

Opportunity Title: Physiology / Engineering: Human Cardiovascular Research

Opportunity Reference Code: NEDU-2020-0004

Organization U.S. Department of Defense (DOD)

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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.](#)
- 1 Recommendation(s)

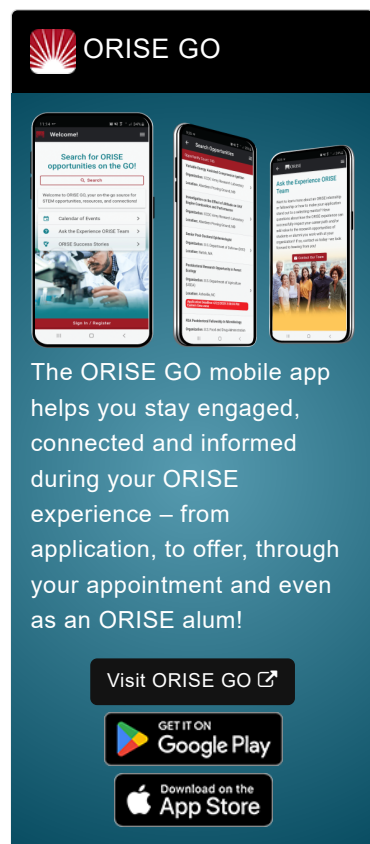
Submitted documents must have all social security numbers, student identification numbers, and/or dates of birth removed (blanked out, blackened out, made illegible, etc.) prior to uploading into the application system.

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 nation'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/>

The Navy Experimental Diving Unit (NEDU), Panama City Beach, FL, seeks to **immediately** recruit a trainee of an Engineering and/or Physiology pedigree that will primarily support current projects of calorimetry, thermoregulation and thermal protection from extreme cold and warm water dives. Several projects will chronologically combine over an approximate 5 to 6 year period that begin with a review of literature and data in NEDU's possession and transition into first algorithm and later model development, thereby resulting in thermal equipment guidance to focus future cold and warm-water operational and experimental needs. It is expected that the



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selectee will co-author numerous abstracts, manuscripts, attend conferences to disseminate findings and gain notoriety/credibility as a thermoregulation science expert. This is a **twelve-month** research appointment with the strong possibility of annual renewal for a maximum total of four years for the ideally credentialed and successful selectee. Appointment extension will be dependent upon funding availability, project assignment, program rules, and availability of the participant. A successful multi-year trainee can expect opportunities to conduct human subject research using cardiovascular, respiratory and muscular performance testing following stressful diving scenarios, exposure to increased oxygen levels, and/or thermal challenge as well as training in algorithm, database and model building. Special consideration will be given to candidates with 1) demonstrated research experience and scientific publications in the area of thermal physiology and/or engineering 2) the ability to perform appropriate statistical analysis and develop tables and decision tree algorithms in various formats, and 3) experience in database generation and quantitative modeling. Other beneficial candidate attributes include a strong knowledge in heat flow, wearable and/or insulative materials research, sensor development, thermal management, energy efficiency, nano- and microscale transport, and computer-based algorithm development and modeling.

This NEDU opportunity is available through the Oak Ridge Institute for Science and Education (ORISE) and can be found at the Zintellect.com website by searching using the keyword "NEDU".

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.

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

- An M.S. or Ph.D. in Physiology or a B.S./M.S./Ph.D. in Engineering from an accredited educational institution is required. Scientific experience in cardiovascular and/or thermal sciences are strongly preferred but not required. A reminder, stipend will be commensurate with education and experience.
- Knowledge of, and skill in, scientific investigation is required. Ideally, the candidate will have experience with many of the specific fields of diving and hyperbaric systems and components to include: thermal human physiology, monitoring, manned/unmanned testing techniques, data acquisition instrumentation and software, scientific discipline, and archiving.
- Experience reviewing scientific documents including journal articles, technical reports, research proposals, experimental protocols, and raw and compiled data files, with subsequent document/manuscript generation is required.
- Experience conveying scientific research and technical details with clarity, precision, and a compelling delivery for optimal reception by both scientific and non-scientific audiences is required.

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or currently pursuing.
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([12](#) )
 - **Communications and Graphics Design** ([2](#) )
 - **Computer, Information, and Data Sciences** ([16](#) )
 - **Earth and Geosciences** ([21](#) )
 - **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](#) )