and outside positions and affiliations may be considered a materials statement within the meaning of the federal False Claims Act and constitute a violation of law.

The funding agency may conduct a pre-award COI/COC review of any proposal selected for funding, as defined in NSPM-33. Any significant COI/COC identified may be a basis for the rejection of an otherwise awardable proposal.

At our discretion, we may ask you for a COI/COC mitigation plan after you submit your Full Proposal. Your plan is subject to our approval.

7. Scientific COI/COC

Scientific collaborations on research and development projects are generally the result of close collaboration prior to the submission of applications for support. Accordingly, these collaborations should be given consideration for potential conflicts of interest and commitment, and any undue influence on the integrity of research, national security, and economic security. A potential conflict is mitigated by the appropriate disclosure of these collaborations, foreign affiliations, associations, and activities, and the list of current and pending support you provide for senior and key researchers for both prime and sub-recipients.

Examples that increase risk and can harm the DoD research enterprise.

Failures to disclose:

- Financial conflicts of interest (both domestic and foreign)
- Conflicts of commitment
- External employment arrangements
- Financial support that overlaps with U.S. funding
- Shadow laboratories or other parallel research activities
- Diversion of intellectual property
- Peer review violations

Examples of Behaviors that May Violate Laws:

- Theft or diversion of materials and intellectual capital
- Grant fraud

E. PROGRAM ELIGIBILITY SUMMARY

Please refer to the flow charts in Collaboration Composition (Section I.B) and the Eligibility Checklist questions below (Section IV.B) that serve as a guide for determining Applicant and Collaborator eligibility.

IV. APPLICATION AND SUBMISSION PROCESS

The application and submission process are completed **in three stages**:

1. Completed online registration via RunGrants. **(Required)**

2. White Paper and Supporting Documentation submission via RunGrants. **(Required)**

3. Full Proposal Submission Package. **(via grants.gov - Required)** (This is by invitation only. Must include acceptance email as an attachment in block 20 of the SF424.)

A. ONLINE REGISTRATION VIA RunGrants

The RunGrants Online submission portal opens on **Tuesday, 16 April 2024.** It is strongly encouraged that you register on the RunGrants website no later than **11:59 PM Eastern Time on Thursday, 20 June 2024** (see Section IV.G.5 Submission Dates and Times).

Note: If you previously registered at the nVision portal, you would need to update your user account using the same user email in the RunGrants portal. You will be asked to update your user account with two-factor authentication. Please see the RunGrants website for more details on this process (https://dod-basicresearch.**nvision.noblis.org**/program/depscor).

While registration in RunGrants and submission of your White Paper can be done at the same time, we HIGHLY recommend that you register in RunGrants and submit your White Paper and supporting documentation well before the deadline in case you encounter any questions or problems.

There are two DEPSCoR competitions running concurrently. Make sure you are applying for this DEPSCoR – Research Collaboration FOA-AFRL-AFOSR-2024-0007.

B. WHITE PAPER AND SUPPORTING DOCUMENTION SUBMISSION

During the RunGrants submission process, you will be asked to verify eligibility by answering a series of questions in an "Eligibility Checklist." If you (Applicant) or your Collaborator are determined to be ineligible, you will not be permitted to submit a White Paper. We encourage you to start the submission process early and confirm eligibility as soon as possible.

The Eligibility Checklist questions:

- Are the Applicant/Principal Investigator (PI), henceforth referred to as Applicant, and Collaborator/co-Principal Investigator (co-PI), henceforth referred to as Collaborator, faculty at Institutions of Higher Education (IHE) in a DEPSCOR eligible State/Territory and with an advanced degree granting program in science, mathematics, and/or engineering?
- Applicant - [Fill in Name of Institution] - [Fill in Eligible State/Territory]
- Collaborator [Fill in Name]
- Collaborator [Fill in Name of Institution] - [Fill in Eligible State/Territory]
- Is the Applicant a full-time tenured or tenure-track faculty member?
    - If not in a tenure-track position, is there a qualifying letter from the IHE stating the Applicant will be considered for a tenured or tenure-track position?
        - If applicable, a qualifying letter for the Applicant will need to be uploaded to RunGrants.
- To be eligible to serve as the Applicant, the individual must have never served as a PI on a prior DoD directly funded research Prime award. Is this statement applicable to the Applicant?"
    - NOTE: If you served as a Principal Investigator on a research Subaward indirectly funded by the DoD, you still qualify to serve as an Applicant."
- Is the Collaborator a full-time tenured or tenure-track faculty member?
    - If not in a tenured or tenure-track position, is there a qualifying letter from the IHE that you can furnish stating the Collaborator will be considered for a tenured or tenure-track position?
        - If applicable, a qualifying letter for the Collaborator will need to be uploaded to RunGrants.
- Has the Collaborator served actively as a Principal Investigator on a prior DoD directly funded research Prime award between

1 OCTOBER 2017 and 30 SEPTEMBER 2024 of which they will furnish a copy as proof?
    - NOTE: If you served ONLY as a PI or Co-PI on a research Subaward indirectly funded by the DoD, this does not satisfy the qualification requirements to serve as a DEPSCoR Collaborator.
- Is the Collaborator identified as the PI on the face of the award document? [Provide Research Project: [Fill in Title] - [Fill in Collaborator's Research Project Prime Award Number]
    - If not, is there a qualifying letter from the awarding agency POC that states they served as Principal Investigator on the award between 1 OCTOBER 2017 and 30 SEPTEMBER 2024?
        - A copy of the complete award document supporting this claim, or a qualifying letter will need to be uploaded to RunGrants.
- Will the Collaborator provide active mentorship & guidance to the Applicant?
- Have all criteria on this list been marked Yes? Anything marked No is a disqualifier and will be determined a non-eligible factor.
- The undersigned (Applicant) states to the best of their knowledge and belief, that they have completed this eligibility checklist in accordance with the criteria in the FOA.

You will not be able to proceed with the rest of the submission process if you or your Collaborator are determined to be ineligible.

White Papers and Supporting Documentation are a **MANDATORY** component for this three-stage application and submission process to minimize the labor and cost associated with the production of detailed Full Proposals that have very little chance of being selected for funding.

If you do not register and submit a White Paper and Supporting Documentation before the due dates and times, you will not be eligible to participate in the remaining Full Proposal submission process and are not eligible for funding.

To submit White Papers and Supporting Documentation, **you are strongly encouraged to register** on RunGrants (https://dod-basicresearch.**nvision.noblis.org**/program/depscor) **by 11:59 PM Eastern Time on Thursday, 20 June 2024** (see Section IV.G.5 Submission Dates and Times).

White Papers and Supporting Documentation **must be submitted** to RunGrants

(https://dod-basicresearch.**nvision.noblis.org**/program/depscor) **by 11:59 PM Eastern Time on Monday, 24 June 2024** (see Section IV.G.5 Submission Dates and Times).

The submission process could take several minutes depending on the network connection and the size of the file being submitted. You are responsible for allowing enough time to complete the online form, uploading the documents, and pressing the submit button before the deadline. An email confirmation will be sent to the applicant upon receipt of the submission.

Documents submitted after the deadline or found to be non-compliant will not be reviewed.

Evaluation of the White Paper will be issued via email notification. You are ineligible to submit a Full Proposal package under this FOA if your White Paper was not identified as being of "particular value" to the DoD.

Only electronic submissions will be accepted and reviewed.

C. CONTENT AND FORMAT OF THE WHITE PAPER

1. Pre-White Paper Inquiries and Questions

For help with technical matters, you should contact the Program Officer (PO) identified as the POC for your topic of interest as listed in section I.C. TOPICS. All technical discussions must take place prior to White Paper submission. After the White Paper deadline, applicants may no longer contact the Program Officers listed in section I.C.TOPICS.

If you have general questions about this announcement or administrative matters, **please submit your question in writing by email** to the **Grants Officer** (see section VII.B GENERAL INQUIRIES AND QUESTIONS).

The PO does not have the authority to make commitments. Grants Officers acting within their warranted capacity are the only people authorized to make commitments for the Government.

2. White Paper and Supporting Documentation (as a whole)

White Papers and Supporting Documentation submitted under this FOA are expected to be unclassified; classified proposals are not permitted.

All White Paper submissions will be protected from unauthorized disclosure in accordance with applicable law and DoD regulations. You are expected to appropriately mark each page of the submission that contains proprietary information.

IMPORTANT NOTE: Titles given to White Papers should be descriptive of the basic research they cover and not be merely a copy of the topic title.

Applicants must submit the following White Paper and supporting documentation components. All components are required unless specified "when applicable":

(1) White Paper (required)
- Cover Page
- Abstract
- Program Description Narrative
- Collaboration Composition Statement
- Basic Research Statement
- Anticipated human subjects or vertebrate animals subject research, when applicable
- [2] Curriculum Vitae (2-page limit each) for Applicant and Collaborator
- [2] Previous DoD Funding List. List all previous DoD research relevant funding[4] for both the Applicant and Collaborator**. If the Applicant has no prior DoD funding, the following statement must be included, "The Applicant has never received DoD funding."**

(2) Previous Collaborator Prime Research Award Document (required)

(3) Qualifying Letter(s) (when applicable)

Each White Paper and Supporting Documentation component is described in detail in Section 4 "White Paper Package." All Applicants must submit their White Paper Package using the guidelines established in Section 4.

3. Marking Requirements for Confidential Proprietary Information

You must mark any White Paper sections that contain proprietary or confidential information. However, under Freedom of

[4] These are examples of DoD research relevant funding sources and do not represent a comprehensive list: Air Force Office of Scientific Research, Army Research Office, Office of Naval Research, Air Force Research Laboratory, Army Research Laboratory, U.S. Naval Research Laboratory, Defense Advanced Research Projects Agency, Defense Threat Reduction Agency.

Information Act (FOIA) requirements, some or all proposal information may be subject to release.

Your entire White Paper, or any portions thereof, without protective markings or otherwise identified as requiring protection will be considered voluntarily furnished to us without restriction and will be treated as such for all purposes. White Papers may be disclosed to reviewers for training purposes in future competitions.

4. White Paper Package

The due date for receipt of White Papers and Supporting Documentation is **by 11:59 PM Eastern Time on Monday, 24 June 2024** (see Section IV.G.5 Submission Dates and Times)**.** White Papers received after the published deadline will not be considered under any circumstance. Early submission of White Papers is welcomed and highly encouraged.

All documents in the White Paper package must be submitted in PDF format in compliance with the guidelines and file naming conventions below. When submitting the White Paper and Supporting Documents, you must upload the following as three (3) separate PDF files:

(1) White Paper (required)
(2) Previous Collaborator Prime Research Award Document (required)
(3) Qualifying Letter(s) (when applicable)

White Paper (required):

a. ***Cover page*** (one (1) page limit, single-sided): Include your name, IHE, proposed title, topic number addressed, and the name of the program officer contacted about the proposed work (if engaged). Include a protective legend for proprietary information, if applicable.

b. ***Abstract*** (not to exceed 500 words): Describe the research problem and objective, technical approaches, and anticipated outcomes of the research. The abstract must be submitted without proprietary restrictions. Therefore, this non-proprietary abstract must be a version that is releasable under the Freedom of Information Act without changes.

c. ***Program Description Narrative*** (three (3) page limit, single-sided): State the defense challenge or topic area of research.

Describe the basic scientific research approach. Summarize the state of the field and describe what is innovative about the proposed approach. What results, new knowledge, or insights might this approach afford compared to alternate approaches other researchers in this field have taken? Include approximate yearly costs for the project. Reference citations are not required but may be included within the three-page limit.

d. ***Collaboration Composition Statement*** (one (1) page limit, single-sided): Describe the composition of the collaboration and how the Collaborator will provide mentorship. Describe how the collaboration fulfills the purpose of DEPSCoR.

e. ***Basic Research Statement*** (one (1) page limit, single-sided): Describe how the proposed research meets the DoD definition of basic research. Describe the extraordinary outcomes that may be achieved as a result of the proposed project.

f. ***Identify anticipated human subject or vertebrate animal subject research*** (one (1) page limit, single-sided) (where applicable).

g. ***Curricula Vitae*** (CVs) (two (2) page limit each, single-sided): The Applicant **and** Collaborator must **each** submit a two (2) page limit CV. The CV should include educational degrees, organizational affiliations, academic, professional or institutional appointments, whether or not remuneration is received, and whether full-time, part-time, or voluntary, paid consulting that falls outside of an individual's appointment, separate from the institution's agreement, relevant experience, collaborations, publications, foreign affiliations, associations, and activities, and a list of current and pending funding support received in the area of interest, and any previous involvement and experiences with the DoD.

h. ***Lists of all previous DoD research relevant funding active between 1 October 2017 and 30 September 2024 for both the Applicant and the Collaborator. The lists should include project title(s), award number(s), and the name of the PI on each listed award. The role of each the Applicant and Collaborator must be demonstrably noted for each prior DoD funded award such as PI, co-PI, etc. This list must be furnished for both the Applicant and Collaborator. If the Applicant has no prior DoD funding, the following statement must be included, "The Applicant has never received DoD funding."***

Items a – h constitutes the White Paper and must be included in the White Paper package. The White Paper must be submitted in the following format as a single PDF file with the following naming convention:

- Applicant Last Name_First Name_DEPSCoR FY24RC

Previous Collaborator Prime Research Award Document (required)

i. ***Provide a copy of at least one Collaborator DoD directly funded research Prime Award active between 1 October 2017 and 30 September 2024 where the Collaborator served as the PI***. "Co-PIs", "sub-PIs", and "Site Leads" do not qualify. Having served as a PI on a research Subaward that is indirectly funded by the DoD does not count for the purposes of this funding opportunity announcement. That is, the Collaborator **must be listed** as the PI on the previous research award directly from the DoD or its agencies. Only one prior qualifying research award is required, however you may submit as many as you would like. If a copy of the DoD research award cannot be furnished, a letter from the awarding agency point of contact should be furnished supporting the assertion within the timeframe identified.

Item i constitutes the previous Collaborator prime research award document and must be included in the White Paper package. The prime research award document(s) must be submitted in the following format as a single PDF file with the following naming convention:

- Applicant Last Name_First Name DEPSCoR FY24RC_award

j. ***Qualifying Letter (when applicable):*** The Applicant and Collaborator must both hold a tenured or tenure-track position with their respective IHE. If otherwise, a letter from the IHE stating that the Applicant or Collaborator will be considered for a tenured or tenure-track position must be included.

Item j constitutes as the Qualifying Letter(s) and must be included in the White Paper package, when applicable. Qualifying Letter(s) must be submitted in the following format as a single PDF file with the following naming convention:

- Applicant Last Name_First Name DEPSCoR FY24RC_letter

Documents must be submitted in the following format as two (or three) PDF files:

- Paper Size – 8.5 x 11-inch paper
- Margins – 1 inch
- Spacing – single-spaced
- Font – Times New Roman, 12 points
- Use the file naming conventions for White Paper, Previous Collaborator Prime Research Award Document, and Qualifying Letter(s) specified above.

Concurrent submission of a proposal to other organizations will not prejudice review. Send any changes as they become known.

D. FULL PROPOSAL SUBMISSION PACKAGE

1. Full Proposal Packages will only be accepted from collaborations invited to submit proposals.

All the application forms you need are available electronically on Grants.gov. From the "View Grant Opportunity" page, you can click on the "Package" tab to download the application package. These same application forms will also be available in the "Related Documents" tab to download individually.

We will not issue paper copies of this announcement.

Full Proposal packages must be submitted electronically to Grants.gov **no later than 11:59 p.m. Eastern Time on Monday, 25 November 2024** (see Section IV.G.5 Submission Dates and Times).

Please contact us to request a reasonable accommodation for any accessibility requirements you may have.

2. Content and Form of Application Submission

a. The application as a whole

You must submit your Full Proposal electronically through Grants.gov. We will not accept or evaluate any proposal submitted by any means other than through Grants.gov. We

must receive your Full Proposal before the IV.G.1. Full Proposal Submission Deadline.

DO NOT password protect any attachments.

You must use the electronic Standard Form (SF) 424 Research and Related (R&R) Form Family, OMB Number 4040-0001. The SF 424 (R&R) Application for Federal Assistance form must be your cover page. No pages may precede the SF 424 (R&R). You must mark your application with the FOA number.

b. A summary of what is required for a complete proposal is summarized below:

- **We require the forms and attachments in bold text with all applications.**
- *Some applications require the attachments in italic*
- We provide more instructions in IV.D.3. Component Pieces of the Application

R&R FORM, OMB No. 4040-0001	FIELD	ATTACHMENT
SF 424 (R&R) Application for Federal Assistance, including an authorized signature (Required)	*18*	*Disclosure of Lobbying Activities (SF-LLL) (If Applicable)*
	20	**Invitation email to submit a Full Proposal (Required)**
	21	Cover Letter Attachment (Not Required)
R&R Other Project Information Form (Required)	**7**	**Project Summary / Abstract (Required)**
	8	**Attach the Project Narrative (Required)**
	9	**Bibliography & References Cited (Required)**
	10	*Facilities and Other Resources (If Applicable)*
	11	*Equipment Justification (If Applicable)*
	12	**Other Attachments:** *Data Management Plan (Optional)* **Letter of Support (Required)**
R&R Senior/Key Person Profile Form Expanded (Required)		**Biographical Sketch (Required)** **Current & Pending Support (Required)**
R&R Budget Form (Required)		**Budget Justification (Required)**
R&R Subaward Budget (If Applicable) Attachments Form		*Subaward Budget Justification (If Applicable)*
R&R Project/Performance Site Locations Form (Required)		**None**
R&R Personal Data (Required)		**None**

The SF 424 (R&R) must include the signature of an authorized representative from your IHE. The signature is affixed electronically by Grants.gov upon submission. This signature is considered the signature for the application as a whole.

c. Proposal Format

- Paper Size – 8.5 x 11-inch paper
- Margins – 1 inch
- Spacing – 1.5-line spacing
- Font – Times New Roman, 12 points
- Page Limitation – please see proposal length below
- Content – As described below

d. Proposal Length

Your required Publicly Releasable Project Summary/Abstract must not exceed 500 words. Your Statement of Objectives must not exceed one (1) single-sided page. Your Research Effort section must not exceed twelve (12) single-sided pages. The optional Data Management Plan must not exceed two (2) single-sided pages. We will not consider more than the maximum number of pages in our evaluation.

You must not include elaborate brochures, reprints, or presentations beyond those sufficient to present a complete and effective proposal.

We created this table to help you understand how to calculate your page count.

INCLUDED IN PAGE COUNT	NOT INCLUDED IN PAGE COUNT
Publicly Releasable Project Summary/Abstract (Required) must not exceed 500 words Statement of Objectives (Required) must not exceed one (1) single-sided page Research Effort (Required) must not exceed twelve (12) single-sided pages Data Management Plan (Optional) must not exceed two (2) single-sided pages	Everything else

You must include enough budget related information in your Full Proposal to support your costs as necessary, reasonable, allocable, realistic, and in compliance with 2 CFR 200 Subpart E – Cost Principles

Not having enough information in your Full Proposal to understand if your costs are necessary, allowable, reasonable, allocable, and realistic is the most common reason awards are delayed.

e. Marking Requirements for Confidential or Proprietary Information

You must mark the proposal sections that contain proprietary or confidential information. However, under the Freedom of Information Act (FOIA) requirements, some or all proposal information may be subject to release.

Your entire proposal, or any portions thereof, without protective markings or otherwise identified as requiring protection will be considered voluntarily furnished to us without restriction and will be treated as such for all purposes.

f. Advance Preparation for Electronic Submission through Grants.gov

Your Full Proposal must be submitted electronically through Grants.gov. You should verify that the person authorized to submit proposals for your organization has completed Grants.gov registration well in advance of the submission deadline. Grants.gov electronic proposal submissions cannot be accomplished before your organization is fully registered. Registration with Grants.gov may take up to twenty-one (21) days.

- A Grants.gov getting started checklist is available at: https://www.grants.gov/applicants/grant-applications/how-to-apply-for-grants

- Guidance for registering with Grants.gov as an organization may be found at: https://www.grants.gov/applicants/applicant-registration

- Questions relating to the Grants.gov registration process, system requirements, how an application works, or the

proposal submittal process can be answered by email at support@grants.gov, telephone at 1-800-518-4726, or at https://www.grants.gov/support

- An active System for Award Management (SAM) registration and SAM issued Unique Entity Identifier (UEI) are required to register through Grants.gov Section IV.F.1 SAM Registration Required provides more information.

3. Component Pieces of the Application

IMPORTANT NOTE: Titles given to proposals should be descriptive of the basic research they cover and not be merely a copy of the topic title.

a. SF-424 Form (R&R) Application for Federal Assistance (Required)

The SF 424 (R&R) Application for Federal Assistance form must be your cover page. No pages may precede the SF 424 (R&R).

Complete all required fields in accordance with the "pop-up" instructions on the SF 424 (R&R) form. You can turn on Grants.gov "Help Mode" to provide additional instructions for forms. "Help Mode" is turned on by the icon with the pointer and question mark at the top of the form.

We have special instructions for completion of several SF 424 (R&R) form fields in your application.

Our instructions are:

FIELD	INSTRUCTION
2.	You may leave "Applicant Identifier" blank
3.	You may leave "Date Received by State" and "State Application Identifier" blank
4.	For block 4.a. Federal Identifier - Enter "FA9550" For block 4.b. Agency Routing Identifier – Enter the Topic # and Program Officer's name (last name first) in brackets (e.g., Topic # 14 [Doe, Jane]). For block 4.c. Previous Grants.gov Tracking ID – If this submission is for a changed/corrected application, enter the Grants.gov tracking number of the previous proposal submission; otherwise, leave blank.
5.	Application Information: DoD agencies recommend that organizations provide a global business address
7.	Complete as indicated.

9.	You must list Air Force Office of Scientific Research as the reviewing agency if Grants.gov has not pre-populated this answer.
10.	You must list the Catalog of Federal Domestic Assistance Number as "12.431" and the title as "Basic Scientific Research" if Grants.gov has not pre-populated this answer.
12.	The award start date is determined at the time of the award but is most likely projected for JUNE 2025. The award ending date will be 3 years after.
16.	You should check "No." and "Program is Not Covered by Executive Order 12372".
17.	All awards require some form of certifications of compliance with national policy requirements. By checking "I Agree" on the SF 424 (R&R) block 17 you agree to abide by the following statement: "By signing this application, I certify the proposing entity is in compliance with Section 223(a) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 which requires that: (a) the PI and other key personnel certify that the current and pending support provided on the proposal is current, accurate and complete; (b) agree to update such disclosure at the request of the agency prior to the award of support and at any subsequent time the agency determines appropriate during the term of the award; and (c) the PI and other key personnel have been made aware of the requirements under Section 223(a)(1) of this Act. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. code, Title 18, Section 1001)."
18.	**Disclosure of Lobbying Activities (SF-LLL)** **(If Applicable)** If you have lobbying activity that you must disclose under 31 U.S.C. 1352 as implemented by the DoD in 32 CFR Part 28, you must attach the completed Disclosure of Lobbying Activities (SF-LLL) to field 18 of the SF 424 (R&R). Instructions for completing this form are available here. If you do not have lobbying activities to disclose, you do not need to complete the SF-LLL. **Grants Certifications (Required)** You must attach your completed Grants Certifications Report from SAM.gov to field 18 of the SF 424 (R&R). Concatenate these documents, if necessary, into a single document and attach the concatenated document to Field 18.

b. R&R Other Project Information Form (Required)

Complete this form as indicated. You must include all necessary attachments. Additional guidance on each field on the form is located here.

FIELD	INSTRUCTION
1, 1a.	You must address all prospective human subject involvement by answering these questions. Additional documentation pursuant to National Policy, DoD and U.S. Air Force standards is required for all proposals with human use or involvement. Your inquiries about our human subject requirements should be sent by email directly to the DEPSCoR Program Manager who will coordinate an answer with the Air Force Human Research Protections Official [AFRL.IR.HRPO@us.af.mil]
2, 2a.	You must address all prospective animal subject and/or recombinant deoxyribonucleic acid (rDNA) involvement by answering these questions. Additional documentation pursuant to National Policy, DoD and U.S. Air Force standards is required for all proposals with animal or rDNA use or involvement. Your inquiries about our requirements should be sent by email directly to our Research Protections Officer at **michael.r.bonhage.mil@health.mil** with a copy to the DEPSCoR Program Manager.
3.	Is proprietary/privileged information included in the application? Select "Yes" or "No".
4a.	For any proposal that has an actual or potential impact on the environment, answer yes and provide the answers and attachments required for fields 4b, 4c, and 4d. Additional documentation in accordance with National Policy and U.S. Air Force standards is required for any proposal with an actual or potential impact on the environment.
5.	Is the research performance site designated, or eligible to be designated, as a historic place? Select "Yes" or "No".
5.a.	If you checked the "Yes" box indicating any performance site is designated, or eligible to be designated, as a historic place, provide the explanation in Block 5.a.
6.	Does this project involve activities outside of the United States or partnerships with international collaborators? Select "Yes" or "No".
6.a.	If you checked the "Yes" box identify the countries with which international cooperative activities are involved.
6.b.	Enter an explanation for involvement with outside entities (optional).
7.	Attach your IV.D.3.c. Publicly Releasable Project Summary/Abstract to field 7 (Required).
8.	Attach your IV.D.3.d. Project Narrative to field 8 (Required).
9.	Attach your IV.D.3.e Bibliography and References Cited to field 9 (Required).
10.	Attach your IV.D.3.f. Facilities & Other Resources description document here if you need to supplement your IV.D.3.d.4. Project Narrative Facilities and Resources section to field 10 (If Applicable).

11. You may supplement your IV.D.3.i. Budget Justification by attaching an IV.D.3.j. Equipment Justification (If Applicable) to field 11. Do not duplicate information included on your budget justification. If you attach an Equipment Justification, make sure you reference the attachment in your budget justification.

12. Other Attachments –

    Attach your IV.D.3.k. R&R Sub-award Budget Attachments Form to field 12 (If Applicable).

    Attach your IV.D.3.o. Data Management Plan to field 12 (Optional).

    Attach your IV.D.3.p. Letter of Support to field 12 (Required).

c. Publicly Releasable Project Summary/Abstract (Required)

You must attach the Project Summary/Abstract to field 7 of the R&R Other Project Information form.

You should identify the Program Officer and topic area your proposed research falls under (see section I.C. TOPICS).

You must provide a concise abstract no more than 500 words with your Full Proposal. Do not include proprietary or confidential information. The project summary/abstract must be marked by the applicant as "Approved for Public Release." The abstract should use terms the public can understand to describe the research objective, technical approach, anticipated outcome, and potential impact of the specific research.

Use only characters available on a standard QWERTY keyboard. Spell out all Greek letters, other non-English letters, and symbols. Graphics are not allowed.

Abstracts of all funded research projects will be posted on the public DTIC website: https://discover.dtic.mil/

d. Project Narrative (Required)

You must attach your Project Narrative to field 8 of the R&R Other Project Information Form. The narrative must be complete and self-contained to qualify for review. Concatenate these documents, if necessary, into a single document and attach the concatenated document to field 8.

You must identify the Program Officer and topic number your proposed research falls under. You must clearly describe your research, including your research objective and approach. Your project narrative will be evaluated using the criteria listed in section V.A CRITERIA. You should show strength in as many of the evaluation and selection areas as practicable to demonstrate maximum competitiveness.

Your narrative should include the following elements:

1. **Statement of Objectives – must not exceed a single page**

   You must summarize your proposed research on a single page titled "Statement of Objectives." We may decide to incorporate your statement of objectives into the award as a description of the work instead of incorporating the whole technical proposal.

   You should use active verbs when you prepare the statement of objectives, e.g., "conduct" research in a subject area, "investigate" a problem, "determine" to test a hypothesis.

2. **Research Effort – must not exceed twelve (12) single-sided pages, please number them.**

   This section must not be longer than twelve (12) single-side pages. Please number them. The Basic Research Office will not review proposals that exceed this page limit.

   You should describe the basic scientific or technical concepts that will be investigated in great detail. State the research objectives and approach, and the relationship and comparable objectives to research progress elsewhere. Describe your research team's knowledge in the field. Discuss the nature of the expected results.

   The adequacy of this information will influence the overall evaluation in accordance with the criteria and procedures specified in section V. APPLICATION REVIEW INFORMATION below.

3. **Applicant (PI), Collaborator (co-PI), and Senior/Key Personnel Time**

a. You must provide an estimate of the time the Applicant and Collaborator will devote to the research. Your estimate must include information pertaining to the proportion of time anticipated to be devoted to this research, to other research, and to other commitments of time such as sabbatical, extended leave, and teaching duties.

You should budget time for two required trips per year to DEPSCoR-related activities, which include attending a program review (Washington, DC area) and participating in a DoD-organized workshop (in a nearby metropolitan area).

b. All key personnel proposed must hold appointments at an IHE in a DEPSCoR eligible state.

c. State the number of graduate students that will engage in the project for whom each senior staff member is responsible.

d. If the Applicant, Collaborator, or other Senior/Key personnel have current, pending, or expected research supported by other sources (e.g. Federal, State, local or foreign government agencies, public or private foundations, industrial or other commercial organizations) during the period you seek our support the following information must be provided for each project:

<u>List of Current and Pending Support:</u>

- Title of Proposal and Summary.
- Source and amount of funding (provide contract and/or grant numbers for current contracts/grants, annual direct & indirect costs, the total award amount for the entire award period covered (including indirect costs), and the number of person-months or labor hours per year to be devoted to the project, regardless of source of support.
- Percentage of effort devoted to each project.
- Identity of prime applicant and complete list of subawards, if applicable.
- Technical contact (name, address, phone, electronic mail address).

- Period of performance (differentiate basic effort).
- The proposed project and all other projects or activities requiring a portion of time of the Applicant (Principal Investigator) and other Senior Personnel. This must be included, even if they receive no salary support from the project(s); and
- State how project(s) is/are related to the proposed effort and indicate degree of overlap.

Concurrent submission of a proposal to other organizations will not prejudice review. Send any changes as they become known.

4. Your Facilities

a. Describe the facilities available for performing the proposed research, and any additional facilities or equipment the organization proposes to acquire at its own expense for the work.

b. Indicate any government-owned facilities that will be used. Indicate any government-owned equipment possessed presently that will be used. The facilities contract number, or in absence of a facilities contract, the specifics of the facilities or equipment, and the number of the award under which they are accountable are required.

c. Government Furnished Equipment: List any special Government-owned property or test equipment possessed or required to complete the research. When possible and practicable, give a description or title for each item, the current location, and an estimated cost as applicable. If you do not have information about individual items, group items you require by class and provide an estimate of values.

e. Bibliography and References Cited (Required)

You must attach your narrative Bibliography and References Cited to field 9 of the R&R Other Project Information Form.

f. Facilities & Other Resources (If Applicable)

Attach a Facilities and Other Resources description document to field 10 of the R&R Other Project Information Form if you need to supplement your IV.D.3.d.4. Project Narrative Facilities and Resources section.

g. R&R Senior/Key Person Profile Form Expanded (Required)

You must list all key persons proposed for the research effort on the R&R Senior/Key Person Profile (Expanded) Form. Senior/Key Persons are generally the Applicant, Collaborator, and Senior Staff. All key personnel proposed must hold appointments at an IHE in a DEPSCoR eligible state.

Failure to submit this information may cause the proposal to be returned without further review.

This information will be used to support protection of intellectual property, controlled information, senior/key personnel, and information about critical technologies relevant to national security. Additionally, this information will be used to limit undue influence, including foreign talent programs, by countries that desire to exploit United States' technology within the DoD research, science and technology, and innovation enterprise.

You must attach a short biographical sketch and list of significant publications (vitae) for each Senior/Key Person, whether or not the individuals' efforts under the project are to be funded by DoD.

You must also attach the list of current and pending support from the Project Narrative.

h. R&R Budget Form (Required)

You must provide all information requested. You must estimate the total research project cost. You must categorize funds by year and provide separate annual budgets for projects lasting more than one year. A **budget justification** must be attached.

You must include enough budget related information in your Full Proposal to support your costs as necessary, allowable,

reasonable, allocable, realistic, and in compliance with 2 CFR 200, Subpart E – Cost Principles.

Not having enough information in your proposal to understand if your costs are necessary, reasonable, allocable, and realistic is the most common reason awards are delayed.

i. Budget Justification (Required)

You must provide a detailed budget justification for each year that clearly explains the need for each item. The entire budget justification and supporting documentation must be combined into a single file and attached to field L of the R&R Budget Form. The budget narrative submitted with the application must match the dollar amounts on all required forms. Please explain each calculation and provide a narrative that supports each budget category. This detailed budget justification must match the proposed budget categories. Each year of the budget justification narrative must stand alone; lump sum budget justifications are not allowed. If options are proposed, option detailed budget justifications must stand alone as well, no lump sum justifications allowed.

You **must** itemize travel. State the purpose of each trip proposed, the number of trips, the number of travelers, the destination, the duration, and the basis for calculating costs such as airlines and hotels. Proposed per diem should not exceed GSA or State Department standards for the location.

You **must** itemize materials, supplies, and equipment. List all material/equipment by type and kind with associated costs. Indicate what your costs are based on, such as vendor quotes, historical data and/or engineering estimates. **You should include vendor quotes and/or catalog pricing data**.

Proposals including requests to purchase equipment **must** include equipment quotes or vendor agreements. "Equipment" is nonexpendable, tangible personal property with a unit cost of $5,000 or more having a useful life of more than 1 year. Items that do not meet the "equipment" definition can be included under supplies. List each piece of equipment to be purchased and provide a description of how it will be used in the project. The budget narrative should explain why the equipment is necessary for successful completion of the project. Provide quotes in the English language (US Dollars) if available or indicate the basis of the equipment cost. If you have any sub-

award(s), you should describe how you determined sub-award costs were determined fair and reasonable. Your business office usually makes this determination.

DHHS/ONR Rate Agreement: If you use a Government rate agreement to propose indirect cost rates and/or fringe benefit rates, attach a copy of the agreement you used.
Helpful Cost Principle Reference Information

(i) 2 CFR 200, Subpart E – Cost Principles

(ii) General Provisions for Selected Items of Cost in 2 CFR 200.420 through 2 CFR 200.476

j. Equipment Justification (If Applicable)

If applicable attach your Equipment Justification to field 11 of the R&R Other Project Information Form.

You may list any special Government-owned property or test equipment required to complete the research. When possible and practicable, give a description or title for each item, the current location, and an estimated cost as applicable with a supporting vendor quote. If you do not have information about individual items, group items you require by class and provide an estimate of values.

k. R&R Sub-award Budget Attachments Form (If Applicable)

You must attach all sub-award budgets to the R&R Subaward Budget Attachments Form.

You must provide a budget at the same level of detail as your IV.D.3.h. Prime budget for each proposed sub-award.

You must attach the R&R Sub-award Budget Attachments Form to field 12 of the R&R Other Project Information Form.

l. Sub-award Budget Justification (If Applicable)

The entire Sub-award budget justification and supporting documentation must be combined into a single file and attached to the R&R Sub-award Budget Attachments Form which will be attached to field L of the R&R Sub-award Budget Attachments Form.

You must provide a sub-award budget justification at the same level of detail as your IV.D.3.i. Prime budget justification for each proposed sub-award in a DEPSCoR eligible state.

m. R&R Project/Performance Site Locations Form (Required)

You must complete all information as requested. You must include the ZIP+4 for each performance location you list.

n. R&R Personal Data Form (Required)

This form will be used by DoD as the source of demographic information, such as gender, race, ethnicity, and disability information for the Principal Investigator and all other persons identified as Co-Principal Investigator(s). Each application must include this form with the name fields of the Principal Investigator and any Co-Principal Investigator(s) completed; however, provisions of the demographic information in the form is voluntary. If completing the form for multiple individuals, each Co-Principal Investigator can be added by selecting the "Next Person" button. The demographic information may be accessible to the reviewer but will not be considered in the evaluation. Applicants who do not wish to provide some or all of this information should check or select the "Do not wish to provide" option.

o. Data Management Plan (Optional) – must not exceed two (2) single-sided pages

Attach your Data Management Plan to field 12 of the R&R Other Project Information Form.

You can decide if you want to include a Data Management Plan with your application. If you do, attach your Data Management Plan to field 12 of the R&R Other Project Information Form.

Your "Data Management Plan" must not exceed two (2) single-sided pages in length and should discuss:

1. The types of data, software, and other materials to be produced in the course of the project and include a notation marking items that are publicly releasable.

2. How the data will be acquired.

3. Time and location of data acquisition if they are scientifically pertinent.

4. How the data will be processed.

5. The file formats and the naming conventions that will be used.

6. A description of the quality assurance and quality control measures during collection, analysis, and processing.

7. If existing data are to be used, a description of their origins.

8. A description of the standards to be used for data and metadata format and content.

9. Plans and justifications for archiving the data.

10. The timeframe for preservation; and.

11. If for legitimate reasons the data cannot be preserved, the plan must include a justification citing such reasons.

p. Letter of Support (Required)

Attach a **letter of support** from the Collaborator that discusses how they will foster a ***mentorship*** relationship with the Applicant to field 12 – Other Attachments in the R&R Other Project Information Form.

E. INFORMATION YOU MUST SUBMIT IF SELECTED FOR POSSIBLE AWARD

Our Grants Officer may request additional necessary information from you during negotiations, or as required for award considerations. You must respond promptly.

If you do not fully comply with our information requests by the time, we are ready to make an award, we may determine that you are not qualified to receive an award and use that determination as a basis for making an award to another applicant.

F. SYSTEM FOR AWARD MANAGEMENT (SAM) REGISTRATION, GRANTS CERTIFICATIONS, UNIQUE ENTITY IDENTIFIER, AND CAGE CODE

1. SAM Registration Required

As required in 2 CFR 25 all applicants must:

- Be registered in SAM.gov before submitting its application.
- Complete their Grants Certifications in SAM.gov to be eligible to apply for a Federal financial assistance project or program;

- Provide a valid Unique Entity Identifier as issued by SAM.gov as part of the registration process, and provide a Commercial and Government Entity (CAGE) code as issued by the Defense Logistics Agency through the SAM.gov registration process; and

- Continue to maintain an active SAM registration with current information at all times any Federal award is active, or when any application is under consideration by a Federal awarding agency.

2. SAM Exemption or Exceptions Not Available Under This Announcement

We will not issue an Agency level exemption to SAM registration under 2 CFR 25.110(d) for applicants under this announcement.

You must comply with SAM registration requirements and include an Organizational Unique Entity Identifier in field 5 of the SF 424 (R&R) application or we cannot make an award.

3. Questions about SAM Registrations and Updates

You can get questions about SAM registration and entity updates answered by live chat at https://www.fsd.gov/gsafsd_sp and telephone at (866) 606-8220. Top help topics for SAM.gov are available at https://www.fsd.gov/gsafsd_sp?id=kb_category&kb_category=f56ee43edbfadc102c5f368f7c961906.

4. Consequences of Non-Compliance with SAM Registration Requirements

We cannot make an award to you unless you comply with SAM requirements. If you are non-compliant, we may determine you are not qualified to receive an award, and use that determination to make an award to someone else as authorized by 2 CFR 25.205(b). You cannot receive payments without an active SAM record and CAGE code.

G. SUBMISSION DATES AND TIMES

1. Full Proposal Submission Deadline

We must receive your validated Full Proposal electronically through Grants.gov **no later than 11:59 PM Eastern Time on Monday, 25 November 2024** to be considered for selection (see Section IV.G.5 Submission Dates and Times). This is the final due date. We recommend you submit your application early.

You are responsible for making sure your application is submitted, received, and validated by Grants.gov before the application deadline. If you submit your application late, your proposal is not eligible for consideration.

Timely Receipt Requirements and Proof of Timely Submission

Online Submission: All applications must be validated by Grants.gov **no later than 11:59 PM Eastern Time on Monday, 25 November 2024.** Proof of timely submission is automatically recorded by Grants.gov. The applicant AOR will receive an acknowledgment of receipt and a tracking number (GRANTXXXXXXXX) from Grants.gov with the successful transmission of their application. Applicant AORs will also receive the official date/time stamp and Grants.gov tracking number in an email.
A second confirmation is provided by email when your application has passed Grants.gov validation and the status is updated from received to validated. **Your application is not complete until you receive the validation confirmation.** Your submission must be validated before the submission deadline.

When the administering agency successfully retrieves the application from Grants.gov, and acknowledges the download of submissions, Grants.gov will provide an electronic acknowledgment of receipt of the application to the email address of the applicant with the AOR role.

Applications received by Grants.gov after the established due date will be counted as late and will not be considered.

Applicants using slow internet, should be aware that transmission can take some time before Grants.gov receives your application. Again, Grants.gov will provide either an error or a successfully received transmission in the form of an email to the applicant with the AOR role. The Grants.gov Support Center reports that some applicants end the transmission because they think that nothing is occurring during the transmission process. *Please be patient and give the system time to process the application.*

2. How Proposal Submission Time is Determined

We use the system generated Grants.gov time stamp to determine when you submitted your successfully validated proposal. Grants.gov policies and procedures for application submission and processing apply.

3. Grants.gov Tracking Number is Application Receipt

Grants.gov generates a confirmation page when you submit your application. A second confirmation is provided by email when your application has passed Grants.gov validations and the status is updated from received to validated. Your application is not complete until you receive the validation confirmation.

The validation confirmation page includes a system generated Grants.gov tracking number; this serves as your receipt. You should keep a copy of all confirmations.

You can verify the submission time and application status with your tracking number through Grants.gov at https://www.grants.gov/applicants/grant-applications/track-my-application

4. Other Submission Requirements

If Grants.gov rejects your electronic application submission for any reason, you must correct all errors and resubmit your application before the Full Proposal submission deadline as outlined in section IV.G.1. Full Proposal Submission Deadline.

5. Submission Dates and Times

Schedule of Events		
Event	**Date**	**Eastern Time**
RunGrants website open for White Paper submission (https://dod-basicresearch.**nvision.noblis.org**/program/depscor)	Tuesday, 16 April 2024	9:00 AM
DEPSCoR Webinar For details and registration, please visit (https://dod-basicresearch.**nvision.noblis.org**/program/depscor)	Tuesday, 16 April 2024	1:00 - 3:00 PM
RunGrants Registration (strongly suggested by) & Cut-off date for Q&As with Program Officers	Thursday, 20 June 2024	NLT 11:59 PM
White Paper and Supporting Documentation submission on RunGrants website (https://dod-basicresearch.**nvision.noblis.org**/program/depscor) (required by)	Monday, 24 June 2024	NLT 11:59 PM
Notification of White Paper Selection	Friday, 6 September 2024	NLT 11:59 PM
Full Proposal Submission (by invitation only) electronically on Grants.gov website (submitted by)	Monday, 25 November 2024	NLT 11:59 PM
Notification of Selection for Award	Monday, 17 March 2025	NLT 11:59 PM

H. INTERGOVERNMENTAL REVIEW

N/A - This program is excluded from coverage under Executive Order (E.O.) 12372.

I. FUNDING RESTRICTIONS

1. Proposal Preparation Costs

Your proposal or application preparation costs are not considered an allowable direct charge to any award under this announcement. Your costs are, however, an allowable expense to the normal bid and proposal indirect cost as specified in 2 CFR 200.460 proposal costs if you receive a grant or cooperative agreement.

2. Pre-award Costs

You must request our prior approval if your research requires a specific date pre-award costs become allowable, or if you need more than ninety (90) days pre-award cost authorization as described in 2 CFR 200.308(e)(1) and 2 CFR 200.458. **Your business office must provide this request in writing.** You must document why pre-award costs are necessary and essential for the research in the request and identify a specific date for our Grants Officer to consider.

Our grants include up to ninety (90) calendar days pre-award costs in accordance with the DoD Research and Development General Terms and Conditions, (DoD T&C) FMS Article IV.C. Pre-award costs section; however, the actual date costs become allowable is

not final until an award is made. We recommend you ask for a specific date as described above to prevent misunderstandings.

All costs incurred before a grant or cooperative agreement award are at the recipient's risk as described in 2 CFR 200.308(e)(1). We are under no obligation to reimburse your costs if for any reason you do not receive an award, or if your award is less than anticipated and inadequate to cover your pre-award costs.

V. APPLICATION REVIEW INFORMATION

A. CRITERIA

DEPSCoR seeks to increase the number of researchers at and improve the capabilities of IHE in eligible States/Territories to perform competitive S&E research relevant to the DoD.

Proposed research should describe cutting-edge efforts on basic scientific problems. White Papers deemed to be applied research, as opposed to basic research, will not advance to the Full Proposal stage of the competition.

You should show strength in as many of the evaluation and selection areas as practicable to demonstrate maximum competitiveness.

1. Evaluation Criteria

Your White Paper and Full Proposal will be evaluated against the following four (4) criteria. Criteria 1, 2, and 3 are equally important to each other; Criteria 4 is of least importance:

1. Scientific and technical merits of the proposed research.
2. The Applicant's and Collaborator's qualifications, ability to perform the proposed work, and the overall management approach.
3. Relevance of the proposed research to the DoD.
4. **(Full Proposal Evaluation Only)** Realism and reasonableness of proposed costs, with the Applicant IHE receiving greater than 50% of funding.

All, some, one, or none of the applicants may be contacted after the proposal review process by phone by the Director of the Basic Research Office, USD (R&E) to clarify certain aspects of their proposed research efforts.

5. No Further Evaluation Criteria or Criterion will be used for Proposal Selection.

B. REVIEW PROCESS

1. Merit-based, Competitive Procedures

Proposals will be subject to a peer or programmatic review. The peer review will use external or internal reviewers to assess the science and engineering technical merit and relevance of the proposal to the mission of the DoD.

The programmatic review will assess the technical quality of the proposal, relevance of the proposed research to the portfolio descriptions in this FOA, relevance of the work to DoD needs, and the potential of the research balanced against available funds. Selection for award consideration will be made based on the outcome of these reviews.

We select proposals for possible funding on a competitive basis according to 10 USC 4141 and 10 USC 4024 using the merit-based competitive procedures described in 32 CFR 22.315, incorporated herein by reference.

2. Cost Analysis

If your Full Proposal is selected for possible award, we will analyze the cost of the work for realism and reasonableness, and that the Applicant IHE is receiving greater than 50% of funding. We must make sure the costs you propose are necessary, allowable, reasonable, realistic, and allocable to the proposed research before we can make an award. We may analyze your technical and cost information at the same time.

3. Agency Review of Risk Posed by Applicants

a. We must review information available about you and entities included in your Full Proposal through the Office of Management and Budget (OMB) designated repositories of government-wide eligibility qualification and financial integrity information. Our risk review is required by **31 U.S.C. 3321** and **41 U.S.C. 2313** and includes both public and non-public information. You must be qualified and responsible as described at **32 CFR 22.415** to receive a grant award.

b. We must consider the non-public segment of the Federal Awardee Performance and Integrity Information System (FAPIIS) system accessible through **SAM.gov** for all awards

exceeding the current simplified acquisition threshold of $250,000.

c. At a minimum, the information in the system for a prior Federal award recipient must demonstrate a satisfactory record of executing programs or activities under Federal grants, cooperative agreements, or procurement awards, and integrity and business ethics. We will consider any comments you provide, in addition to the other information in the designated integrity and performance system, when making our risk judgment about your integrity, business ethics, and record of performance under Federal awards.

d. We may make an award to a recipient who does not fully meet our standards as described at **2 CFR 200.206(a)(2)** if it is determined that the information is not relevant to the current Federal award under consideration or there are specific conditions that can appropriately mitigate the effects of the non-Federal entity's risk in accordance with **2 CFR 200.208**.

e. We must comply with the guidelines on government-wide suspension and debarment described in **2 CFR 200.214**, and must require you to comply with these provisions for all work we fund.

f. These provisions restrict Federal awards and sub-awards with certain parties that are debarred, suspended, or otherwise excluded from or ineligible for participation in Federal programs or activities.

C. DISCLOSURE OF ADMINISTRATIVE PROCESSING BY CONTRACTOR PERSONNEL

We use support contractor personnel to help us with administrative proposal processing. These contractor personnel are employees of commercial firms that have a contract with us. We make sure all of our support contracts include nondisclosure agreements that prohibit disclosure of any information you submit to other parties.

D. NO GUARANTEED AWARD

We do not guarantee that any award will be made under this competition.

VI. FEDERAL AWARD ADMINISTRATION INFORMATION

A. WHITE PAPER SELECTION AND NONSELECTION NOTICES

1. Electronic Notification of White Paper Selection by Friday, 6 September 2024

If your White Paper is selected for a Full Proposal submission and possible award, a notification will be sent to the Applicant via email.

If your White Paper is not selected for a Full Proposal submission for this year's DEPSCoR-RC funding opportunity, a notification will be sent to the Applicant via email.

Instructions for requesting feedback on your White Paper will be included in your notification email. Please check these instructions carefully.

2. Selection for Possible Award Does Not Authorize Work

Our selection notice is not an authorization to start work and is not an award guarantee. We will contact your business office to get answers to any questions we have about your proposal and negotiate specific award terms.

B. AWARD NOTICES

1. Electronic Notification of Full Proposal Selection by Monday, 17 March 2025

If your Full Proposal submission is selected for award, a notification will be sent to the Applicant via email.
If your Full Proposal submission is not selected for award for this year's DEPSCoR-RC funding opportunity, a notification will be sent to the Applicant via email.

If you would like to request written feedback on your Full Proposal submission, instructions will be provided in the notification email.

2. Federal Award Document

A grant signed by a warranted Grants Officer is the only official notice that an award has been made.

3. Electronic Federal Award Distribution

We send award documents to the Applicant and their IHE business office by email. This is called award distribution.

C. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. Reporting of Matters Related to Recipient Integrity and Performance

You must report recipient integrity and performance information as required by Appendix XII to 2 CFR Part 200 – Award Term and Condition for Recipient Integrity and Performance Matters, incorporated herein by reference. You should read the full text of this award term now using the link above to make sure you understand our requirements. You can also find this term at http://www.ecfr.gov.

2. Cross-Cutting National Policy Requirements

You must comply with all applicable national policy requirements as a condition of award. Key national policy requirements may be found in the DoD Research and Development General Terms and Conditions, (DoD T&C); and, 32 CFR Part 22 Subpart E, incorporated herein by reference.

3. Acknowledgment of Research Support

You must acknowledge support provided by the Government in all materials based on or developed under our awards. The requirement extends to copyrighted and non-copyrighted materials published or displayed in any medium.

The following language must be used unless the award document provides different instructions:

"This material is based upon work supported by the Office of the Under Secretary of Defense for Research and Engineering under award number_____."

You must require any sub-recipients under your award to also include this acknowledgment.

4. Disclaimer Language for Research Materials and Publications

All materials based on or developed under our awards except scientific articles or papers published in scientific journals must use the following language unless the award document provides different instructions:

"Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the U.S. Department of Defense."

You must require any sub-recipients under your award to also include this acknowledgment.

5. Grants - Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards

Our grants are governed by the guidance in Title 2, Code of Federal Regulations (CFR) Part 200, "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards" as modified and supplemented by the Department of Defense's (DoD) interim implementation in 2 CFR Part 1104 and 2 CFR Part 1125. Provisions of Chapter 1, Subchapter C of Title 32, CFR, "DoD Grant and Agreement Regulations" other than parts 34 and 37 continue to be in effect and apply as stated.

These regulations are incorporated by reference into this announcement.

6. Conditions of Award for Recipients Other Than Individuals

You must agree to comply with the requirements at 2 CFR Part 182, Subpart B "Requirements for Recipients Other Than Individuals" as a condition of award.

7. Minimum Record Retention Requirements

You must keep records related to our awards for at least three years after completion and the final Federal Financial Report is submitted. This requirement is described further in 2 CFR 200.334, and incorporated herein by reference. For grant awards, the most recently dated DoD R&D T&C's - OAR Article II. Records retention and access describes additional requirements.
Sometimes records must be retained for more than three years.

D. REPORTING

1. Monitoring and Reporting Program Performance

All of our awards require at least interim and final research performance progress reports as required in 2 CFR 200.328, 2 CFR 200.329, and 2 CFR 200.330. The DoD R&D T&C's - REP Article I. Performance management, monitoring, and reporting will apply to

grant awards. Some of our awards require more frequent technical reports.

You must provide your reports on time. Our awards include a schedule specifying the latest date for submission of each required report.

You must use a completed SF 298 Report Documentation Page as the first page of the final report. You can download an electronic SF 298 from https://www.gsa.gov/reference/forms/report-documentation-page

2. Technical Performance Report Format

Interim and final Research Progress Performance Reports (RPPRs) are to be submitted in accordance with reporting requirements identified in the grant document. Typically, interim RPPRs are due annually, however the report due dates can vary. A link to the report submission site will be included in the grant award document.

3. Department of Defense (DD) Form 882 Report of Inventions and Sub-awards

a. Invention Reports

(1) You must provide a final invention report on a DD Form 882. Our award documents specify the due date.

You can get the form at: https://www.esd.whs.mil/Portals/54/Documents/DD/forms/dd/dd0882.pdf

(2) You must submit this report even if you do not have a patent to report.

b. Sub-Award Reporting

You must report information about sub-awards and executive compensation in accordance with the terms in REP Article IV. of the DoD R&D T&C's.

4. Standard Form (SF) 425 Federal Financial Report

a. If you request any advance payment(s) under your award, you must submit quarterly SF 425 Federal Financial reports for the life of the grant. Our awards include specific instructions.

You can get the form at:

https://www.gsa.gov/forms-library/federal-financial-report

b. You do not have to submit quarterly SF 425 Federal Financial reports if you only request payments by reimbursement.

5. Electronic Payment Requests and Electronic Payment
You must register to use Wide Area Work Flow (WAWF) for payment. Payment requests shall be made electronically using an SF270 through the WAWF application in the Procurement Integrated Enterprise Environment (PIEE) e-Business Suite at https://piee.eb.mil/. The website includes registration instructions. All payments must be made using the electronic funds transfer (EFT) method.

If you have WAWF or PIEE questions or problems, you can get help by telephone at (866) 618-5988, or by electronic mail at disa.global.servicedesk.mbx.eb-ticket-requests@mail.mil, or via the Internet at: https://piee.eb.mil/xhtml/unauth/web/homepage/vendorCustomerSupport.xhtml

6. Property Reports

If we furnish any property owned by the Government under an award, you must submit periodic property status reports as described in 2 CFR 200.330 and further implemented for grants by the most recently dated DoD T&C's - REP Article III. Reporting on Property.

7. Other Reports

The Basic Research Office may ask for quarterly reports as needed. We use these informal reports for program purposes, such as preparation for meetings and other technical purposes. We highly recommend you provide this information in a timely manner by electronic mail directly to the Basic Research Office.

8. Electronic Submission of Reports

You must plan to submit reports electronically through our online service specific portals or by email. Our award documents will provide the specific instructions.

VII. AGENCY CONTACTS

A. TECHNICAL INQUIRIES AND QUESTIONS

Questions of a technical nature on a specific topic must be directed to one of the program officers identified in Section I.C.TOPICS. You should **submit your questions in writing by email.** You should **include FOA-AFRL-AFOSR-2024-0007 in the subject line**. All technical discussions must take place prior to White Paper submission. After the White Paper deadline, applicants may no longer contact the program officers listed in section I.C.TOPICS.
If you submit a question by other means than in writing by email, you may not receive a response.

B. GENERAL INQUIRIES AND QUESTIONS

General questions about this announcement **must be sent to us by email**. You must **include FOA-AFRL-AFOSR-2024-0007 in the subject line**.

MS. NICOLE Y. THOMAS
Grants Officer
Email: AFRL.AFOSR.DEPSCoRFOA@us.af.mil

MS. DENISE JOHNSON
Grants Officer
Email: AFRL.AFOSR.DEPSCoRFOA@us.af.mil

If you submit a question by other means than in writing by email, you may not receive a response.

C. PROGRAMMATIC QUESTIONS

Overall DEPSCoR questions can be directed to the Basic Research Office and **must be sent in writing by email**. You must **include this FOA-AFRL-AFOSR-2024-0007 in the subject line**.

DR. JENNIFER BECKER
Program Manager
Email: jennifer.j.becker.civ@army.mil

If you submit a question by other means than in writing by email, you may not receive a response.

VIII. OTHER INFORMATION

A. OMBUDSMAN

An Ombudsman has been appointed to hear and facilitate the resolution of concerns from offerors, potential offerors, and others for this acquisition. When requested, the Ombudsman will maintain strict confidentiality as to

the source of the concern. The existence of the Ombudsman does not affect the authority of the Government Program Officer, Grants Officer, or Evaluation Officials. Further, the Ombudsman does not participate in the evaluation of proposals, the source selection process, or the adjudication of protests or formal grant disputes. The Ombudsman may refer the party to another official who can resolve the concern.

Before consulting with an Ombudsman, interested parties must first address their concerns, issues, disagreements, and/or recommendations to the Grants Officer for resolution. Consulting the Ombudsman does not alter or postpone the timelines for any other processes.

If resolution cannot be made by the Grants Officer, concerned parties may contact the AFRL Ombudsman, Director of Contracting, HQ AFRL/PK. The AFRL Alternate Ombudsman is the Deputy Director of Contracting, HQ AFRL/PK. Please send an email to afrl.pk.workflow@us.af.mil with the subject of "Ombudsman". The Ombudsman has no authority to render a decision that binds the agency.

Do not contact the Ombudsman to request copies of the solicitation, verify offer due date, or clarify technical requirements. Such inquiries must be directed to the Grants Officer.

B. GRANTS OFFICERS AUTHORITY

Grants Officers acting within their warranted capacity are the only individuals legally authorized to make commitments or bind the Government.

No other individuals are authorized to make commitments or otherwise bind the DoD.

C. ADDITIONAL FUNDING OPPORTUNITIES

New funding opportunities are posted throughout the year on the AFOSR, ARO, and ONR sites, we encourage you to monitor them for future opportunities and announcements.

AFOSR: https://www.afrl.af.mil/About-Us/Fact-Sheets/Fact-Sheet-Display/Article/2282103/afosr-funding-opportunities/
ARO: https://www.arl.army.mil/business/broad-agency-announcements/
ONR: https://www.nre.navy.mil/work-with-us/funding-opportunities

Thank you for your interest in this announcement.