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Opportunity Title: Molecular Biology/Bioinformatics Public Health Fellow
Opportunity Reference Code: AFSAM-2020-0004

Organization	U.S. Department of Defense (DOD)
Reference Code	AFSAM-2020-0004
How to Apply	Components of the online application are as follows:

- Profile Information
- 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.
- 1 Recommendation is required.

Submitted documents must have all social security numbers, student identification numbers, and/or dates of birth removed (blanked out, blackened out, made illegible, etc.) prior to uploading into the application system.

If you have questions, send an email to **AIRFORCE@orise.orau.gov.** Please list the reference code of this opportunity in the subject line of the email.

All documents must be in English or include an official English.

Description

This research opportunity is with the Operational Support Branch's Medical Entomology Laboratory, Epidemiology Consult Service at the U.S. Air Force School of Aerospace Medicine (USAFSAM). USAFSAM is part of the 711th Human Performance Wing of the Air Force Research Laboratory (AFRL) at Wright-Patterson Air Force Base in Dayton, OH. The participant will support a one year, proof-of-principle project to explore the utility of environmental fecal sampling to update and refine local area public health risk assessments at Air Force (AF) installations. Data derived from animal feces deposited in the environment will inform health threat/hazard priorities for AF Public Health and Pest Management personnel.

Under the guidance of a mentor, the participant will:

- develop standard operating procedures (SOPs) for collecting and processing fecal samples
- collect fecal samples at one to three AF installations
- perform DNA and RNA extractions of fecal samples
- submit the nucleic acid extracts for genetic sequencing (WGA, NGS)
- analyze the sequence data to determine the host animal and identify biota present in feces (may include plants, insects, mammals, birds, reptiles, fungi, bacteria, parasites and viruses)

Findings will be reviewed with the mentor for public health importance in supporting local area risk assessments, and the participant may present the results to stakeholders. Under the guidance of a mentor, the participant will also develop and document a streamlined approach to these analyses. DNASTAR Lasergene is available for sequence analysis, though participants with Python, Perl and/or R experience are able to use those approaches as well. The participant will be encouraged to submit novel findings for presentation or publication.

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This opportunity has fieldwork, laboratory, and sequence analysis components. Local and out-of-state travel for fecal collections is anticipated, though all travel is dependent on guidance from the Centers for Disease Control and Prevention (CDC) and Department of Defense. Funding for conference attendance and training is also available, though this is dependent on the availability of opportunities with respect to COVID-19 restrictions. A dislocation allowance is included for the opportunity.

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.

Participant Benefits

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

Nature of Appointment

The participant will not enter into an employee/employer relationship with ORISE, ORAU, DOD, or any other office or agency. Instead, the participant will be affiliated with ORISE for the administration of the appointment through the ORISE appointment letter and Terms of Appointment.

Qualifications

MS in Bioinformatics, Molecular Biology or a closely related field with academic coursework and experience in genetic sequence analysis/bioinformatics. BS in Bioinformatics or Molecular Biology may be considered with 1-3 years of qualifying experience.

Desired experience includes analysis of sequence data from WGA/NGS, proficiency in programming languages (e.g. python, perl, R) and/or the use of software such as DNASTAR Lasergene or Geneious, and familiarity with and use of databases such as NCBI GenBank, EMBL-EBI ENA and/or DDBJ. Education and/or experience, including academic lab work, in methods such as nucleic acid extraction, sample prep for sequencing, and metabarcoding is desirable.

Eligibility Requirements

* **Citizenship:** U.S. Citizen Only
* **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 months or currently pursuing.
* **Discipline(s):**
  * **Environmental and Marine Sciences** (1 👁)
  * **Life Health and Medical Sciences** (45 👁)

- Mathematics and Statistics (1 👁)