Opportunity Title: Biomedical Engineering / Mechanical Engineering / Physiology - PhD
Opportunity Reference Code: NEDU-2020-0006

Organization U.S. Department of Defense (DOD)

Reference Code NEDU-2020-0006

How to Apply Components of the online application are as follows:

- Profile Information
- Educational and Employment History
- Essay Questions (goals, experiences, and skills relevant to the opportunity)
- Resume (PDF)
- Transcripts/Academic Records - For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. Click here for detailed information about acceptable transcripts.
- 2 Recommendation(s)

Submitted documents must have all social security numbers, student identification numbers, and/or dates of birth removed (blanked out, blackened out, made illegible, etc.) prior to uploading into the application system.

If you have questions, send an email to **NAVY@orise.orau.gov**. Please list the reference code of this opportunity in the subject line of the email.

All documents must be in English or include an official English translation.

Description This opportunity takes place at the Navy Experimental Diving Unit (NEDU) in Panama City, Florida. NEDU's mission is to conduct manned, unmanned, and biomedical research; develop, test, and evaluate diving, hyperbaric, life support, and submersible systems and procedures; and ensure all diving equipment and procedures meet the safety standards and operational requirements to expand the U.S. Navy's advantage during any undersea military operation. NEDU is equipped with the United State's largest research hyperbaric chamber complex for wet and dry hyperbaric/diving operations, a 55,000 gallon test pool, and state-of-the-art physiological research facilities.For further information, please visit https://www.navsea.navy.mil/Home/SUPSALV/NEDU/

Project collaborations will be in the Biomedical Research Department, providing technical expertise in the planning and execution of research, development, testing, and evaluation (RDT&E) related to physiology, mathematical modeling of physiological data, and computer programming. The program efficiently minimizes the incidence and severity of decompression sickness in U.S. Navy undersea diving and submarine operations. Specific emphasis is placed on synthesis of scientific data into guidance for undersea operations. This research contributes to or affects mission effectiveness and operational capabilities and safety of U.S. Navy diving and submarine operations.

The prospective candidate will receive mentoring by NEDU's Decompression Research Group who collectively have 80 years experience developing and testing new procedures for conducting undersea operations. Two projects have been identified which will be conducted during FY21 and provide opportunities to participate in both unmanned and manned research. The two projects are test and evaluation of prospective real-time decompression computers for acquisition by the U.S. Navy and the development of procedures to conduct surface decompression following constant 1.3

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PO2 in HeO2 diving. In addition, the participant will have opportunities to conduct test protocol development, data collection, statistical analysis, decompression procedure development, and report writing will be provided. The initial appointment will be for one year of training, but may be renewed for up to three more years.

Appointment Length

This appointment is a twelve month research appointment, with the possibility to be renewed for additional research periods. Appointments may be extended depending on funding availability, project assignment, program rules, and availability of the participant.

Participant Benefits

Participants will receive a stipend to be determined by **NEDU.** Stipends are typically based on the participant's academic standing, discipline, experience, and research facility location. Other benefits may include the following:

- Health Insurance Supplement. *Participants are eligible to purchase health insurance through ORISE.*
- Relocation Allowance
- Training and Travel Allowance

Nature of Appointment

The participant will not enter into an employee/employer relationship with ORISE, ORAU, DOD, or any other office or agency. Instead, the participant will be affiliated with ORISE for the administration of the appointment through the ORISE appointment letter and Terms of Appointment.

Qualifications

Research activities at NEDU will expose the candidate to all aspects of the research process, from experimental design to collection and analysis of data, and publication of reports. Potential candidates should meet the following requirements:

. Ph.D. Engineer or scientist with a background in biomedical engineering, mechanical engineering, or respiratory or systems physiology.
. Experience reviewing and synthesizing scientific information including journal articles, technical reports, research proposals, experimental protocols, and raw and compiled data files.
. (Highly Desired, but not required) Experience conducting human subject research.
. (Highly Desired, but not required) Experience and knowledge in diving and/or hyperbarics.
. (Highly Desired, but not required) Experience with C# .Net programming language.

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 month(s).
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Communications and Graphics Design** (1 👁)
  - **Computer, Information, and Data Sciences** (16 👁)
  - **Earth and Geosciences** (21 👁)

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- **Engineering** (27 👁)
- **Environmental and Marine Sciences** (14 👁)
- **Life Health and Medical Sciences** (45 👁)
- **Mathematics and Statistics** (10 👁)
- **Other Non-Science & Engineering** (2 👁)
- **Physics** (16 👁)
- **Science & Engineering-related** (1 👁)
- **Social and Behavioral Sciences** (27 👁)

- **Age:** Must be 18 years of age