Opportunity Title: Warfighter Performance Faculty
Opportunity Reference Code: MRMC-AARL-2019-0002

Organization	U.S. Department of Defense (DOD)
Reference Code	MRMC-AARL-2019-0002
How to Apply	Components of the online application are as follows:

- Profile Information
- Educational and Employment History
- Statement of Research (PDF) - This statement of research should describe previous and current efforts, future projects, relevance to field, relation to USAARL, etc. For more information, please visit: https://orise.orau.gov/sepreview/USAARL_ORISE_Research.pdf
- Curriculum Vitae (PDF)
- Salary Certification from your university

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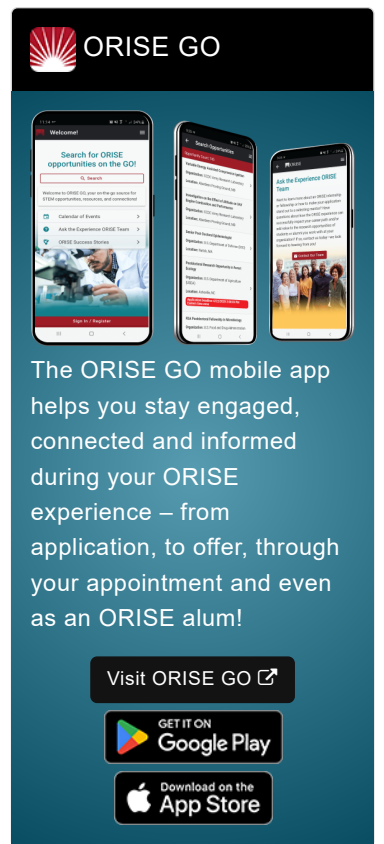
If you have questions, send an email to ARMY-MRMC@orise.orau.gov. Please list the reference code of this opportunity in the subject line of the email.

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

Description

The US Army Aeromedical Research Laboratory (USAARL), located at Fort Rucker, Alabama, is a nationally recognized laboratory for research into safety, survival, impact tolerance, sustainability and performance effectiveness of aviators and Soldiers. The USAARL's research focuses on blunt, blast and accelerative injury and protection; crew survival in military helicopters and combat vehicles; the en route care environment; human operator health and performance in complex systems and sensory performance, injury and protection. Current USAARL work for the Army's modernization priorities includes research in the areas of future vertical lift, the next generation combat vehicle and directed-energy weapons. The Laboratory's highly skilled workforce consists of rated aviators, medical professionals, doctoral- and masters-level researchers, and research technicians. For more information, please visit: https://www.usaarl.army.mil/

Participants will assist researchers with various aspects of approved research protocols and test plans to include, but not limited to, writing literature reviews, protocols, and test plans; conducting research protocols and test plans; collecting data; analyzing data; writing and publishing manuscripts; and preparing and presenting poster and oral presentations locally and at scientific meetings. Participants will learn about and use novel instrumentation and data acquisition techniques. Participants will share and communicate lessons learned and knowledge gained with research team colleagues and students. Participants will undergo a background investigation and must obtain a favorable clearance in order to participate.

Current research projects include: establishing the efficacy of pharmaceuticals to enhance cognition and functional performance on military relevant tasks; evaluating the efficacy of stimulants in healthy Soldiers to enhance cognition and performance on military-relevant tasks; establishing whether, and if so to what extent, fatigue and underload degrade performance in unmanned aerial systems (UAS) operators and validating objective psychophysiological measures of workload relative to degraded performance; evaluating whether application of transcranial direct current stimulation to healthy, well-rested Soldiers enhancing their basic cognitive performance and operational task performance; evaluating the application of tDCS during a sustained operational aviation task to determine if alertness and situational awareness can be maintained; a computer

modeling effort to develop risk assessment tools to evaluate aviator risks associated with operational stressors, aviation technologies, and physiological and/or psychological condition; a computer modeling effort to determine operational consequences of color vision deficiency-related errors in unmanned aerial system operators; measuring precise, visually limited behavior under laboratory controlled levels of glare; assessing pupillary behavior as an objective marker of the cognitive demands a task places on an operator; assessing the impact of varying auditory demands on cognitive performance of UAS operators; processing UAS imagery to reduce the cognitive load of the human operator and enhance parallel processing; developing an in-flight evaluation of speech using common terms in noise for Aircrew members whose hearing loss exceeds flight standards by recording and validating an aviation-specific speech intelligibility test; evaluating technologies that can reduce the risk of taking ear impressions for custom earplug or hearing aid ear pieces; assessing the effects of auditory workload, background noise and degraded hearing on cognitive processing load/mental effort while listening to multiple communication channels; determining the ability of Army Aviators to effectively monitor and attend to multiple auditory communication channels, identifying markers for natural auditory processing abilities that may be critical in operational military duties, and determining if an operator's ability to monitor multiple channels simultaneously can be enhanced using auditory training or signal modulation; characterizing acoustic energy produced by acoustic directed energy devices currently being deployed by Warfighters; testing various methods used to measure sound localization by listeners in free-field and virtual environments to evaluate a recently drafted standard method for sound localization in real and virtual environments.

Appointment Length

An ORISE appointment period can be a summer (10-12 weeks) or yearlong appointment. Faculty appointments are generally for 10-12 weeks during the summer, but appointments during the academic year are also available. 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 USAARL. Stipends are typically based on the participant's university salary. Participants may also be awarded a conference 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.

While participants will not enter into an employment relationship with DOD or any other agency, this opportunity will require a suitability investigation/background investigation. Any offer made is considered tentative pending favorable outcome of the investigation.

Qualifications Faculty in the following disciplines: Human Factors, Psychology, Physiology, Aerospace or Unmanned Systems, Computer Science-Machine Learning, Software Programming (with foundation in Engineering, Physics, or Applied Mathematics).

Full-time for approximately 12 weeks in a Semester; or Part-time throughout an Academic year

- Faculty members should submit a Statement of Research to ensure proper alignment with USAARL.

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- Faculty can participate as individuals, or once selected invite 1 to 2 students to apply to the Student Program.

<table>
<tr><td>**Eligibility Requirements**</td><td>

- **Citizenship:** U.S. Citizen Only
- **Degree:** Any degree .
- **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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