

Opportunity Title: Directed Energy Health Effects Directorate: Radiofrequency Health Effects - Postdoctoral Research Fellowship

Opportunity Reference Code: NAMRU-SA-2024-0011

Organization U.S. Department of Defense (DOD)

Reference Code NAMRU-SA-2024-0011

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

Description The Naval Medical Research Unit - San Antonio (NAMRU-SA) Directed Energy Health Effects Directorate (DEHE) is located in the Tri-Service Research Laboratory, Joint Base San Antonio-Fort Sam Houston, TX. NAMRU-SA's mission is to conduct gap driven directed energy, combat casualty care, and craniofacial health research to improve survival, operational readiness, and safety of Department of Defense personnel engaged in routine and expeditionary operations. NAMRU-SA scientists conduct basic, applied, and advanced technology research and development through prototype demonstration in an operational environment. The focus of the research in the DEHE Directorate is acute or chronic health effects because of exposure to the spectrum of non-ionizing electromagnetic energy from radiofrequencies through ultraviolet radiation. The Tri-Service Research Laboratory (TSRL) building consists of a 181,000 square foot facility with a 46,000 square foot vivarium that is fully accredited by the Association for Assessment and Accreditation of Laboratory Animal Care. The facility was built specifically for directed energy research and includes dedicated laser laboratories and shielded anechoic chambers for radiofrequency and microwave research. The surgical space available to NAMRU-SA, consisting of sterile and non-sterile operating rooms is 3,000 square feet with an additional 2,200 square feet of laboratory and procedure space.

What will I be doing?

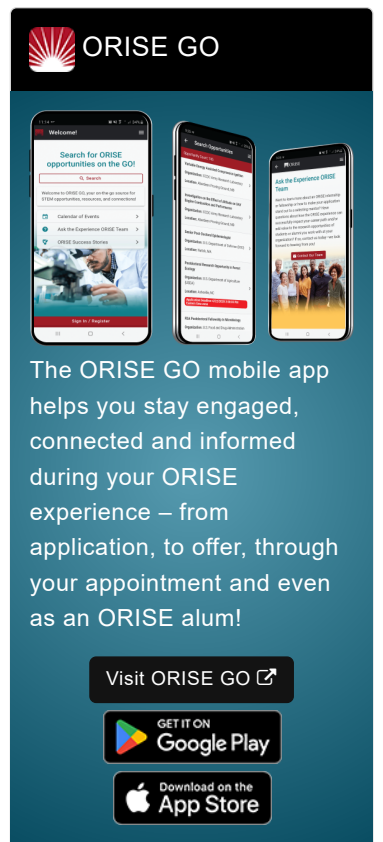
Under the guidance of a mentor, you will be a member of a research team responsible for performing data collection and analysis pertaining to health effects of radiofrequency (RF) and microwave systems relevant to Navy operations. You will participate in the design, specification, set-up, calibration, maintenance and operation of RF and microwave systems as well as the development of data collection and analysis procedures for these systems. You will collaborate closely with staff within the DEHE and Combat Casualty Care and Operational Medicine Directorates at NAMRU-SA.

Why should I apply?

Your involvement and contribution to ongoing research activities may include the following and further your knowledge in these areas:

- Determining requirements from approved experimental protocols and scheduling exposures of appropriate RF field power density, pulse duration, and pulse repetition rate.
- Executing complex laboratory tests of RF systems and independently executing a redesign and modification of in-service RF systems to meet experimental requirements.
- Reverse engineering RF field power density, pulse duration, and pulse


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repetition rate from potential RF exposure scenarios.

- Monitoring and maintaining real-time data collection capabilities.
- Developing and implementing new laboratory standard operating procedures.
- Testing new instrumentation and participating in experiment design.
- Preparing proposals, reports, presentations, or journal articles communicating research activities and findings.
- Participating as a collaborating scientist in project proposal development and design.

Where will I be located?

San Antonio, Texas

What is the anticipated start date?

NAMRU-SA 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 fellowships will be filled as qualified candidates are identified.

What is the appointment length?

This appointment is a 12-month, full time 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 provisions?

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

- Health Insurance Supplement (*Participants are eligible to purchase health insurance through ORISE*)
- Relocation Allowance
- Training and Travel Allowance

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 is a U.S Citizen who is currently pursuing or has obtained within the past 5 years of the application submission date a Doctoral degree in applied mathematics, physical science, or engineering. The qualified candidate also has a thorough knowledge of advanced physics principles of electromagnetic energy.

The highly qualified candidate will have coursework and laboratory experience related to radiofrequency and/or microwave.

- Familiarity with power and frequency meters, oscillators, directional couplers, RF power density monitors, RF transmission lines, primary power distribution hardware, and RF transmitters is preferred.
- Knowledge of specific absorption rate measurement including whole body and partial-body calorimetry, and of electronics in several areas including circuit design, power handling capability, and microwave theory and techniques is preferred.
- Data collection and analysis experience in GraphPad Prism, Microsoft Office (Excel), Matlab, National Instruments hardware and application software, signal processing and procedural or object oriented computer programming is preferred.
- Experience with modeling and simulation software such as COMSOL is preferred.
- A strong publication record, high scholarly activity such as scientific presentations, and grant writing skills are preferred.

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. 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 navy@orise.orau.gov. Please list the reference code of this opportunity NAMRU-SA-2024-00011 in the subject line of the email. Please understand that ORISE does not review

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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:** Doctoral Degree received within the last 60 months or currently pursuing.
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([12](#))
 - **Communications and Graphics Design** ([2](#))
 - **Computer, Information, and Data Sciences** ([17](#))
 - **Earth and Geosciences** ([21](#))
 - **Engineering** ([27](#))
 - **Environmental and Marine Sciences** ([14](#))
 - **Life Health and Medical Sciences** ([51](#))
 - **Mathematics and Statistics** ([11](#))
 - **Physics** ([16](#))
 - **Science & Engineering-related** ([2](#))
 - **Social and Behavioral Sciences** ([29](#))