

Opportunity Title: Canine Platelet Mitochondria Respiration Assays Research

Opportunity Reference Code: USAISR-2024-0005

Organization U.S. Department of Defense (DOD)

Reference Code USAISR-2024-0005

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

Description The U.S. Army Institute of Surgical Research is offering an internship in College Station, Texas.

What will I be doing?

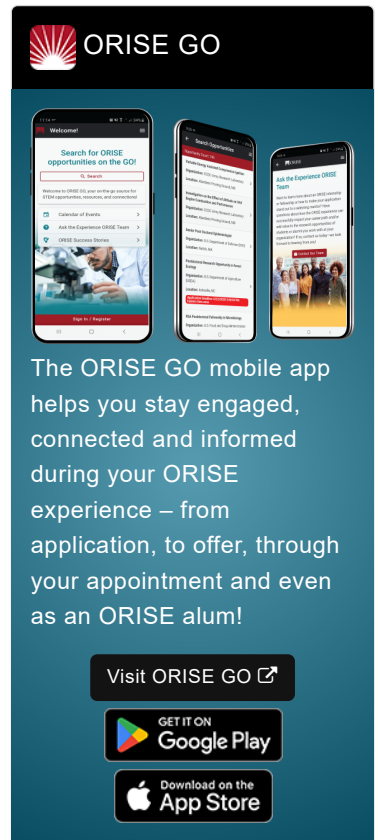
As an Oak Ridge Institute for Science and Education (ORISE) participant, you will join a community of scientists and researchers in an effort to improve outcomes for wounded Warfighters in support of return to duty and maximizing force readiness. In pursuit of this purpose, our long-term goal is the identification and testing of therapeutic agents that modulate critical stress physiology, enabling superior patient outcomes in resource austere conditions. The objective of this proposal, which is a key step in reaching our long-term goal, is to expand our understanding of mitochondrial function in health and disease in canines, using platelet mitochondria as a focal point.

Despite decades of research, the cellular pathophysiology of shock remains incompletely understood. However, it is clear that the mitochondria – the energy-producing organelles that supply cells with the adenosine triphosphate (ATP) that is critical to life – are central players in the integrated cellular response to critical stress. Crucially, mitochondria depend on the presence of oxygen to carry out their core function of ATP synthesis as well as to maintain their own internal physiology. By depriving mitochondria of oxygen, hemorrhagic shock simultaneously decreases cellular energy production and injures mitochondria. Given the importance of mitochondria to cellular survival, the study of mitochondrial function during hemorrhage could yield critical insights into the pathophysiology of shock in canines and humans.

Expected Outcomes:

Specific Aim 1 – Establish the range of normal platelet mitochondrial respiration in otherwise healthy dogs. Using peripheral blood samples procured from dogs undergoing routine health visits, we will establish the normal range of platelet mitochondrial respiratory parameters. Our working hypothesis is that the normal range will be constant across animals which is a necessary precondition for the use of platelet mitochondria as a diagnostic tool for shock.

Specific Aim 2 – Establish the range of platelet mitochondrial respiratory parameters in critically ill canines. Using samples procured from critically ill canine patients, we will determine the range of platelet mitochondrial respiratory parameters. Our working hypothesis is that mitochondrial respiratory parameters from platelets taken from critically ill dogs will be significantly different from those taken from healthy dogs.

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Why should I apply?

Under the guidance of a mentor, you will gain hands-on experience to complement your education and support your academic and professional goals. Along the way, you will engage in activities and research in several areas. These include, but are not limited to:

- Perform hands-on preparation of biologic samples and perform state of the art assays
- Document all research in laboratory notebook and other required research templates.
- Utilize various government and commercial sources to maintain inventory of supplies and equipment
- Develop a comprehensive understanding of various scientific assays for mitochondrial function
- Acquire an in-depth knowledge of biomedical research and data analysis
- Develop proficiency at coagulation assays and manuscript preparation

Where will I be located? College Station, Texas

What is the anticipated start date?

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 or fellowships will be filled as qualified candidates are identified.

What is the 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.

What are the benefits?

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

- Participants are eligible to purchase health insurance through ORISE
- Training and Travel Allowance

About USAISR

The U.S. Army Institute of Surgical Research is one of six research laboratories within the U.S. Army Medical Research and Materiel Command of the U.S. Army Medicine Command. The Institute is the Army's lead research laboratory for improving the care of combat casualties. The mission of the Institute is to "Optimize Combat Casualty Care".

About ORISE

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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 The qualified candidate will hold or be currently pursuing an Associate's, Bachelor's, or Master's degree in any of the listed disciplines in the eligibility section. Postgraduates must have received their degree within five years of the appointment start date.

Highly competitive applicants will have education and/or experience in one or more of the following:

- Strong bench skills, particularly with pipetting, diluting solutions, and sample handling/processing
- Strong organization and documenting skills
- Experience with biomedical assays or similar techniques (at least 1y, preferred)
- Assay/sample prep, optimization, and preliminary analysis; able to run assays concurrently
- Experience in Excel: data entry, basic cell organization, and basic formulas
- Ability to troubleshoot biomedical analyzers
- Experience with compiling individual data sets and providing summarized results to PI
- Strong communication skills

Application Requirements

A complete application consists of:

- Zintellect Profile
- Educational and Employment History
- Essay Questions (goals, experiences, and skills relevant to the opportunity)
- Resume (PDF)
- Transcripts/Academic Records - Please upload a copy of a transcript for your current or most recent degree program that meets the disciplinary qualifications of the opportunity. [Click here for detailed information about acceptable transcripts.](#)
- One recommendation We encourage you to contact your recommender(s) as soon as you start your application to ensure they are able to complete the recommendation form and to let them know to expect a message from Zintellect. Recommenders will be asked to rate your scientific capabilities, personal characteristics, and describe how they know you. You can always log back in to your Zintellect account and check the status of your application.

If you have questions, send an email to ARMY-MRMC@orise.ora.gov. Please list the reference code of this opportunity [USAISR-2024-0005] in the subject line of the email. Please understand that ORISE does not review applications or select applicants; selections are made by the

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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.

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Point of Contact [Leslie](#)

- Eligibility**
- **Citizenship:** U.S. Citizen Only
- Requirements**
- **Degree:** Associate's Degree, Bachelor's Degree, or Master's Degree received within the last 60 months or anticipated to be received by 5/16/2024 12:00:00 AM.
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([4](#) 👁)
 - **Engineering** ([3](#) 👁)
 - **Life Health and Medical Sciences** ([51](#) 👁)
 - **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).