NSWCDD BAA N00178-25-0001

INTRODUCTION:

This publication constitutes a Broad Agency Announcement (BAA) as contemplated in 2 CFR 200 of the Code of Federal Regulations. A formal Request for Proposals (RFP), solicitation, and/or additional information regarding this announcement will not be issued.

Naval Surface Warfare Center (NSWC) Dahlgren Division (DD) will not issue paper copies of this announcement. NSWC DD reserves the right to select for award all some or none of the proposals in response to this announcement. NSWC DD reserves the right to fund all, some or none of the proposals received under this BAA. NSWC DD provides no funding for direct reimbursement of proposal development costs. Technical and cost proposals (or any other material) submitted in response to this BAA will not be returned. All proposals will be treated as sensitive competitive in formation and will be protected from unauthorized disclosure.

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GENERAL INFORMATION

A. Agency Name:

Naval Surface Warfare Center Dahlgren Division
6149 Welsh Road
Dahlgren, VA 22448

B. Research Opportunity Title

Naval Engineering Education Consortium (NEEC) Broad Agency Announcement for Fiscal Year (FY) 2025 (FY25).

C. Program Name

NEEC

D. Funding Opportunity Number

NSWCDD BAA N00178-25-0001.

E. Response Date:

Full Proposal Due: 30 October 2024 Eastern Daylight Time 11:59 pm

F. Research Opportunity Description

This BAA is open only to colleges and universities.

On behalf of the Naval Sea Systems Command (NAVSEA) Warfare Centers,
NSWC DD is soliciting research of interest in support of the NEEC. The topics of interest are listed below:

NSWC Carderock
Technical POC: John Barkyoumb

NSWCCD is interested in receiving proposals directed toward projects involving undergraduate or combined graduate student efforts that supports the professional development/growth of students across the technical disciplines within Ship and Submarine Design and supporting technologies. The expectation is that awardees will work closely with the appropriate experts at NSWCCD throughout the entire effort. Considerations will be given to proposals in either of the following categories:

CD-01: College & University Student Capstone/Senior Research projects:
NSWCCD seeks proposals for capstone projects involving significant undergraduate research and design. Graduate Student involvement should support the objectives of the undergraduate capstones. These capstone projects should be team-based and be able to demonstrate progress on preparing the students for future employment opportunities at NSWCCD and across the

Naval R&D Enterprise. Individual awards made from this BAA under CD-01 plan to be approximately $35K to $75K with two 12-month option years.

CD-02: Graduate Research Projects:
NSWCCD seeks proposals for graduate student research projects which result in completed Master's Thesis and/or Doctoral Dissertations. Individual awards made from this BAA under CD-02 plan to be approximately $50K to $90K with two 12-month option years.

Additional detailed information on potential technical areas of research can be found on the Doing Business with Carderock Website at:
https://www.navsea.navy.mil/Portals/103/Documents/NSWC_Carderock/Partnering%20with%20Carderock%20-%202024%20Dist%20A.pdf

NSWC Corona
Technical POC: Karon Myles
NSWC Corona proposals must NOT exceed $300K

CO-01: Multi Beam Antenna on Aerial Moving Platform:
Research and testing of advanced multi-beam antennas have demonstrated significant improvements in receiver sensitivity and the reliability of Radio Frequency (RF) communications for moving platforms, particularly in military platforms such aerial platforms. Due to the challenging topography and limitations of current antenna designs, communication loss is a common issue. Implementing a more advanced antenna on aerial platforms would reduce known signal nulls and improve receiver sensitivity, enabling the platform to detect weaker signals more effectively.

CO-02: Protecting Training Data in the Use of Large Language Models:
Large Language Models (LLMs) are trained on vast data stores which cannot be manually checked and can include private and otherwise sensitive information. Open source training datasets have been demonstrated to include personally identifying information (PII), copyrighted information, and toxic language. Simply removing sensitive information from the training data is often not an option because it is needed in order to fine-tune the LLM for a related domain-specific task. Although training with sensitive data is important to achieve good performance, it is essential that the sensitive training data is not revealed by the LLM in response to prompts. Research efforts may include novel training techniques to improve the robustness of the LLM, and the use of input and output filters to screen out malicious input prompts and responses containing sensitive data.

CO-03: Synthetic Dataset Generation and Evaluation of Methods for Navy Data:
Creating, evaluating, and researching methods for synthetic dataset generation of data for use in Natural Language Processing (NLP), Computer Vision, and other methods of modeling and utilization of data science techniques is important and necessary. The Navy would like to see research in creating realistic, unclassified data that is verified and evaluated to be correctly aligned and similar to Navy data without revealing or disclosing any potentially classified parts of the data. The models used to evaluate and validate the unclassified data can then be transferred for use on Navy data.

NSWC Crane

Technical POC: Bryan Woosley

NSWC Crane is prepared to award at least one Grant aligned with the topic below. NSWC Crane requests that proposals include an annual budget for the initial award year totaling $155K and include two option years with an annual budget of $140K each for a total Period of Performance of 3 years and budget of $435K.

CR-01 Photonic Compute:

High-efficiency hybrid electric-photonic ADC and DAC: Photonic compute has the promise of performing tasks with high data density utilizing several forms of multiplexing, such as wavelength and phase. The full benefit of such photonic systems is when the operation is performed in the analog domain. Disaggregation of tasks to photonic compute cores requires conversion of electrical digital data to photonic analog data, a task that is currently both power inefficient and speed constrained. Development of highly power-efficient, fast, and low-noise converters, either in the electrical, photonic, or hybrid domain, would eliminate one of the biggest bottlenecks for utilization of photonic compute cores. Proposals should explore architectures that can be highly parallelable across many photonic processors. Metrics of interest include total system power, conversion speed, and efficiency. Topics should also consider how architectures can increase the effective number of bits while also minimizing noise for fully digital-electrical to analog-photonic (DAC) and analog-photonic to digital-electrical (ADC) conversion chains.

NSWC Dahlgren

Technical POC: Parker Page

DD01: Thermal Protective System Material Analysis Thermal:

Protective System materials are centered on material technologies that were developed in the 60s and 80s. The constituent materials of current systems try to mimic historical obsolete systems as much as possible, while manufacturing methods have taken a baby-step approach in automation and have been limited to a very niche group of manufacturers. With the recent emphasis of industry in the hypersonics arena, more and more companies are coming up with novel and creative solutions to the TPS problem. Interest is in rapid-prototyping efforts to develop products that provide better performance, reduce cost, and increase rates of production. Additionally, these materials must be tested to analyze their performance in these extreme environments. Advanced instrumentation that would provide direct measurements rather than inferred material properties is also of interest.

DD02: Firmware Scanning:

As Navy systems become increasingly complex and increasingly targeted by adversaries, there is a need to understand our full cyber threat informed attack surface. Modern hardware is becoming increasingly reliant on software, and several recent high profile firmware vulnerabilities have drawn attention to the impact that firmware vulnerabilities can have. The US Navy needs research and development of tools that can analyze device firmware, identify or correlate vulnerabilities and/or compromises, and provide increased situational awareness of the risk that these systems have.

DD03: Embedding Systems Engineering Expertise:
As the Navy adopts new paradigms of Systems Engineering, such as Model Based Systems Engineering (MBSE), there is a desire to research how best to take advantage of the new capabilities this brings to our processes. One specific area is how best to link MBSE Model Development to Software Developers in order to identify novel practices for transitioning between modern modeling and future capability development.

DD04: High-Power Antenna and Enabling Components:
The Navy is interested in research pertaining to High-Power antennas to include; improved high-power passive electronically-steered array (PESA) performance, improved active electronically-steered array (AESA) performance, reduced size, weight, and power (Swap) requirements, and the development of antenna models using computational electromagnetics.

DD05: Hypersonic Materials and coupled fluid-thermal-structural interaction M&S:
The Navy is interested in research pertaining to Hypersonic Materials and coupled fluid-thermal-structural interaction to include; active and passive cooling techniques in hypersonic flight environments, thermal-electric energy capture devices, boundary layer transition and stability techniques, low cost, highly manufactural, high temperature materials, efficient coupled aero-thermal-structural interaction M&S frameworks, improved aerodynamic and aerothermal modeling and testing of wake and base regions. Improved threat predictor algorithms, and improved adaptive autopilot and state estimation algorithms.

DD06: Improved Laser Weapons System Optics and Diagnostics:
The Navy is interested in research pertaining to High Laser Induced Damage Threshold (LIDT) – Ultra Broadband – Surface Structured Optics to include; scalability of Optical Power Handling for NSWCDD Laser Lethality Interactions, glass and Structure Design for Dual-Modality HEL Propagation – Simultaneous Continuous Wave and Pulsed Laser Utilization, High Peak Power Handling focusing lenses for Nd:YAG 1ω, 2ω, and 3ω propagation, multi-Wavelength Bidirectional Reflectance Distribution Function (BRDF), improved modeling and experimental characterization of optical turbulence, extinction, and thermal blooming, and improved high energy laser system reliability.

DD07: Non-Determinate System Impacts on System Safety, understanding the role of AI/ML and the ability to trust those systems:
As artificial intelligence becomes a regular part of our daily lives, it is inevitable for that technology to become a critical part of weapon system development to be agnostic and combat emergent threats. Understanding the strengths and limitations of AI/ML is key to designing and implementing it safely and effectively. We must learn when and whether to trust the technology, understand its capabilities and limitations, and adapt as these systems evolve. Trust is key to a successful partnership between humans and AI and is built over time through education, research, past experiences, and lessons learned. The level of belief or confidence we place in AI should be thoughtfully measured and evaluated by taking into account the AI's capabilities and the safety of its performance under normal, stressed, and adversarial situations. We must also consider how it works with different types of users and weapon systems in different environments. Through academic research and leveraging industry initiatives and trade

studies will allow DoD weapon systems to be designed to account for these areas of consideration to deploy safe systems into the fleet.

DD08: Cognitive EW:
The Navy is interested in research pertaining to the use of RFML (Radio Frequency Machine Learning) techniques to recognize threat intent of unknown waveforms in EW systems. Determine threat intent based on RF parameters: waveform, update rate, pulse width, etc.

DD09: Effects Measurement Techniques:
The Navy is interested in research pertaining to the use of novel techniques to measure electromagnetic effects by embedding non-conductive sensors into electronics and ordnances to determine coupled electromagnetic energy.

DD10: Clutter Recognition Algorithms:
As naval forces continue to face more complex warfighting scenarios, clutter recognition algorithms are needed to help process and present actionable information to warfighters. Use RFML techniques to process I and Q data streams to support the processing of radar data and development of clutter recognition algorithms.

DD11: AI Analysis of Event-Driven Electromagnetic Spectrum Monitoring:
The Navy is interested in research pertaining to exploring the implementation of Intelligent Automation and Artificial Intelligence (AI) algorithms to enhance event-driven electromagnetic spectrum monitoring. By integrating emerging AI techniques, such as machine learning and deep learning, research the feasibility of an automated system capable of accurately identifying, classifying, and predicting anomalous events within the electromagnetic spectrum through system metadata. This proposed methodology enables real-time data analysis, intelligent pattern recognition, and adaptive decision-making processes, resulting in improved spectrum management efficiency and reduced human intervention.

DD12: Radio Frequency Machine Learning (RFML) Analysis for Anomaly Detection of Known Electromagnetic Emissions:
The Navy is interested in research pertaining to investigating the application of Intelligent Automation and Radio Frequency Machine Learning (RFML) techniques to identify and analyze anomalous electromagnetic emissions from known sources. By leveraging advanced machine learning algorithms, the intent would be to develop an automated system capable of accurately detecting, classifying, and predicting deviations in known RF signatures.

DD13: Generative Artificial Intelligence (AI):
Generative models such as large language models (LLM) are being used to generate code and to otherwise help increase the productivity of software engineers. The Navy requires the code generated to be secure, safe, modular and maintainable. LLMs have been explored as a tool to find bugs in code or to produce patches for security flaws, with only marginal success. Methods to improve the code produced by LLMs, without requiring a custom LLM or extensive retraining, would be of interest. Other possible use cases for LLMs in software engineering to improve the process, reduce the time to product, improve the productivity of the coders, and ensure the maintainability and correctness of the code would be of interest.

DD14: Guarantees in AI/ML:
AI and machine learning (ML) algorithms are extremely complex, with many thousands (millions, billions) of parameters. With most such algorithms, there is no way to ensure the performance of the system on new data, particularly data that deviates from the training data, or data that has been manipulated by an adversary. Methods to a) provide guarantees of the performance of the AI/ML; b) to understand the workings of the algorithm and provide a human-understandable reason for their decision; c) to ensure that learning models do not learn undesirable behaviors; d) improve the way AI/ML systems are tested and validated to ensure that their models are correct, would greatly increase their utility and safety for Navy problems.

DD15: Model-Based Systems Engineering (MBSE) Guides:
Develop MBSE process guides that identify modeling best practices and processes that are agile compatible, enable cross-agency collaboration and use of the MBSE toolkit.

DD16: SOS Roadmap:
Develop visual depiction of technology portfolio project tasks schedules and milestones to enhance ability to identify risks and opportunities as well as leverage resources and deliverables across tasks. Tool to be dynamic, with internet based GUI and dashboard. Unclassified or dummy date will be used for actual project schedules and events.

NSWC Indian Head

Technical POC: Amanda Wilmot

IH-01:
Energetic materials that offer disruptive advances in performance. Desired technologies include innovative formulations, synthesis methods, processing methods and/or novel compounds that enable longer range rocket motors or increased warhead performance. Development and characterization of fundamental shock wave, shock wave propagation and shock effects at different temperatures. Dissipative and dispersive effects have to be understood to describe impulse and energy flux at scale up or larger distances given the knowledge of the shock profile. Also considered are synthetic methods and/or novel compounds that enable faster, cheaper, or more efficient scale up and production. Solutions should not be a detriment to the current state-of-the-art sensitivity to enable their safe handling, processing, and storage. Preference will be given to energetic material concepts whose ingredients are domestically sourced, of practical cost, and readily scaled to support future demonstrations and prototyping. It is expected the NEEC university partner will collaborate with NSWC IHD scientists/engineers and that the proposal will describe how the grant deliverables will be transitioned to the Navy.

IH-02:
Artificial Intelligence solutions that improve the performance of munitions and other energetic systems. Desired technologies include classical AI/ML models, Deep Learning, Large Language Models and/or Generative AI that enable longer range, faster speed, or increased warhead performance. Also considered are AI/ML tools that enable faster, cheaper, or more efficient system development, simulation, testing, and/or production, and such tools can focus on applications from the component level to the system level. It is expected the NEEC

university partner will collaborate with Naval Surface Warfare Center Indian Head Division (NSWC IHD) scientists/engineers and that the proposal will describe how the grant deliverables will be transitioned to the Navy.

NSWC Panama City
Technical POC: Matt Bays

No topics this year.

NSWC Philadelphia
Technical POC: Steve Mastro

PD-01:
Development of High Performance Photo-Activated Catalysts with High Activity and Quantum Efficiency for Oxidation of Airborne Contamination on Submarines. Volatile Organic Compounds (VOC) are slowly released into the air on submarines due to permeation from machinery and chemical systems such as Lithium-Ion batteries and from off-gassing from numerous plastic components. Carbon monoxide and hydrogen are generated during food preparation and charging of lead-acid batteries, respectively. To prevent accumulation of these gases and to maintain concentrations below hazardous levels, a catalytic burner is used to convert these contaminants into water vapor and carbon dioxide which are easily removed from the submarine. The catalyst currently used in the burner requires an elevated temperature that requires a warm-up period during start-up and creates burn hazards. Catalysts that operate at room temperature could eliminate the warm-up time and potential burn hazards. The US Navy is exploring photo-activated catalysts that operate at room temperature and activate instantly upon illumination by Ultra-Violet (UV) light. UV activated catalysts based on Titanium Dioxide (TiO2) may also include benefits of low toxicity relative to thermally activated formulations. Testing in a Navy laboratory has shown that TiO2 impregnated with Platinum (Pt) is active for many of the oxidation reactions required for submarine airborne contaminant removal but the activities and quantum efficiencies are too low for targeted applications. The activity is defined as the number of contaminant molecules removed per time at a given space velocity and contaminant concentration. Quantum efficiency is defined as the moles of contaminant molecules oxidized per mole of photons. NSWCPD is requesting proposals to develop a photo-activated catalyst with higher activity and quantum efficiency than TiO2 / Pt that operates at room temperature. Research should explore the potential of the catalyst being resistant to all decomposition products that may form by complete or partial oxidation from VOC molecules containing halogens and/or sulfur that may be present in the air at concentrations up to 100 ppm. The ideal catalyst would be activated by a narrow band of light that can be generated with commercially available Light Emitting Diodes (LED) with a peak illumination wavelength of at least 360 nanometers. The research should contain an educational component with undergraduate and or graduate students participating in the work.

NSWC Port Hueneme
Technical POC: Armen Kvrtvan

PH-01:
Additive Manufacturing (AM) is paving the way for rapid repair and replacement in all industries and thus increasing mission readiness. With respect to metallic 3D printing, there is

special interest in how these materials behave in a corrosive environment similar to that of a naval vessel. The efforts of this research should be focused on utilizing electrochemical methods to qualitatively and quantitatively assess the corrosion behavior of these materials. Most importantly, to compare these newfound values with materials that were produced via traditional methods (i.e. forged, rolled, etc.).

PH-02:
As different metallic alloys are developed for shipboard use, insight into material degradation and the initial cause of cracking in metallic components aboard ships is necessary. Specifically, the efforts of this work should focus on understanding and developing materials/chemicals that could help in better understanding the initiation of these crack and fracture points. Some research elements include alloy development, simulation development, chemical analysis, surface chemistry and biological influence.

NUWC Keyport

Technical POC: Thai Tran

KPT-01:
Explore directional sensors on subsurface bottom mounted platforms and data analysis techniques to provide situational awareness for the underwater environment. Potential applications for underwater localization, tracking/detection of acoustic sources and marine mammals, and ambient/soundscape noise characterization.

KPT-02:
Investigate potential payload designs to enable a Small Unmanned Undersea Vehicle (SUUV) to land ("bottom") on the sea floor, maintain bottom position for extended periods (up to 24 hours), and separate from the sea floor under its own power.

KPT-03:
Conduct basic, applied, and advanced technology research combining algorithms, data analytics, and computational science and engineering; especially in the areas of securing Artificial Intelligence/Machine Learning technologies. Develop cybersecurity solutions and technologies that interact with a variety of areas including combinatorial scientific computing, network science, data mining and machine learning, and high-performance computing. Explore their interdependencies within human machine teams to provide maritime cyber solutions integral to autonomous systems.

KPT-04:
Conduct basic, applied, and advanced technology research in the areas of securing Artificial Intelligence/Machine Learning technologies. Special emphasis on human machine teams developing "Adversarial Machine Learning" and "Artificial Intelligence Security" solutions.

KPT-05:
Industrial robotic automation is critical to advancing maintenance and repair. Due to the high mix, low volume nature of repair and multitude of options for end of arm tooling (EOAT) it is critical that path planning algorithms support multiple orientations and control in 1) EOAT orientation constrained to a single axis, free rotation about orientation axis, 2) EOAT orientation constrained in a single axis, rotation constrained about orientation axis, and 3)

EOAT orientation constrained in all axes. Explore integration of various EOAT position/orientation requirements for automated path planning. Demonstrate this capability by performing each of the orientation controlled actions on a provided geometry.

KPT-06:
Industrial robotic automation is critical to advancing maintenance and repair. Due to the high mix, low volume nature of repair it is critical that scan to path algorithms are developed to support the unique requirements of systems. Explore path planning for continuous motion, non-tiled applications for curved and complex surfaces to support laser ablation, corrosion/damage removal and/or surface preparation prior to coating. Demonstrate the laser ablation capability by scanning a provided part, auto-generation of path, and robot execution of continuous motion over a surface curved in both directions, orientation control is desired, but not required.

KPT-07:
Laser ablation is a powerful, proven process for coating removal with the ability to improve marine platforms, however, the pulsed lasers approved for coating removal operate at power levels that cause unintended substrate melting. Following resolidification, microstructural changes occur that potentially degrade material properties and structural performance. Hypothesis-driven scientific exploration is critical to understand the physical mechanisms at work, the relationships between surface and bulk properties, and long-term impacts on performance. This data will be utilized to inform and develop a future laser ablation performance specification.

NUWC Newport

Technical POC: Elizabeth Magliula

NPT-01:
Innovative sensor techniques and sensor network modeling to increase the overall probability and confidence of detection, track quality, and collection of other target characteristics. Advanced acoustic sensor and array technologies and active transduction technologies for platforms, fixed, and distributed systems that all address sub-sea and seabed arenas.

NPT-02:
Advanced AI/Machine Learning architectures that produce human-interpretable results and yield explainable decisions. Machine learning approaches that suitably perform with few or no training samples. Transfer learning algorithms that maintain target recognition performance when sensors are replaced or are degraded from normal wear. Reinforcement learning architectures and training approaches that improve the performance and accuracy of unmanned vehicle autonomy. Novel computing techniques such as brain-inspired neural networks, deep learning processing, and machine/reinforcement learning for integration into systems to improve navigation, acoustic localization, underwater sound tracking in challenging environments, etc.

NPT-03:
Innovative technologies for multi-vehicle autonomy, mobile distributed sensing, undersea networks, and next generation signal distribution platforms in order to produce sufficient and reliable communications and address new challenges.

NPT-04:
Exploring the full electromagnetic (EM) spectrum to develop advanced imaging and electronic capabilities (antenna design, high dynamic range imaging, microwave interferometry, and high-energy laser research). Explore innovative approaches for communicating with undersea assets in a contested environment. Provide a capability to continually monitor operations in an electromagnetically contested environment. Improve ability to detect and classify EM threats and improve ability to deny adversary EM mobility across the EM spectrum.

NPT-05:
Advanced materials, additive manufacturing, and metamaterials. Options include but are not limited to: Investigate effects of marine environments on the performance of advanced coatings and/or metamaterials used for resistance to chemical, physical, and biofouling deterioration, etc. Investigate, identify & execute aspects of design, rapid prototyping, manufacturing, maintenance, and repair technologies associated with additive and advanced manufacturing (AM) research and development. Investigate and validate computational approaches and processes for AM materials for naval applications, and should address associated printed material qualification techniques. Investigate modeling techniques and pursue experiments to systematically understand extreme material response such as fracture, plastic deformation, etc. under impulsive hydrodynamic loading.

NPT-06:
Investigate solutions for enhancing Human-Machine Teams (HMT) within the realm of undersea systems delivering advanced command-and-control capabilities. This topic aims to explore and develop cutting-edge methodologies and technologies that facilitate focused command and convergent control concepts, thereby improving the operational effectiveness and coordination. Proposals should address the integration of autonomous and semi-autonomous systems with human operators, emphasizing real-time data sharing, decision support, and tactical execution. Key areas of interest include the development of robust planning and re-planning frameworks, advanced sensor fusion, AI-driven decision aids, and human-machine interface (HMI) innovations that enhance situational awareness and operational synergy between human operators and enabling capabilities.

NPT-07:
Perform research to advance the understanding and application of decision science to the undersea domain. Areas of particular interest include decision making in situations with imperfect information and high uncertainty, decision making within complex crew communication networks and team structures, as well as the development of methodologies for improving decision making in sociotechnical systems.

NPT-08:
Fundamental research to develop advanced modeling capabilities for the design of impact and shock resistant structural configurations for use in undersea payloads and structures. Modeling approaches may be supplemented by experiments to provide model validation data. The methods should reliably predict material/structural failure and survivable loading levels for extreme loading environments including combined depth and shock/impact loading. Demonstration of reduced weight while providing increased blast/shock/impact response are desirable. Research areas may potentially include novel additive manufactured designs for energy absorption, incorporation of energy absorbing materials into structural designs, or energy attenuation through structural design.

JHTO Joint Hypersonic Transition Office
Technical POC: Annie Bullock
Annie.e.bullock.civ@us.navy.mil
The JHTO is only looking for one year proposals at approximately $100k

JHTO-01:
Seeking proposals directed toward faculty-run research projects involving undergraduate students where the focus is on hypersonics capability development. Focus is especially, but not solely, on research projects dealing with ground and flight test and evaluation, instrumentation, data analytics, modeling and simulation, and manufacturing. Preference will be given to proposals that demonstrate undergraduate student involvement and skill development. Travel allowance should be included to provide for student travel to share and present their work.

G. Points of Contact:

Business:
Naval Surface Warfare Center, Dahlgren Division
Jennifer Montrief, Grant Specialist
Contracting, 0241
Email: jennifer.e.montrief.civ@us.navy.mil
Phone: (540) 273-2519

Business Alternate:
Naval Surface Warfare Center, Dahlgren Division
Crystal Breen, Grant Officer
Contracting, 0241
Email: crystal.p.breen.civ@us.navy.mil
Phone: (540) 487-6408

Technical:

Title/Location	Name	Phone	Email
NEEC Program Manager	Sally Sutherland Pietrzak	(401) 832-8735	Sally.sutherlandpietrzak.civ@us.navy.mil
NSWC Carderock (CD)	John Barkyoumb	(301) 928-5024	john.h.barkyoumb.civ@us.navy.mil

Title/Location	Name	Phone	Email
NSWC Corona (COD)	Karon Myles	(951) 393-4982	karon.a.myles.civ@us.navy.mil
NSWC Crane (CRD)	Bryan Woosley	(812) 854-8119	bryan.d.woosley.civ@us.navy.mil
NSWC Dahlgren (DD)	Parker Page	(540) 653-0514	Parker.w.page.civ@us.navy.mil
NSWC IHD (IHD)	Amanda Wilmot	(240) 541-1439	Amanda.s.wilmot.civ@us.navy.mil
NSWC Panama City (PCD)	Matthew Bays	(850) 230-7711	matthew.j.bays2.civ@us.navy.mil
NSWC Philadelphia (PD)	Stephen Mastro	(215) 897-1079	stephen.a.mastro.civ@us.navy.mil
NSWC Port Hueneme (PHD)	Armen Kvryan	(805) 228-8910	armen.kvryan.civ@us.navy.mil
NUWC Keyport (KPT)	Thai Tran	(360) 315-3287	thai.b.tran.civ@us.navy.mil
NUWC Newport (NPT)	Elizabeth (Liz) Magliula	(401) 832-7696	elizabeth.a.magliula.civ@us.navy.mil

Questions concerning this announcement can be emailed to the respective point of contact above and must include the BAA announcement number and applicable topic number. Questions of a technical nature should be submitted to the appropriate technical POC in the above table with a Cc to the business point of contact.

H. Instrument Types:

Awards will take the form of grants. Any assistance instrument awarded under this BAA will be governed by the award terms and conditions that conform to DoD's implementation of OMB circulars applicable to financial assistance. Terms and conditions may include revisions to reflect DoD implementation of the Office of Management and Budget (OMB) guidance set forth in 2 CFR Part 200, "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards;" applicable terms and conditions provided in DoDGARS; and the current DoD Research and Development (R&D) General Terms and Conditions (Grant Terms and Conditions | Office of Naval Research (navy.mil)). Any resultant award will be set at a Not-to-exceed cost. No fee or profit is allowed.

I. Catalog of Federal Domestic Assistance (CFDA) Number:

12.300

J. Catalog of Federal Domestic Assistance (CFDA) Title:

Department of Defense (DoD) Basic and Applied Scientific Research

K. Amendments:

Amendments to this BAA will be posted to https://www.grants.gov as needed to reflect changes in topics, instructions, or points of contact. Interested parties are encouraged to periodically check this website for updates and to establish automated alerts notifying them of any amendment postings.

L. Other Information

Work funded under a BAA may include basic research, applied research and some advanced technology development research. With regard to any restrictions on the conduct or outcome of work funded under this BAA, NSWC DD will follow the guidance on and definition of "contracted fundamental research" as provided in the Under Secretary of Defense (Acquisition, Technology, and Logistics) Memorandum of 24 May 2010 or any updated guidance that supersedes this memorandum. DoD Policy on Fundamental Research (osd.mil)

As defined therein, the definition of "contracted fundamental research" in a DoD grant or contractual context includes research performed under grants and contracts that are (a) funded by Research, Development, Test, and Evaluation Budget Activity 1 (Basic Research), whether performed by universities or industry or (b) funded by Budget Activity 2 (Applied Research) and performed on campus at a university. The research shall not be considered fundamental in those rare and exceptional circumstances where the applied research effort presents a high likelihood of disclosing performance characteristics of military systems or manufacturing technologies that are unique and critical to defense, and where agreement on restrictions have been recorded in the contract or grant.

Pursuant to DoD policy, research performed under grants and contracts that are (a) funded by Budget Activity 2 (Applied Research) and NOT performed on-campus at a university or (b) funded by Budget Activity 3 (Advanced Technology Development) does not meet the definition of "contracted fundamental research." In conformance with the USD (AT&L) guidance and National Security Decision Directive 189, NSWC DD will place no restriction on the conduct or reporting of unclassified "contracted fundamental research," except as otherwise required by applicable federal statute, regulation, or executive order. For certain research projects, it may be possible that although the research being performed by the prime awardee is restricted research, a Subawardee may be conducting "contracted fundamental research." In those cases, it is the prime awardee's responsibility in the proposal to identify and describe the subcontracted unclassified research and include a statement confirming that the work has been scoped, negotiated, and determined to be fundamental research according to the prime awardee and research performer. (osd.mil).

Contracts and grants and other assistance agreements made under BAAs are for scientific study and experimentation directed towards advancing the state of the art and increasing knowledge or understanding.

THIS ANNOUNCEMENT IS NOT FOR THE ACQUISITION OF TECHNICAL, ENGINEERING, AND OTHER TYPES OF SUPPORT SERVICES.

AWARD INFORMATION:

A. Funding Amount and Period of Performance

Awards made from this BAA plan to be approximately $100k to $150k total for the base year with two 12-month option years for a potential range of $300k-$450k inclusive of options.

Average award value for FY24 NEEC submissions was $410k. Anticipated award date is 1 April 2025.

Awards will take the form of grants. Any assistance instrument awarded under this BAA will be governed by the award terms and conditions that conform to DoD's implementation of OMB circulars applicable to financial assistance. Terms and conditions may include revisions to reflect DoD implementation of the Office of Management and Budget (OMB) guidance set forth in 2 CFR Part 200, "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards;" applicable terms and conditions provided in DoDGARS; and the current DoD Research and Development (R&D) General Terms and Conditions (Grant Terms and Conditions | Office of Naval Research (navy.mil)). Any resultant award will be set at a Not-to-exceed cost. No fee or profit is allowed.

B. Awards

The Government may make multiple awards. The Government reserves the right to select for negotiation all, some, one, or none of the proposals received in response to this BAA and to make awards without discussions with proposers. The Government also reserves the right to conduct discussions if determined to be necessary. The Government reserves the right to request any additional necessary documentation once it makes the award instrument determination. Such additional information may include but is not limited to Representations and Certifications. The Government reserves the right to remove proposers from award consideration should the parties fail to reach agreement on award terms, conditions, and cost/price within a reasonable time or the proposer fails to provide requested additional information in a timely manner.

ELIGIBILTIY INFORMATION

A. All responsible sources from academia may submit proposals under this BAA.

B. Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs) are highly encouraged to submit proposals and join others in submitting proposals. However, no portion of this BAA will be set aside for HBCU and MI participation, due to the impracticality of reserving discrete or severable items of this research for exclusive competition among such entities.

C. Federally Funded Research & Development Centers (FFRDCs), including the Department of Energy National Laboratories, are not eligible to receive awards under this BAA. **This exclusion also applies to faculty, PIs, and advisors.**

D. Navy laboratories and warfare centers as well as other Department of Defense and civilian agency laboratories are not eligible to receive awards under this BAA.

E. University Affiliated Research Centers (UARCs) are not eligible to submit proposals under this BAA. **This exclusion also applies to faculty, PIs, and advisors.**

F. U.S. export control legislation and authorities may apply to proposals submitted under this BAA. Proposers are solely responsible for ensuring compliance with all U.S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR) and the Export Administration Regulations (EAR). In some cases, developmental items funded by the Department of Defense are now included on the United States Munition List (USML) and are therefore subject to ITAR jurisdiction. Proposers should address in their proposals whether export control restrictions apply or do not apply, such as in the case where research products would have both civil and military (dual-use) applications, to the work they are proposing to perform. The USML is available online at http://www.ecfr.gov/cgi-bin/textidx?node=pt22.1.121; the Commerce Control List (CCL) is available through https://www.bis.doc.gov/index.php/regulations/commerce-control-list-ccl . Additional information regarding the President's Export Control Reform Initiative can be found at http://export.gov/ecr/index.asp.

G. Students must be US citizens.

APPLICATION AND SUBMISSION INFORMATION (ONE-STEP BAA PROCESS)

A. Application and Submission Process

Interested proposers may submit full technical and cost proposal in response to any of the topics areas identified above. Interested proposers may submit proposals under more than one topic of interest and there is no limit to the number of technical proposals a single interested proposer may submit. However, interested proposers may not submit the same technical proposal to more than one warfare center or activity identified in this BAA. Additional topics of interest may be added to the BAA via an amendment at any time during the open period of this BAA.

Proposers shall submit full proposals in accordance with the instructions below. The technical proposals will be evaluated in accordance with Section I of this BAA.

B. Content and Format of Proposals

Proposals submitted under this BAA are expected to be unclassified. Do not put proprietary markings in or on the Statement of Work. For proposals containing data that the Proposer does not want disclosed to the public for any purpose, or used by the Government except of evaluation purposes, the Proposer shall mark the title page with the following legend:

This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed – in whole or in part – for any purpose other than to evaluate the proposal. If, however, a grant is awarded to this Proposer as a result of – or in connection with – the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting grant. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in (insert numbers or other identification of sheets).

Also, mark each sheet of data that the Proposer wishes to restrict with the following legend:

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

Titles given to the proposals should be descriptive of the work they cover and should not be merely a copy of the title of this BAA or a research area of interest noted above. Additionally, proposers may not submit the same proposal to more than one warfare center or activity identified in this BAA.

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

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. The completion of most fields is self-explanatory. 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.

Specific instructions for completion of SF 424 (R&R) are provided:

- Block 4a, Federal Identifier – Enter N00178
- Block 4b, Agency Routing Number – Enter the abbreviation for the warfare center the proposal is being submitted to and the Technical POC's name, last name first, in brackets. The abbreviation and Technical POC's name can be obtained from the chart of technical POCs on page 13 of this BAA. Failure to provide the technical POC in this block could deem your proposal invalid.
- Block 4c Previous Grants.gov Tracking ID – Enter the Grants.gov tracking number of the previous proposal submission if this submission is for a changed/corrected application; otherwise, leave blank.
- Select "I Agree" to:
- Certify (1) to the statements contained in the list of certifications* and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances * and agree to comply with any resulting terms if I accept an award. 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)Agreements are true, complete, and accurate to the best of your knowledge.

- You may have to attach the completed D.3.c. SF-LLL Disclosure of Lobbying Activities if you have lobbying activity that you must disclose.

- Attach your Publicly Releasable Abstract using form Project Abstract Summary.

- Attach your Project Technical Proposal using form Research and Related Other Project Information via the attachment in section 8.

- Attach your Bibliography and References Cited using form Research and Related Other Project Information via the attachment in section 9.

- Attach a Facilities and Other Resources description document here if you need to supplement your facilities and resources section using form.
- Research and Related Other Project Information via the attachment in section 10. You may supplement your Budget Justification by attaching an Equipment Justification here. 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.

- Attach the Subaward Budget Attachments Form (if applicable) and not attached elsewhere. You should have budgets and justifications for all subawards proposed attached within this form before attachment.

b. Publicly Releasable Project Summary /Abstract

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

You must submit the "NEEC Abstract" an attachment with the proposal submission. You must provide concise abstract of 300 words or less with your proposal (no more than 2000 characters). You must mark this abstract publically releasable. Your abstract should use terms the public can understand to describe the research objective, technical approach, anticipated outcome, and potential impact of the specific research.

Your abstract header should include the Topic number from Section F above along with the technical POC.

If you receive an award, we must publish your abstract to a searchable website available to the general public in accordance with Public Law 113-235. The website address is https://publicaccess.dtic.mil/search/#/grants/simpleSearch.

c. Technical Proposal

Technical proposals are limited to ten (10) pages. The cover page, table of contents, and resumes are excluded from the page count.

- Paper Size – 8.5 x 11-inch paper
- Margins – 1 inch
- Spacing – single or double spaced
- Font – Times New Roman, 12 point
- Cover Page: This should include the words "Technical Proposal: and the following:
    - BAA Number: N00178-25-0001
    - Title of Proposal;
    - NEEC Technical POC (Listed on page 10) & Topic Number
    - Identity of prime Proposer and complete list of subawards, if applicable;
    - Technical contact (name, address, phone/fax, e-mail address) and;
    - Proposed period of performance (identify both the base period and any options, if included).
- Table of Contents: An alphabetical/numerical listing of the sections within the proposal, including corresponding page numbers.
- Technical Approach and Justification: The major portion of the proposal should consist of a clear description of the technical approach being proposed. This discussion should provide the technical foundation/justification for pursuing this particular approach/direction and why one would expect it to enable the objectives of the proposal to be met.
- Project Schedule and Milestones: A summary of the schedule of events and milestones.
- Reports: Proposers are to identify all reports to be provided as deliverables.

The following are sample reports that are typically required under a research effort:

- Technical and Financial Progress Report
- Final Report
- Grants do not include the delivery of software, prototypes, and other hardware deliverables.
- Management Approach: Identify which personnel and Subawardees/sub-recipients (if any) will be involved. Include a description of the facilities that are required for the proposed effort, along with a description of any Government furnished equipment/hardware/software/information required, by version and/or configuration.
- Qualifications: A discussion of the qualifications of the proposed Principal Investigator and any other key personnel. Include resumes or curricula vitae for the Principal Investigator, other key personnel and consultants. The resumes/curricula vitae shall be attached to the proposal.
- Rough Order of Magnitude (ROM): Identify the estimated cost of the project. The ROM is the best guess of the anticipated cost of the effort. Do not include a cost proposal or any of the material that normally accompanies a cost proposal.

d. Bibliography and References Cited

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

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

You must attach a short biographical sketch and list of significant publications (vitae) for each Senior/Key Person. You must also attach a list of current and pending support as discussed in Principal Investigator (PI) and Senior Personnel Time including title and objectives; the percentage per year to be devoted to the other projects; the total amount of support the individualism receiving in connection to each of the other research projects or will receive if other proposals are awarded; name and address of the agencies and/or parties supporting the other research projects; and period of performance for the other research projects.

You must list all key persons proposed for the research on the R&R Senior/Key Person Profile (Expanded) Form. Key persons are generally the PI, any Co-PIs, and senior staff. We use this information to evaluate the qualifications of you and your research team.

f. R&R Budget Form

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 included.

You must include enough budget related information in your proposal to support your costs as reasonable and 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 reasonable and realistic is the most common reason awards are delayed.

g. Budget Justification

Use the following notional schedule to determine proposed period of performance and associated budget:

Estimated Award Date: 01 April 2025

Estimated Approximate Award amount: $100k to $150k base (typically a base and 2 option years). If funded for all three years, the total would generally be $300k to $450k.

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 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.

(1) Direct Labor: The budget justification must identify the basis for proposed labor (hours and **unburdened** labor rates). A clear breakdown of direct labor is required for each proposed period. If escalation is provided for out years, the escalation rate shall be identified. If proposed labor rates are based on actual salary, this should be stated in the budget justification. Verification of salary may be requested if selected for award.

(2) Administrative and Clerical Labor: Salaries of administrative and clerical staff are normally indirect costs (and included in an indirect cost rate). Direct charging of these costs may be appropriate when a major project requires an extensive amount of administrative or clerical support greater than normal and routine levels of support. Budgets proposing direct charging of administrative or clerical salaries must be supported with a

budget justification which adequately describes the major project and the administrative and/or clerical work to be performed and associated salary. Number of hours per person/labor category and unburdened rate for each period is required.

(3) Fringe Benefits and Indirect Costs: The proposal must show the rates and calculations of the costs for each rate category. If the rates have been approved/negotiated by a Government agency, provide a copy of the memorandum/agreement. If the rates have not been approved/negotiated, provide sufficient detail to enable a determination of allowability, allocability and reasonableness of the allocation bases, and how the rates are calculated. Additional information may be requested, if needed. If composite rates are used, provide the calculations used in deriving the composite rates.

(4) Fully Burdened Rates: If a proposer includes a fully burdened labor rate in excess of $187 per hour (with indirect rates applied), then the proposer shall provide a narrative to justify any such Labor Category.

(5) You must itemize travel. Estimate the cost and 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. Provide the basis of your travel costs (university travel policy, Joint Travel Regulations (JTR), etc.)

(6) You must itemize materials/supplies. 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.

(7) Proposals including request 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, unless determined otherwise by recipient’s internal policy. Items that do not meet the "equipment" definition can be included under supplies. List each piece of equipment to be purchased and provide description of how it will be used in the project. Budget narrative should explain why the equipment is necessary for successful completion of the project. Provide quotes in U.S. Dollars if available, or indicate the basis of equipment cost. If you have any subaward(s), you should describe how you determined subaward costs were determined fair and reasonable. Your business office usually makes this determination.

(8) Other Direct Costs: Provide an itemized list of all other proposed other direct costs such as Graduate Assistant tuition, laboratory fees, report and publication costs, and the basis for the estimate (e.g., quotes, prior purchases, catalog price lists, university policy, etc.).

(9) Department of Health and Human Services (DHHS)/Office of Naval Research (ONR) Rate Agreement: If you use a Government rate agreement to propose indirect cost rates and/or fringe benefit rates, you must attach a signed DHHS or ONR copy of the agreement you used. You must provide the latest signed rate agreement with your proposal.

C. Significant Dates and Times

A full technical and cost proposal shall be submitted by 11:59 PM EST, 30 October 2024.

D. Submission of Late Proposals

The Government reserves the right to not review proposals submitted after 11:59 pm EDT, 30 October 2024, or after a successor to this BAA is issued, whichever occurs first. Grants.gov recommends submitting your application package at least 24-48 hours prior to the close date to provide you with time to correct any potential technical issues that may disrupt the application submission.

E. Submission of Grant Proposals through Grants.gov

This section provides the application submission and receipt instructions for applications. Please read the following instructions carefully and completely.

a. Electronic Delivery

NEEC is participating in the Grants.gov initiative to provide the grant community with a single site to find and apply for grant funding opportunities. All applicants must submit their applications online through Grants.gov.

b. How to Register to Apply through Grants.gov

Instructions: Read the instructions below about registering to apply for NEEC funds. Applicants should read the registration instructions carefully and prepare the information requested before beginning the registration process. Reviewing and assembling the required information before beginning the registration process will alleviate last-minute searches for required information.

The registration process can take up to four weeks to complete. Therefore, registration should be done in sufficient time to ensure it does not impact your ability to meet required application submission deadlines.

Organization applicants can find complete instructions here:

https://www.grants.gov/web/grants/applicants/organization-registration.html

(1) Obtain a UEI Number: All entities applying for funding, including renewal funding, must have a Unique Entity Identifier from SAM.gov. Applicants must enter the UEI number in the data entry field labeled "UEI" on the SF-424 form.

(2) For more detailed instructions for obtaining a UEI number, refer to: https://www.grants.gov/web/grants/applicants/organization-registration.html

(3) Register with SAM: In addition to having a UEI number, organizations applying online through Grants.gov must register with the System for Award Management (SAM) https://sam.gov/content/home. All organizations must register with SAM in order to apply online. Failure to register with SAM will prevent your organization from applying through Grants.gov.

(4) For more detailed instructions for registering with SAM, refer to: https://www.grants.gov/web/grants/applicants/organization-registration.html

(5) Create a Grants.gov Account: The next step in the registration process is to create an account with Grants.gov. Applicants must know their organization's UEI number to complete this process. Completing this process automatically triggers an email request for applicant roles to the organization's E-Business Point of Contact (EBiz POC) for review. The EBiz POC is a representative from your organization who is the contact listed for SAM. To apply for grants on behalf of your organization, you will need the Authorized Organizational Representative (AOR) role.

(6) For more detailed instructions about creating a profile on Grants.gov, refer to: https://www.grants.gov/web/grants/applicants/organization-registration.html

(7) Authorize Grants.gov Roles: After creating an account on Grants.gov, the EBiz POC receives an email notifying them of your registration and request for roles. The EBiz POC will then log into Grants.gov and authorize the appropriate roles, which may include the AOR role, thereby giving you

permission to complete and submit applications on behalf of the organization. You will be able to submit your application online any time after you have been approved as an AOR.

(8) For more detailed instructions and information on roles and creating a profile on Grants.gov, refer to: https://www.grants.gov/web/grants/applicants/registration/authorize-roles.html

(9) Track Role Status: To track your role request, refer to: https://www.grants.gov/web/grants/applicants/registration/track-role-status.html

(10) Electronic Signature: When applications are submitted through Grants.gov, the name of the organization's AOR that submitted the application is inserted into the signature line of the application, serving as the electronic signature. The EBiz POC must authorize individuals who are able to make legally binding commitments on behalf of the organization as an AOR;

***THIS STEP IS OFTEN MISSED AND IT IS CRUCIAL FOR VALID AND TIMELY SUBMISSIONS.**

c. How to Submit an Application via Grants.gov

Grants.gov applicants can apply online using Workspace. Workspace is a shared, online environment where members of a grant team may simultaneously access and edit different web forms within an application. For each Funding Opportunity Announcement (FOA), you can create individual instances of a workspace. Below is an overview of applying on Grants.gov.

For access to complete instructions on how to apply for opportunities, refer to: https://www.grants.gov/web/grants/applicants/apply-for-grants.html

d. Create a Workspace

Creating a workspace allows you to complete it online and route it through your organization for review before submitting.

e. Complete a Workspace

Add participants to the workspace, complete all the required forms, and check for errors before submission.

(1) Adobe Reader: If you decide not to apply by filling out web forms you can download individual PDF forms in Workspace so that they will appear similar to other Standard or administering agency forms. The individual PDF forms can be downloaded and saved to your local device storage, network drive(s), or external drives, then accessed through Adobe Reader. NOTE: Visit the Adobe Software Compatibility page on Grants.gov to download the appropriate version of the software at: https://www.grants.gov/web/grants/applicants/adobe- software-compatibility.html

(2) Mandatory Fields in Forms: In the forms, you will note fields marked with an asterisk and a different background color. These fields are mandatory fields that must be completed to successfully submit your application.

(3) Complete SF-424 Fields First: The forms are designed to fill in common required fields across other forms, such as the applicant name, address, and DUNS number. To trigger this feature, an applicant must complete the SF-424 information first. Once it is completed, the information will transfer to the other forms.

f. Submit a Workspace

An application may be submitted through workspace by clicking the Sign and Submit button on the Manage Workspace page, under the Forms tab. Grants.gov recommends submitting your application package at least 24-48 hours prior to the close date to provide you with time to correct any potential technical issues that may disrupt the application submission.

g. Track a Workspace

After successfully submitting a workspace package, a Grants.gov Tracking Number (GRANTXXXXXXXX) is automatically assigned to the package. The number will be listed on the Confirmation page that is generated after submission.

For additional training resources, including video tutorials, refer to: https://www.grants.gov/web/grants/applicants/applicant-training.html

Applicant Support: Grants.gov provides applicants 24/7 support via the toll-free number 1-800-518-4726 and email at support@grants.gov. For questions related to the specific grant opportunity, contact the number listed in the application package of the grant you are applying for.

If you are experiencing difficulties with your submission, it is best to call the Grants.gov Support Center and get a ticket number. The Support Center ticket number will assist the administering agency with tracking your issue and understanding background information on the issue.

EVALUATION INFORMATION

A. Evaluation Criteria

Awards under this BAA, if any, will be made to proposers on the basis of the evaluation criteria listed below, and program balance to provide overall value to the Government. NSWC DD reserves the right to request any additional, necessary documentation once it makes the award instrument determination. NSWC DD reserves the right to remove proposers from award consideration should the parties fail to reach agreement on award terms, conditions, and cost/price within a reasonable time, or the proposer fails to provide requested additional information in a timely manner. Technical proposals will first be screened by an evaluator at each warfare center or activity identified in the BAA to determine if the proposal falls under the topic under which it was submitted. After this screening process, evaluations will be conducted using the following evaluation criteria:

a. Technical

Technical evaluation will be based on the following. The criteria are all of equal relative importance.

1. Overall scientific and technical merits of the technical proposal and SOW;
2. Potential Naval relevance and contributions of the effort to the Navy's specific mission;
3. The proposer's capabilities, related experience, facilities, techniques or unique combinations of these which are integral factors for achieving the proposal objectives; and
4. The qualifications, capabilities and experience of the proposed Principal Investigator (PI), team leader, and key personnel who are critical in achieving the proposal objects.

b. Student participation

This includes educational quality of the effort, number of students and education levels pursued. Although not required, Proposers are encouraged to include students from underrepresented and/or underserved populations. Additionally, proposed students must be eligible for Navy intern programs and/or eligible for membership in the Navy's civil service, and have the ability to obtain a security clearance. **(Students must be U.S. citizens to obtain a security clearance.)**

The primary basis for selecting proposals for acceptance shall be technical, importance to agency programs and **student participation**.

Cost realism and reasonableness may be considered to the extent considered appropriate by the Government in its sole discretion.

c. Options

The Government will evaluate options for award purposes by adding the total cost for all options to the total cost of the basic requirement. Evaluation of options will not obligate the Government to exercise the options during conduct of grant performance.

B. Evaluation Panel

Technical and cost proposals submitted under this BAA will be protected from unauthorized disclosure using the same protections as awardee proposal information under FAR 3.104-4 and 15.207. The Government scientific experts will perform the evaluation of technical proposals.

C. General Information Regarding the Review and Selection Process for Grants

a. Prior to making an award, NSWC DD shall review and consider any information about the applicant that is in the designated integrity and performance system accessible through SAM.

b. The applicant, at its option, may review information in the designated integrity and performance systems available through SAM and comment on any information itself that a Federal awarding agency previously entered and is currently in the designated integrity and performance systems available through SAM.

c. NSWC DD will consider any comments by the applicant, in addition to the other information in the designated integrity and performance system, in making a judgment about the applicant's integrity, business ethics, and record of performance under Federal awards when completing the review of risk posed by the applicant as described in Title 2, Part 200, Subsection 200.206 Federal awarding agency review of risk posed by applicants.

d. NSWC DD will also ensure that a Proposer is not debarred or suspended prior to making an award.

AWARD ADMINISTRATION INFORMATION

A. North American Industry Classification System (NAICS):

The NAICS code for contracts under this announcement is "541715" with a small business size standard of "1,000 employees".

B. System for Award Management (SAM):

All Proposers submitting proposals or applications must:

a. be registered in the SAM prior to submission;
b. maintain an active SAM registration with current information at all times during which it has an active Federal award or an application under consideration by any agency; and

c. Provide its UEI number in each application or proposal it submits to the agency.

The System for Award Management (SAM) is a free website that consolidates the capabilities you used to find in Central Contractor Registration (CCR)/Federal Agency Registration (FedReg), Online Representations and Certifications Application (ORCA), and Excluded Parties List System (EPLS). Future phases of SAM will add the capabilities of other systems used in Federal procurement and awards processes.

SAM may be accessed at https://www.sam.gov/portal/public/SAM/.

NOTE TO FORMER CCR REGISTRANTS: If you had an active record in CCR, you have an active record in SAM. You do not need to do anything in SAM at this time, unless a change in your business circumstances requires a change in SAM in order for you to be paid or to receive an award. SAM will send notifications to the registered user via email 60, 30, and 15 days prior to expiration of the record. You can search for registered entities in SAM by typing the DUNS number or business name into the search box.

C. Access to your Grant

NSWC DD award/modification documents are only available via the Department of Defense (DoD) Electronic Document Access System (EDA) within the Procurement Integrated Enterprise Environment (PIEE) (https://piee.eb.mil/).
Unless otherwise specified by the Proposer, notifications for the posting of award and modification documents to EDA will be directed to both the Technical Point of Contact and the Business Point of Contact identified in the Proposer's proposal.

EDA is a Web-based system that provides secure online access, storage and retrieval of awards and modifications to DoD employees and vendors.

If you do not currently have access to EDA, you may complete a self-registration request as a "Vendor" via https://piee.eb.mil/ following the steps below:

a. Click "Accept"
b. Click "Register" (top right)
c. Click "Agree"
d. In the "What type of user are you?" drop down, select "Vendor"
e. Select the systems you would like to access
f. Complete the User Profile and follow the site instructions.

Allow five business days for your registration to be processed. EDA will notify you by email when your account is approved.

To access awards after your registration has been approved, log into https://piee.eb.mil/piee-landing/, select "EDA", select either EDA location, select "Contracts", select your search preference, enter the Grant Number, and select "View."

Registration questions may be directed to the EDA help desk toll free at 866-618-5988, commercial at 801-605-7095, or via email at disa.ogden.esd.mbx.cscassig@mail.mil (Subject: EDA Assistance).

OTHER INFORMATION

A. Federal Funding Accountability and Transparency Act of 2006:

The Federal Funding Accountability and Transparency Act of 2006 (Public Law 109-282), as amended by Section 6202 of Public Law 110-252, requires that all agencies establish requirements for recipients reporting information on subawards and executive total compensation as codified in 2 CFR Part 170. Any company, non-profit agency or university that applies for financial assistance (either grants, cooperative agreements or other transaction agreements) as either a prime or sub-recipient under this BAA must provide information in its proposal that describes the necessary processes and systems in place to comply with the reporting requirements identified in 2 CFR Part 170 Appendix A. Entities are required to meet reporting requirements unless an exception or exemption applies. Please refer to 2 CFR Part 170, including Appendix A, for a detailed explanation of the requirements, exceptions, and exemptions.

B. Military Recruiting on Campus (DoDGARS Part 22.520):

This applies to domestic U. S. colleges and universities. Appropriate language from 32 CFR 22.520, Campus access for military recruiting and Reserve Officer Training Corps (ROTC), will be incorporated in all university grant awards.

C. Certification regarding Restrictions on Lobbying:

Grant and Cooperative Agreement awards greater than $100,000, as well as, require a certification of compliance with a national policy mandate concerning lobbying. Grant applicants shall provide this certification by electronic submission of SF424 (R&R) as a part of the electronic proposal submitted via Grants.gov. The following certification applies likewise to each Cooperative Agreement and normal Other Transaction Authority (OTA) applicant seeking federal assistance funds exceeding $100,000:

a. No Federal appropriated funds have been paid or will be paid by or on behalf of the applicant, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the Federal contract, grant, loan, or cooperative agreement, the

applicant shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

c. The applicant shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S.C. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

D. Representation Regarding an Unpaid Delinquent Tax Liability or a Felony Conviction Under any Federal Law - DOD Appropriations:

Financial Assistance Certification: The Federal Assistance Certifications Report is an attestation that the entity will abide by the requirements of the various laws and regulations and the supplemental at Section F.2.iv above. Therefore, as applicable, you are still required to submit any documentation, including the SF LLL Disclosure of Lobby Activities (if applicable), and disclosure of any unpaid delinquent tax liability or a felony conviction under any Federal law of the SF424 (R&R) as part of the electronic proposal submitted via Grants.gov. The representation reads as follows:

a. The applicant represents that it is not a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in timely manner pursuant to an agreement with the authority responsible for collecting the tax liability;

b. The applicant represents that it is_____is not____a corporation that was convicted of a felony criminal violation under any Federal law within the preceding 24 months. NOTE: If an applicant responds in the affirmative to either of the above representations, the applicant is ineligible to receive an award unless the agency suspension and debarment official (SDO) has considered suspension or debarment and determined that further action is not required to protect the Government's interests. The applicant therefore should provide information about its tax liability or conviction to the agency's SDO as soon as it can do so, to facilitate completion of the required consideration before award decisions are made.

E. Representation Regarding the Prohibition on Using FY15 Funds with Entities that Require Certain Internal Confidentiality Agreements:

Agreement with the representation below will be affirmed by checking the "I agree" box in block 17 of the SF424 (R&R) as part of the electronic proposal submitted via Grants.gov. The representation reads as follows:

By submission of its proposal or application, the applicant represents that it does not require any of its employees, Awardees, or Subawardees seeking to report fraud, waste, or abuse to sign or comply with internal confidentiality agreements or statements prohibiting or otherwise restricting those employees, Awardees, or sub-recipients from lawfully reporting that waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information. Note that, as applicable, the bases for this representation are the prohibition(s) as follow:

a. Section 743 of the Financial Services and General Government Appropriation Act, 2015 (Division E of the Consolidated and Further Continuing Appropriations Act, 2015, Pub. L. 113-235).

b. Section 101(a) of the Continuing Appropriation Act, 2016 (Pub. L. 114-53) and any subsequent FY2016 appropriations act that extends to FY2016 the same restrictions as are contained in section 743 of Division E, title VII of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub L. 113-235).

c. Any successor provision of law on making funds available through grants and cooperative agreements to entities with certain internal confidentiality agreements or statements.

The prohibitions stated above do not contravene requirements applicable to Standard Form 312, Form 4414, or any other form issued by a Federal department or agency governing the nondisclosure of classified information.

F. Codes of Conduct and Conflicts of Interest:

Applicants for grants, cooperative agreements, or other transaction agreements as applicable are required to comply with 2 CFR 215.42, Codes of Conduct, to prevent real or apparent conflict of interest in the award and administration of any contracts supported by federal funds. This provision will be incorporated into all assistance instruments awarded under this BAA.

G. Reporting:

If the Federal share of any Federal award may include more than $500,000 over the period of performance, the post award reporting requirements, Award Term and Condition for Recipient Integrity and Performance Matters (2 U.S.C. 200 Appendix XII), is applicable as follows:

H. Reporting of Matters Related to Recipient Integrity and Performance

a. General Reporting Requirement

If the total value of your currently active grants, cooperative agreements, and procurement contracts from all Federal awarding agencies exceeds $10,000,000 for any period of time during the period of performance of this Federal award, then you as the recipient during that period of time must maintain the currency of information reported to the System for Award Management (SAM) that is made available in the designated integrity and performance system about civil, criminal, or administrative proceedings described in Paragraph 2 of the award terms and conditions. This is a statutory requirement under section 872 of Public Law 110-417, as amended (41 U.S.C. 2313). As required by section 3010 of Public Law 111-212, all information posted in the designated integrity and performance system on or after April 15, 2011, except past performance reviews required for Federal procurement contracts, will be publicly available.

b. Proceedings About Which You Must Report:

Submit the information required about each proceeding that:

(1) Is in connection with the award or performance of a grant, cooperative agreement, or procurement contract from the Federal Government;

(2) Reached its final disposition during the most recent five-year period; and

(3) Is one of the following:

a. A criminal proceeding that resulted in a conviction, as defined in Paragraph 5 of the award terms and conditions;

b. A civil proceeding that resulted in a finding of fault and liability and payment of a monetary fine, penalty, reimbursement, restitution, or damages of $5,000 or more

c. An administrative proceeding, as defined in Paragraph 5. of this award term and condition, that resulted in a finding of fault and liability and your payment of either a monetary fine or penalty of $5,000 or more or reimbursement, restitution, or damages in excess of $100,000; or

d. Any other criminal, civil, or administrative proceeding if:

(i) It could have led to an outcome described in Paragraph 2.c.(1), (2), or (3) of this award term and condition;

(ii) It had a different disposition arrived at by consent or compromise with an acknowledgment of fault on your part; and

(iii) The requirement in this award term and condition to disclose

information about the proceeding does not conflict with applicable laws and regulations.

c. Reporting Procedures:

Enter in the SAM Entity Management area the information that SAM requires about each proceeding described in Paragraph 2 of this award term and condition. You do not need to submit the information a second time under assistance awards that you received if you already provided the information through SAM because you were required to do so under Federal procurement contracts that you were awarded.

d. Reporting Frequency

During any period of time when you are subject to the requirement in Paragraph 1 of this award term and condition, you must report proceedings information through SAM for the most recent five-year period, either to report new information about any proceeding(s) that you have not reported previously or affirm that there is no new information to report. Recipients that have Federal contract, grant, and cooperative agreement awards with a cumulative total value greater than $10,000,000 must disclose semiannually any information about the criminal, civil, and administrative proceedings.

e. Definitions

For purposes of this award term and condition:

(1) Administrative proceeding means a non-judicial process that is adjudicatory in nature in order to make a determination of fault or liability (e.g., Securities and Exchange Commission Administrative proceedings, Civilian Board of Contract Appeals proceedings, and Armed Services Board of Contract Appeals proceedings). This includes proceedings at the Federal and State level but only in connection with performance of a Federal contract or grant. It does not include audits, site visits, corrective plans, or inspection of deliverables.

(2) Conviction, for purposes of this award term and condition, means a judgment or conviction of a criminal offense by any court of competent jurisdiction, whether entered upon a verdict or a plea, and includes a conviction entered upon a plea of nolo contendere.

(3) Total value of currently active grants, cooperative agreements, and procurement contracts includes—

(4) Only the Federal share of the funding under any Federal award with a recipient cost share or match; and

(5) The value of all expected funding increments under a Federal award and options, even if not yet exercised.

I. Security Classification:

In order to facilitate intra-program collaboration and technology transfer, the Government will attempt to enable technology developers to work at the unclassified level to the maximum extent possible. If access to classified material will be required at any point during performance, the Proposer must clearly identify such need in Section II, Block 11 of the Proposal Checklist.

If it is determined that access to classified information will be required during the performance of an award, a Department of Defense (DD) Form 254 will be attached to the contract, and FAR 52.204-2 - Security Requirements will be incorporated into the contract.

NSWC DD does not provide access to classified material under grants.

J. Institutional Dual Use Research of Concern:

As of September 24, 2015, all institutions and USG funding agencies subject to the United States Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern must comply with all the requirements listed therein. If your research proposal directly involves certain biological agents or toxins, contact the cognizant Technical Point of Contact. U.S. Government Science, Safety, Security (S3) guidance may be found at https://www.phe.gov/s3/dualuse/Pages/default.aspx.

K. Project Meetings and Reviews:

Individual program reviews between the NEEC sponsor and the performer may be held as necessary. Program status reviews may also be held to provide a forum for reviews of the latest results from experiments and any other incremental progress towards the major demonstrations. These meetings will be held at various sites throughout the country. Additionally, there may be peer reviews in which all current NEEC projects are presented together. For costing purposes, proposers should assume that 40% of these meetings will be at or near the warfare center identified in the topic area and 60% at other awardee or government facilities. Program reviews may also be accomplished via video telephone conferences, telephone conferences, or via web-based collaboration tools.

L. Reporting Executive Compensation and First-Tier Subcontract Awards:

All grants and cooperative agreements awarded under this BAA will use an award term similar to FAR clause 52.204-10, “Reporting Executive Compensation and First-Tier Subcontract Awards.”

M. Organizational Conflicts of Interest

All Proposers and proposed Subawardees must affirm whether they are providing scientific, engineering, and technical assistance (SETA) or similar support to any of the activities identified in the BAA through an active procurement contract, subcontract, grant or cooperative agreement. All affirmations must state which office(s) the Proposer supports and identify the

prime contract numbers. Affirmations shall be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest (FAR 9.5) must be disclosed. The disclosure shall include a description of the action the Proposer has taken or proposes to take to avoid, neutralize, or mitigate such conflict. In accordance with FAR 9.503 and without prior approval, an awardee cannot simultaneously be a SETA and a research and development performer. Proposals that fail to fully disclose potential conflicts of interests or do not have acceptable plans to mitigate identified conflicts will be rejected without technical evaluation and withdrawn from further consideration for award. If a prospective Proposer believes that any conflict of interest exists or may exist (whether organizational or otherwise), the Proposer should promptly raise the issue with NSWC DD by sending his/her contact information and a summary of the potential conflict by e-mail to the Business Point of Contact in Section I, item 7 above, before time and effort are expended in preparing a proposal and mitigation plan.

If, in the sole opinion of the Grants Officer after full consideration of the circumstances, any conflict situation cannot be effectively avoided or mitigated, the proposal may be rejected without technical evaluation and withdrawn from further consideration for award under this BAA.

AWARD NOTICES

Proposers will be notified in writing whether or not their proposal is recommended for award. 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. A grant signed by a warranted Grants Officer is the only official notice that an award has been made.

DEBRIEFINGS

Proposers whose proposals are not recommended for award may request a debriefing within ten (10) calendar days to discuss the evaluation of their proposal. The nature, form, and date of a debriefing is within the discretion of the Government. Additional information on debriefing requests will be forwarded to proposers with the notice advising of a proposal not being recommended for award.