

Opportunity Title: NPS: Underwater Acoustics and Swarm Defense - Fully Remote Computational Research Fellowship
Opportunity Reference Code: NPS-2025-0001

Organization U.S. Department of Defense (DOD)

Reference Code NPS-2025-0001

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

Application Deadline 4/30/2025 3:00:00 PM Eastern Time Zone

Description The mission of the Naval Postgraduate School provides relevant and advanced educational and research experience to commissioned officers of the Naval Service to increase their combat effectiveness and enhance the security of the United States. In support of this mission as well as to sustain academic excellence, NPS and the U.S. Department of the Navy (DoN) foster and encourage an academic program of relevant and meritorious naval research. NPS research supports the needs of the Navy and the U.S. Department of Defense while also building the intellectual capital of Naval Postgraduate School.

What will I be doing?

This research opportunity focuses on advancing **underwater acoustic sensing models** and **optimized control strategies for autonomous swarm defense**. Under the guidance of a mentor, you will engage in **computational modeling and simulation** efforts to improve the understanding of **underwater acoustic propagation** and its implications for **surveillance and defense applications**.

Why should I apply?

Through this appointment, you will gain **hands-on experience** with **computational physics applications** in **national security contexts**, strengthen your technical expertise in **algorithm development and high-performance computing**, and contribute to **cutting-edge research in undersea warfare and swarm defense strategies**.

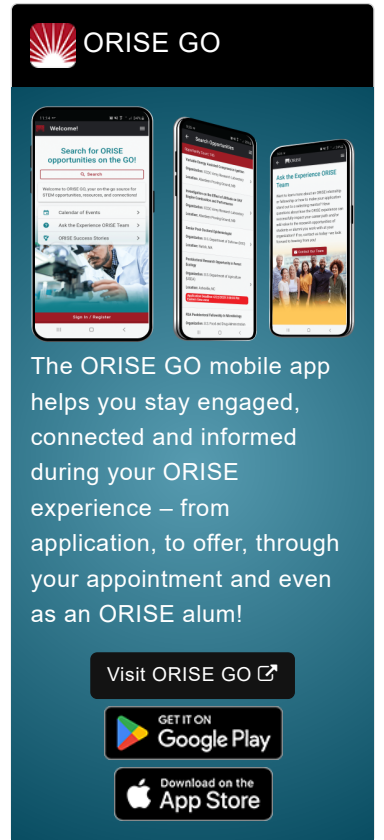
You will have the opportunity to further your education by:

- Exploring **high-performance computational techniques** for simulating fluid viscosity interactions in granular systems relevant to underwater acoustics.
- Developing and implementing **spectral decomposition algorithms** for real-time signal processing and noise reduction in acoustic signal analysis.
- Investigating **generative AI approaches** for optimizing **High-Power Microwave (HPM) counter-swarming methodologies**.
- Utilizing **Python, MATLAB, and C++** to develop **scalable and modular software architectures** that enhance computational efficiency in large-scale simulations.

Where will I be located?


Monterey, California or Remote. Can be negotiated between NPS and the applicant.


This project is **entirely computational** and can be effectively conducted **remotely**. You will have access to **high-performance computing (HPC) resources**, remote collaboration tools, and necessary datasets to perform simulations, analyze results, and refine computational models. Regular virtual meetings will facilitate coordination with research mentors, and secure cloud-based platforms will ensure seamless data sharing. This remote setup allows for **efficient workflow and continuous engagement with the research team**, eliminating the need for an in-person presence while maintaining productivity and collaboration.




ORISE GO

The ORISE GO mobile app helps you stay engaged, connected and informed during your ORISE experience – from application, to offer, through your appointment and even as an ORISE alum!

Visit ORISE GO 

GET IT ON
 Google Play

Download on the
 App Store

Opportunity Title: NPS: Underwater Acoustics and Swarm Defense - Fully

Remote Computational Research Fellowship

Opportunity Reference Code: NPS-2025-0001

What is the anticipated start date?

05/01/2025

What is the appointment length?

This appointment is a full-time, 12-month research appointment, anticipated to be extended annually for a total of 3 years. Appointments may be extended depending on funding availability, project assignment, program rules, and availability of the participant.

What are the appointment provisions?

You will receive a stipend to be determined by NPS. 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 NPS

For more information about the Naval Postgraduate School, please visit www.nps.edu.

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 Degree: **Bachelor's, Master's, or Ph.D.** degree received within the last 60 months (or 120 months if applicant is a veteran). Stipend and tasks will be adjusted to fit the qualifications.

The qualified applicant will have background in **physics, applied physics, electrical engineering, computer science, or a related STEM field**. A **Master's or Ph.D. degree** is preferred, though candidates with a **Bachelor's degree and relevant experience** will be considered.

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

- **Computational modeling and high-performance computing (HPC)**
- **Programming in Python, MATLAB, C++, or Julia**
- **Signal processing and acoustic sensing analysis**
- **Numerical simulations and algorithm development**
- **Machine learning for signal analytics**
- **Familiarity with Linux, Bash, Git, and parallel computing**

Opportunity Title: NPS: Underwater Acoustics and Swarm Defense - Fully Remote Computational Research Fellowship
Opportunity Reference Code: NPS-2025-0001

Additionally, applicants with experience in **underwater acoustics, swarm defense, or control theory** will be highly competitive. This opportunity offers hands-on experience in **cutting-edge research and defense applications**.

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(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 navy@orise.orau.gov. Please list the reference code of this opportunity [NPS-2025-0001] 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!

Point of Contact [Richard](#)

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 month(s).
 - **Discipline(s):**
 - **Mathematics and Statistics** (2 )
 - **Physics** (3 )
 - **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).