Opportunity Title: WRAIR - Research Fellowship in Bioinformatics, Microbial Genomics and Antibiotic Resistance
Opportunity Reference Code: MRDC-WRAIR-2025-0009

Organization U.S. Department of Defense (DOD)

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

Description The Department of Defense (DoD) is offering a Post Bachelor's, Post Master's and Post Doctoral internships at the Walter Reed Army Institute of Research (WRAIR) located in Silver Spring, Maryland. Within WRAIR, the Multidrug-Resistant Organism Repository and Surveillance Network (MRSN) is a unique entity that serves as the primary surveillance organization for antibiotic-resistant bacteria across the Military Health System (MHS). The laboratory receives and processes (routine ID, Antibiotic Susceptibility Testing and Whole Genome Sequencing) ~1,000 new isolates of ESKAPE+ pathogens every month from military hospitals across the world, and routinely collaborates with other U.S. Government agencies, allied nations, and academic research institutions. Our work directly impacts the DoD and MHS by:

- Providing real-time analysis, at the genomic scale, of the prevalence and mobility of “superbugs”, outbreak and antibiotic resistance genes.
- Conducting retrospective and prospective analyses on the emergence of antibiotic resistance and bacterial epidemiology across the entire enterprise.
- Assisting healthcare centers and infection control services to detect and appropriately respond to outbreaks using the most advanced and accurate molecular methods available

What will I be doing?

Under the guidance of a mentor and as the selected candidate, you will gain extensive experience in the following:

- Performing the comparative genomic analysis of hundreds of epidemiology-linked isolates (ongoing outbreaks in military hospitals) of MDR *Enterococcus* spp. *Staphylococcus* spp., *Klebsiella* spp., *Acinetobacter* spp., *Pseudomonas* spp., *Enterobacter* spp., and *Escherichia coli*.
- Using a variety of bioinformatic tools and software to analyze bacterial genomes for the purpose of outbreak investigations and local, national, and international bacterial epidemiology.
- Collaborating extensively with internal and external researchers on the molecular genetics of antibiotic-resistant bacteria.
- Analyzing and researching the global dissemination of antibiotic-resistant bacteria and participate in real-time surveillance for these organisms throughout the MHS.
- Gaining hands-on knowledge of both short-read and long-read DNA sequences using the Illumina Miseq and Nextseq systems and the Oxford Nanopore MinIon platform.
- Conducting analyses using the most state-of-the-art software and bioinformatics tools.
- Programming experience using Linux, Python, R.

Broadly speaking, you will have the opportunity to have advanced hands-on learning experiences that will greatly enhance your professional career goals.

Why should I apply?

Under the mentorship of WRAIR staff, you will be part of establishing a fundamental understanding of translational, military-relevant scientific research. You will be encouraged to expand

your network of scientific colleagues and seek collaborations within the U.S. Department of Defense, academia, and commercial companies. Furthermore, you will be challenged to develop new and innovative methods for analyzing bacterial genomes and will have the opportunity to make significant contributions to this emerging field while conducting research in one of the most comprehensive sequencing laboratories in the USA.

Where will I be located?

Silver Spring, Maryland

What is the anticipated start date?

The WRAIR 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.

Appointment Length

This appointment is a twelve-month, 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?

Participants will receive a stipend to be determined by WRAIR. Stipends are typically based on the 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 WRAIR

The Walter Reed Army Institute of Research (WRAIR) aims to conduct biomedical research that is responsive to Department of Defense and U.S. Army requirements and delivers lifesaving products including knowledge, technology and medical material that sustain the combat effectiveness of the warfighter. WRAIR provides unique research capabilities and innovative medical solutions to a range of Force Health Protection and Readiness challenges currently facing U.S. Service Members, along with threats anticipated during future operations. See www.wrair.army.mil for more information.

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 will have earned a bachelor's, master's or doctoral degree in an eligible discipline within the last 55 months.

Applicants should have some experience with the following:

- Next generation sequencing and analysis of bacterial genomes.
- Knowledge on the epidemiology of ESKAPE+ pathogens and their clinically relevant antimicrobial resistances is desirable.
- Executing and writing scripts in languages such as Python and common software packages such as R.

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 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.orau.gov. Please list the reference code of this opportunity [MRDC-WRAIR-2025-0009] 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!

Stipend $75,000.00 – $100,000.00 Yearly

Point of Contact Kimberly

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 55 month(s).
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (4 👁)
  - **Life Health and Medical Sciences** (9 👁)
  - **Mathematics and Statistics** (2 👁)
- **Age:** Must be 18 years of age

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