Opportunity Title: Algorithm Development - Undergraduate Summer Internship
Opportunity Reference Code: USAMRDC-RIEM-2024-0009

Organization U.S. Department of Defense (DOD)

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How to Apply Click on *Apply* now at the bottom of the opportunity to start your application.

Description The U.S. Army Research Institute of Environmental Medicine (USARIEM) is an internationally recognized military laboratory located in Natick, Massachusetts, with the overreaching research goal of maximizing and optimizing Warfighter health and performance. USARIEM's research is divided into three divisions: Thermal and Mountain Medicine, Military Performance, and Military Nutrition.

What will I be doing?

As part of this learning experience, you will join a community of scientists and researchers in an effort to develop sensors and algorithms that can prevent Soldier illness/injury and also use those sensors to optimize Soldier performance. As part of the HRAPS program we are developing a heat injury illness algorithm and algorithms to pace Soldiers as they complete a known training exercise such as a 12-mile ruck march. To improve and validate the heat injury prevention algorithm we are automating our data analysis pipeline. For the validation of the pacing algorithm, we are developing a real-time feedback smart phone App that can automatically pace Soldiers or study volunteers.

Why should I apply?

This learning experience will also provide you with an opportunity to learn industry standards for data processing, cleaning, and analysis. You will learn advanced machine learning approaches to identifying and classifying exertional heat injuries, and how to translate advanced Artificial Intelligent algorithms to an Android Smart phone platform. By the end of this experience, you will have gained the knowledge and understanding of industry standards in writing code for a smart phone, ergonomic design aspects such as information flow and human computer interaction principles.

Where will I be located?

Natick, Massachusetts (Some travel to US Army and Marine bases for data collection may be required)

What is the anticipated start date?

The USARIEM is ready to make appointments effective May 2024. Exact start dates will be determined at the time of selection and in coordination with the selected candidate. Applications are reviewed on an ongoing basis and internships will be filled as qualified candidates are identified.

Appointment Length

Appointments vary depending on the needs of the opportunity and may be extended depending on funding availability, project assignment, program rules, and participant availability.

What are the benefits?

You will receive a stipend to be determined by the Department of Defense (DoD). Stipends are

typically based on a 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.

About USARIEM

The U.S. Army Research Institute of Environmental Medicine (USARIEM), in Natick, Massachusetts, is recognized as the DoD's premier laboratory for Warfighter health and performance research and focuses on environmental medicine, physiology, physical and cognitive performance, and nutrition research. Military guidance has been published for operations in heat, cold, and high-altitude environments and nutrition for health and performance.

The Institute has four divisions: Military Nutrition, Military Performance, Thermal and Mountain Medicine, and Research Support. By leveraging its unique capabilities and facilities with industry, academia, and the government, USARIEM produces various essential products, including performance optimization doctrine, preventive medicine, planning doctrine, materiel development support, physiological monitoring strategies and predictive algorithms, and Health Hazard Assessments.

About ORISE

This program, administered by Oak Ridge Associated Universities (ORAU) through its contract with the U.S. Department of Energy (DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and DoD. Participants do not enter into an employee/employer relationship with ORISE, ORAU, DoD, or any other office or agency. Instead, you will be affiliated with ORISE for the administration of the appointment through the ORISE appointment letter and Terms of Appointment. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE. For more information, visit the ORISE Research Participation Program at the U.S. Department of Defense.

Qualifications

Qualified candidates must be a current student pursing a Bachelor's degree in a biomedical or computational science field (such as biomedical engineering, or computer science) or the following sub-disciplines:

- Chemical Engineering
- Electrical Engineering
- Mechanical Engineering

Highly competitive applicants will have experience or skills in the following:

- Familiarity with advanced coding languages such as C# and Java, and have demonstrated this in developing their own programs.

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- Experience programming within statistical software programs (such as Matlab or equivalent).
- General knowledge of basic statistics, i.e., how to use descriptive and analytical statistics such as a t-test.

Application Requirements

A complete application consists of the following:

- Zintellect Profile
- Educational and Employment History
- CV and Cover Letter describing achievements, research interests, career goals, reason of interest, and suitability for this appointment (maximum two pages) - please upload to the resume section on the application
- 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.
- One Recommendation
- If you have questions, send an email to orise-army-mrdc-riem@orise.orau.gov. Please list the reference code of this opportunity USAMRDC-RIEM-2024-0004 in the email's subject line. Please understand that ORISE does not review applications or select applicants; selections are made by the sponsoring agency identified on this opportunity. All application materials should be submitted via the "Apply" button at the bottom of this opportunity listing. Please do not send application materials to the email address above.

Connect with ORISE...on the GO! Download the new ORISE GO mobile app in the Apple App Store or Google Play Store to help you stay engaged, connected, and informed during your ORISE experience and beyond!

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Currently pursuing a Bachelor's Degree.
- **Academic Level(s):** Undergraduate Students.
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (16 👁)
  - **Engineering** (5 👁)
  - **Life Health and Medical Sciences** (45 👁)
- **Age:** Must be 18 years of age