Opportunity Title: USAARL Human Factors Research Internship - Undergraduate
Opportunity Reference Code: MRDC-AARL-2024-0004

Organization	U.S. Department of Defense (DOD)
Reference Code	MRDC-AARL-2024-0004
How to Apply	Click on *Apply* at the bottom of the opportunity to start your application.
Description	The Department of Defense (DoD) is offering an undergraduate internship at the U.S. Army Aeromedical Research Laboratory (USAARL).

What will I be doing?

This project examines operator response to adaptive automation implementation. Most current and upcoming automation solutions for aviation are always-on, configured as part of mission planning, or manually enabled/disabled during flight. Modulating automation in response to operator state monitoring (OSM) will allow adaptive automation (AA) to address periods of high workload, losses of situational awareness, increased fatigue, stress, etc. If automation can be rapidly enabled when a pilot is compromised in an extreme event, it is likely to save lives and airframes. This project examines how AA should be implemented to best improve operator performance. Using theoretical modelling, systematic literature reviews, and human subjects study designs, operator's responses to simulated AA will be measured as a function of cognitive workload, fatigue, and situational awareness.
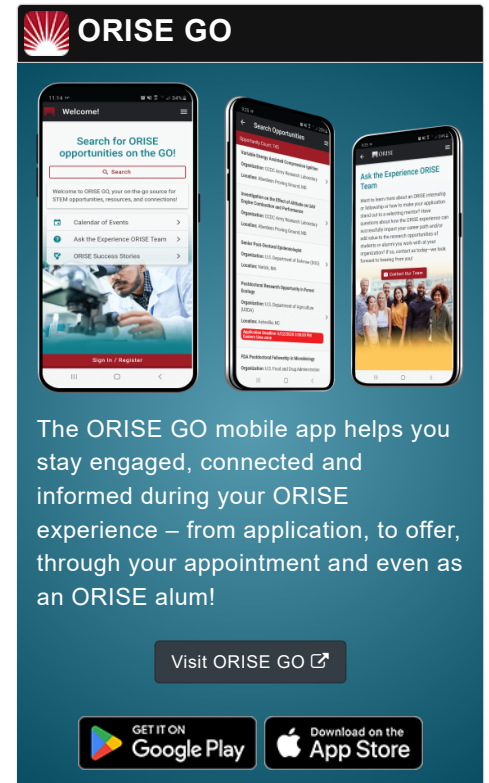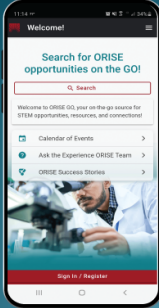
Why should I apply?

Under the guidance of a mentor, you will gain hands-on experience to complement your education and support your academic and professional goals. Along the way, you will engage in activities and research in several areas. These include, but are not limited to,

- Explore and understand the current state of the art in AA and the development of theoretical cognitive workload models.
- Assess operator cognitive workload, fatigue, and situational awareness using performance, subjective, and physiological metrics under dynamic task demand conditions by assisting with a systematic literature review.
- Develop human factors studies to examine performance outcomes influenced by dynamic adaptive automation conditions.
- Use the IMproved Performance Research INtegration Tool (IMPRINT) software to model cognitive workload demands during a complex task.

The selected candidate will undergo a background investigation and must obtain a favorable clearance in order to participate. An

interim clearance is required prior to the candidate starting his/her appointment.

Where will I be located?

Fort Novosel, Alabama

What is the anticipated start date?

USAARL 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.

What is the appointment length?

This appointment is a twelve-month, part-time 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.

What are the benefits?

You will receive a stipend to be determined by USAARL. Stipends are typically based on a participant's academic standing, discipline, experience, and research facility location.

Security Clearance

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.

About USAARL

The U.S. Army Aeromedical Research Laboratory (USAARL) located at Fort Novosel, 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. Visit https://www.usaarl.health.mil/ to learn

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more about USAARL.

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

The qualified candidate will be actively pursuing a Bachelor's degree in Engineering, Human Factors, Research Psychology, or Computer Science. Other comparable fields will be considered.

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

- Experience coding with MATLAB or Python.
- Experience conducting literature reviews.

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 - 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.
- 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. Recommender 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-AARL-2024-0004] 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!

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Currently pursuing a Bachelor's Degree.
- **Overall GPA:** 3.00
- **Academic Level(s):** Undergraduate Students.
- **Discipline(s):**
    - **Computer, Information, and Data Sciences** (12 👁)
    - **Engineering** (7 👁)
    - **Life Health and Medical Sciences** (2 👁)
    - **Mathematics and Statistics** (5 👁)
    - **Other Non-Science & Engineering** (1 👁)
    - **Physics** (2 👁)
    - **Social and Behavioral Sciences** (2 👁)
- **Age:** Must be 18 years of age

Affirmation

Qualified candidate must be 19 years of age at the start of the appointment.