Opportunity Title: Bioeffects Research Opportunity at the U.S. Air Force Research Laboratory (AFRL)
Opportunity Reference Code: AFRL-711HPW-2022-0018

Organization U.S. Department of Defense (DOD)

Reference Code AFRL-711HPW-2022-0018

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

Description The U.S. Air Force Research Laboratory (AFRL) is offering internships or fellowships in the Bioeffects Division (RHD). As part of AFRL, RHD has played a key role in understanding the biological effects of directed energy (DE) for more than 50 years. The mission of RHD 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 ORISE participant, you will join a community of scientists and researchers in an effort to contribute to the investigation of adaptive response in mammalian cells exposed to non-ionizing radiofrequency electromagnetic fields.

Extensive scientific literature has described acquired adaptive response (AR) in cells preconditioned with a low-dose stimulation (mild stress) of a chemical, a biological, or a physical insult. The preconditioning provides cellular resilience to damage induced by a subsequent high-dose inhibition (severe stress) of a same or a different insult. There is an indication in literature that preconditioning with radiofrequency (RF) electromagnetic fields (EMFs) has a potential to induce such AR to adverse effects from subsequent challenges in animals and in cultured cells. The goal of the project is to identify, define, and exploit a RF-EMF low-dose stimulation range that would promote an AR in cells (e.g., neuronal cells). The team aims to perform an in-depth investigation of a RF-EMF adaptive response phenomenon in cultured cells, verify its feasibility as a preconditioning agent in different stress scenarios, and elucidate the underlying molecular mechanisms of action.

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 an active Department of Defense Biosafety Level 2 laboratory.
- Collaborating to plan, design and conduct interdisciplinary research in the fields of cellular, molecular and neurobiology.
- Collecting and analyzing data as well as communicating research in written and oral presentations.

Where will I be located?

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Joint Base San Antonio-Fort Sam Houston, San Antonio, TX

What is the anticipated start date?

AFRL is ready to make appointments immediately. 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 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

AFRL is headquartered at Wright-Patterson Air Force Base in Ohio, home to the Wright brothers and recognized as the birth place of aviation. AFRL is comprised of Technology Directorates, Functional Directorates, 711th Human Performance Wing and the Air Force Office of Scientific Research. The 711th Human Performance Wing (711 HPW), headquartered at Wright-Patterson Air Force Base in Ohio, is the first human-centric warfare wing to consolidate human performance research, education, and consultation under a single organization. Established under AFRL, the 711 HPW is comprised of the Airman Systems Directorate (RH) and the United States Air Force School of Aerospace Medicine (USAFSAM). For more information on the AFRL 711 HPW RH Bioeffects Division, please visit https://www.afrl.af.mil/711HPW/RH/.

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.

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Qualifications

The qualified candidate should have completed, or expects to complete by June 30, 2023, a master's degree and/or PhD in cell biology or a related field. Degree must have been received within five years of the appointment start date.

Highly competitive applicants will have a keen interest in producing new findings that illuminate on interaction of DE with biological systems. They will have education and/or experience in molecular and cell biology techniques and microscopy, with publications that demonstrate experience in these areas.

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 - 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. Your application will be considered incomplete and will not be reviewed until one recommendation is submitted. We encourage you to contact your recommender 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 reference code of this opportunity [AFRL-711HPW-2022-0018] 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.

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:** Master's Degree or Doctoral Degree received within the last 60

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months or anticipated to be received by 6/30/2023 11:59:00 PM.

- **Discipline(s):**
  - **Life Health and Medical Sciences** (5 👁)