Opportunity Title: Role of Circadian Transcriptional Machinery Under Air Force Relevant Stressors Research Fellowship
Opportunity Reference Code: AFRL-711HPW-2024-0008R

Organization	U.S. Department of Defense (DOD)
Reference Code	AFRL-711HPW-2024-0008R
How to Apply	Click on *Apply* at the bottom of the opportunity to start your application.

Description

The Bioeffects Division, part of The Air Force Research Laboratory (AFRL), at Joint Base San Antonio seeks a qualified researcher in Biology or Bioengineering.

The Bioeffects Division has played a key role in understanding the biological effects of directed energy (DE) for more than 50 years. The mission of The Bioeffects Division is to understand the fundamental mechanisms underlying the interaction of DE with biological systems to mitigate risks associated with warfighter exposure to DE sources. Specific objectives of the division include preventing mission degradation due to DE exposure and enabling our forces to function safely, effectively, and efficiently on the DE battlefield.

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 to investigate the role of circadian transcriptional machinery in cellular response to Air Force relevant extreme environments.

Disrupted circadian rhythms have been linked to numerous adverse health conditions and could increase vulnerability to external stressors such as extreme temperatures, changes in oxygen concentrations, and exposure to contaminants. The circadian transcriptional machinery is endogenous to nearly all tissues in the body and is associated with various aspects of human behavior and performance. The overall goal of this effort is to explore the possibility of restoring, maintaining, or enhancing cellular response by optimizing the output of the circadian transcriptional machinery under conditions of exposure to relevant external stress.

To achieve this goal, the study aims to answer two fundamental questions:

- What specific small molecules target core proteins of the circadian transcriptional machinery in response to extreme stress environments?

- Can the circadian transcriptional output be enhanced to sustain against extreme stress environments?

This study will include cell culture and molecular biology techniques, such as viability/proliferation, gene expression, CRISPR/Cas9 gene editing, etc., as well as microscopy and data

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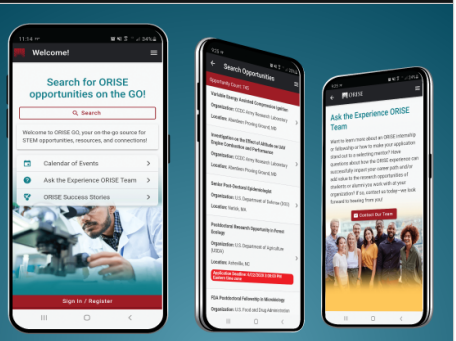

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analysis/processing.

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:

- Gaining experience in active Department of Defense research, with access to state-of-the-art RF exposure and imaging equipment
- Collaborating to plan, design, and conduct interdisciplinary studies in the fields of cellular and molecular biology, imaging, and data processing
- Communicating research in written and oral presentations

Where will I be located?

San Antonio, 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 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 AFRL. 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

About AFRL/Bioeffects Division

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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

The qualified candidate will be currently pursuing or hold a Master's degree or Doctoral degree in one of the required areas of discipline in the eligibility section.

Highly competitive applicants will have:

- Knowledge with the CRISPR/Cas9 gene editing technique.
- Knowledge of Florescence microscopy.
- Track record of publications that demonstrate experience.

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 recommenders 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 airforce@orise.orau.gov. Please list the

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reference code of this opportunity AFRL-711HPW-2024-0008 in the subject line of the email. 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.

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Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or currently pursuing.
- **Academic Level(s):** Graduate Students, Postdoctoral, or Post-Master's.
- **Discipline(s):**
  - **Engineering** (1 👁)
  - **Life Health and Medical Sciences** (51 👁)