Funding Opportunity: DOD Releases Naval Engineering Education Consortium BAA

Lewis-Burke Associates LLC – September 11, 2020

The Department of Defense (DOD) recently released a broad agency announcement (BAA) for the Naval Engineering Education Consortium (NEEC). The NEEC program, directed by the Naval Sea Systems Command (NAVSEA) Warfare Center, encourages student participation in the naval engineering workforce through project-based research in naval technology. The Indian Head Explosive Ordnance Disposal Technology Division (IHEODTD) of the Naval Surface Warfare Center (NSWC) is soliciting research of interest to participating Warfare Centers around the country. Some of the BAA topics of interest include data science, quantum information science, machine learning and artificial intelligence, cyber, and unmanned underwater vehicles.

Topics included in the BAA are as follows:

Naval Surface Warfare Center Corona Division
- Advancement of photonic sensors and detectors (including quantum-based) in emerging measurement technology areas such as Autonomous Systems and Chemical, Biological, Nuclear, Radiological, & Explosives (CBNRE).
- Development of new or improved quantum algorithms in areas involving machine learning and data science.

Naval Surface Warfare Center Crane Division
- Effects of turbulent transition over conical nose cones.

Naval Surface Warfare Center Dahlgren Division
- Hypersonic thermal protection systems to predict the heating of hypersonic vehicles caused by turbulent heating.
- Research on advanced Refractory High-Entropy Alloys (RHEAs) for casting, machining, additive manufacturing, and surface coating.
- New forms of software assurance and cybersecurity education that involve topics of interest to the naval research enterprise.
- Hybrid energy storage for shipboard Directed Weapons (DE) Weapons.
- Use techniques such as AI-ML, reinforcement learning, and probabilistic or expert systems capabilities to improve target assignment for unmanned and manned warships within the naval task force.
- Research on the effectiveness of assistive visualization technologies for Electronic Warfare (EW) systems.
- Prototype AI agent development to aid system safety engineers in extracting design features that could be hazardous.

Naval Surface Warfare Center Indian Head EOD Tech Division

- Novel energetic materials and systems that include predictive methods, energy storage, enhanced safety and reduced sensitivities.
- Advanced manufacturing methods and processes for energetic and explosive ordnance disposal (EOD) applications.
- Improved EOD analytical tools and methods for remote detection/characterization of unexploded ordnance (UXO) and home-made explosives (HME) to render them safe.
- Development of sensing, sequestering, identifying, repelling, self-cleaning or self-decontaminating material.
- Mitigation technologies against toxins, bacteria, viruses and/or their respective stimulants/surrogates.

Naval Surface Warfare Center Philadelphia
- Techniques to improve the security and resilience of Supervisory Control and Data Acquisition (SCADA) networks using Software Defined Networks (SDN) technologies.
- Modeling of reactive flow and fire from energy storage systems to build capability while considering reactive flow in vent paths, flame impingement on surfaces, and flame fronts under marginally mixed environments in enclosed spaces, for a set of common battery electrolyte compositions.

Naval Undersea Warfare Center Port Hueneme
- Advanced computer vision methods and algorithms to verify the completion and accuracy of complex maintenance tasks.
- Research and development of radio frequency transparent 'super hydrophobic' coatings to prevent ice formation on combat and communication systems in arctic and subarctic atmospheres.

Naval Undersea Warfare Center Keyport Division
- Gaming applications for training and performance, including expanding Unmanned Underwater Vehicles (UUV) capabilities through artificial intelligence (AI) to improve autonomous perception.

Naval Undersea Warfare Center Newport Division
- Develop Digital Twin and Simulation Based Design (SBD) for navy related systems to interrogate/assess performance of complex physical builds in a virtual environment.
- Develop advanced imaging and electronic capabilities through the exploration of the full electromagnetic (EM) spectrum.
- Investigate R&D efforts that will influence the cyber resilience at all phases of undersea systems life cycle engineering including design, construction, deployment, and execution.

Naval Sea Systems Command
- Develop information on the exposure of protected marine species to Navy activities and the consequences of Naval activities on protected marine species, specifically those from the Gulf of Mexico, Pacific Northwest.

Due Dates: Eligible applicants may submit full proposals through www.grants.gov under more than one topic area. Applicants may submit multiple proposals but may not submit the same technical proposal to more than one warfare center or activity. The closing date for this BAA is **October 30, 2020** at **11:59 PM ET**. The estimated award date is **March 1, 2021**.

Total Funding and Award Size: DOD anticipates making multiple awards. DOD states that awards for the first year with two option years will total $100,000 to $150,000 and awards funded for three years will receive a total funding amount of $300,000 to $450,000.

Eligibility and Limitations: DOD is accepting proposals from "all responsible sources from academia." Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs) are encouraged to apply. Federally Funded Research & Development Centers, DOD and civilian agency laboratories, and University Affiliated Research Centers are not eligible to submit proposals.

Source and Additional Background:
- The full BAA is available at www.grants.gov under solicitation number "N00174-20-0001."