Opportunity Title: Computational Biological Modeler
Opportunity Reference Code: AFRL711HPW-2019-0002

Organization U.S. Department of Defense (DOD)

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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 - Click here for detailed information about acceptable transcripts
- Recommendation

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 translation.

Description The Air Force Research Laboratory's Airman Systems Directorate is a key component of the 711th Human Performance Wing. The directorate is composed of a diverse group of scientists and engineers studying developing technologies specific to the human element of warfighting capability. We are leading the Air Force in its human-centered research, and we integrate biological and cognitive technologies to optimize and protect the Airman's capabilities to Fly, Fight, and Win in Air, Space, and Cyberspace. We are headquartered at Wright-Patterson Air Force Base, Dayton, Ohio.

Efforts will support 711 HPW research in mathematically modeling of molecular mechanisms within novel in vitro systems and using those models to extrapolate to in vivo data. More specifically modeling of: 1) signaling pathways associated with hyperoxia/hypoxia exposures and validating the findings and 2) signaling between the Gut-Brain axis, including microbiome and host interactions. Create mathematical models of biological process describing cellular, organ and whole body systems. Analyze and interpret experimental data. Select and use computational approaches, using computer science programs to create deeper data set understanding. Summarize results in written reports.

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.

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Participant Benefits

Participants will receive a stipend to be determined by AFRL. 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

Preferred Knowledge, Skills, and Abilities: Proficient in programming (e.g., R, Python, Java, C/C++). Knowledge of computational biology methods to simulate whole organ, whole body, cellular and molecular processes within silicon computer models. Deep knowledge of cellular biological processes and physiological systems, including neurophysiology. Preferred ability to demonstrate and use innovative solutions to computational/in silico bimolecular problems, and ability to design, develop, implement, computation/quantitative solutions for complex problems. Minimum Education/Training Requirements: MS or PhD in a computational biology or engineering/computer science

discipline.

Desired Appointment Start Date: March 18, 2019

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Master's Degree or Doctoral Degree received within the last 60 month(s).
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Communications and Graphics Design** (2 👁)
  - **Computer, Information, and Data Sciences** (16 👁)
  - **Earth and Geosciences** (21 👁)
  - **Engineering** (27 👁)
  - **Environmental and Marine Sciences** (14 👁)
  - **Life Health and Medical Sciences** (45 👁)
  - **Mathematics and Statistics** (10 👁)
  - **Other Non-Science & Engineering** (2 👁)
  - **Physics** (16 👁)
  - **Science & Engineering-related** (1 👁)
  - **Social and Behavioral Sciences** (27 👁)

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