



**OAK RIDGE INSTITUTE  
FOR SCIENCE AND EDUCATION**

*Shaping the Future of Science*

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## **U.S. Department of Defense**

*Now accepting applications for research opportunities!*



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### **Molecular Biology and Drug Discovery**

U.S. Army Medical Research Institute of Chemical Defense | Aberdeen Proving Ground, MD

| **STIPEND PROVIDED**

The candidate will have the opportunity to participate in most aspects of the project. This research involves both in vitro and in vivo techniques including cell culture, high throughput siRNA screening, immunoassays, multiplexed immunoassays, cell viability assays, robotic liquid handlers, small animal surgery, tissue dissection, small animal ocular exams, and data analysis. The candidate will learn a number of in vitro and in vivo techniques while

participating in this NIH funded project. They will have the opportunity to master techniques and operate instrumentation the same as that used by leading pharmaceutical companies. Knowledge of these cutting edge research techniques and instrumentation will make the candidate very attractive for internal and external job opportunities.

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## Computer Vision Scientist/Engineer

U.S. Army Corps of Engineers | Duck, NC | **STIPEND PROVIDED**

The prospective postdoctoral intern will conduct applied research in the area of computer vision, image processing and analysis, and data visualization. The overall objectives for this research are to develop new software tools that provide rapid analysis of coastal imagery using feature recognition and structure-from-motion and wave-kinematics inversion algorithms to calculate seamless coastal topo-bathymetric surfaces. Emphasis will be placed on automation, improving algorithm speed to reduce processing times and increase computational efficiency so that algorithms may be run onboard UAS or on small processors (e.g. mobile apps, toughbooks), as well as constructing an easy to use software interface to process and visualize results.

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## Physiology/Engineering: Cardiovascular and Thermal Human Research

Navy Experimental Diving Unit | Panama City Beach, FL | **STIPEND PROVIDED**

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 during cold water dives. Upon arrival to NEDU, the prospective candidate is expected to conduct a review of literature and data in NEDU's possession that will result in thermal equipment guidance and will serve to focus future cold and warm-water operational and experimental needs. Secondary opportunities to conduct cardiovascular, respiratory and muscular performance testing following stressful diving scenarios, exposure to increased oxygen levels, and/or thermal challenge may follow. Special consideration will be given to candidates with 1) demonstrated research experience and scientific publications in the area of thermal physiology and/or engineering and 2) the ability to perform appropriate statistical analysis and develop tables and decision tree algorithms in various formats. Other beneficial candidate attributes include a strong knowledge in heat flow, wearable and/or insulative materials research, sensor development, thermal management, energy efficiency, and nano- and microscale transport.

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## Water Desalination Analytical Researcher

U.S. Combat Capabilities Development Command Soldier Center | Natick, MA | **STIPEND PROVIDED**

The goal of the Emerging Materials Development Team (EMDT) is to answer these challenges with material solutions. Individual Soldier hydration is one of the main program

areas on the EMDT that is currently being researched. Specifically we desire to be able to clean-up natural bodies of water in order to make the water potable for Soldiers. As an ORISE participant at CCDC Solider Center, you will learn the use of several different analytical techniques in order to ensure that the new desalination technologies can remove all contaminants. You will gain knowledge in using state-of-the-art liquid chromatography instruments coupled with triple quadrupole mass spectrometers (LC-MS). This learning experience will also provide you an opportunity to familiarize yourself with areas of military research interest and hands on experience needed for career development.

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## Directed Energy Bioeffects Postdoctoral Researcher

Air Force Research Lab | San Antonio, TX | **STIPEND PROVIDED**

The Bioeffects Division of AFRL 711 HPW leads the mission to exploit and protect against the bioeffects of battlefield environmental stressors. The specific objectives of this division include facilitating directed energy weapons development and use; preventing mission degradation due to directed energy exposure; and enabling our forces to function safely, effectively, and efficiently on the directed energy battlefield. The postdoctoral researcher will design and construct novel optical imaging systems that will be used to study the response of cell cultures to pulsed directed energy systems. The participant will gain experience working in cell culture, collecting and analyzing imaging data, and designing experiments to answer fundamental questions regarding the cellular response to direct energy stimulation.

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## Postdoctoral Psychology Fellow

U.S. Army Combat Capabilities Development Command Soldier Center | Natick, MA | **STIPEND PROVIDED**

As an ORISE participant you will gain insight into applied cognitive science methods to assess the effectiveness of supplementary instructional tools in relevant Army training and education environments. During your appointment you will learn how to conduct research that informs the design and features of learning applications to promote learning and retention. This opportunity will provide you with career developing knowledge and hands-on experience in data collection and analysis, literature reviews and manuscript writing as well as presenting scientific findings.

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## Nuclear Enterprise Researcher

Air Force Institute of Technology | Dayton, OH | **STIPEND PROVIDED**

The selected participant may be involved in support of coursework, laboratory practice, application of computer technologies, and interact with government (Military and National Laboratory), and civilian university collaborators. In addition, the participant will conduct measurements and experiments, evaluate data, interpret the results, and document the findings and have opportunities to present the research to their peers, mentors, and other DoD Scientists and Engineers at meetings and conferences.

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## Data Analysts for Caserma Ederle Military Community

U.S. Army Garrison, Italy, Soldier for Life Transition Assistance Program | Vicenza, Italy

| **STIPEND PROVIDED**

The U.S. Army Garrison, Italy, Soldier for Life Transition Assistance Program (SFL-TAP) serves as the installation's representative (fellow) of the SFL-TAP, performing a variety of data research and data analysis projects, administrative, logistical, and related duties in direct support of the program. Under the guidance of a mentor, the participant selected for this opportunity will provide support to the Soldier for Life Transitions Assistance Program by researching policies and procedures to ensure that the program is in compliance with Department of Defense (DoD) guidelines.

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The mission of the Department of Defense (DoD) is to provide the military forces needed to deter war and protect the security of the United States. To support this mission, the DoD is the largest employer of scientists

and engineers in the nation. To ensure a continued talent pool, the DoD works hard to grow the Science, Technology, Engineering and Math (STEM) workforce. The DoD's Research Participation Programs are managed by the Oak Ridge Institute for Science and Education (ORISE) under an interagency agreement between the DoD and the U.S. Department of Energy (DOE). With the support of the DOE interagency agreement and management from ORISE, the DoD prepares and strengthens the United States STEM workforce.

