

Opportunity Title: Research Engineer: Injury Biomechanics--Blunt Impact Injury Prevention

Opportunity Reference Code: MPMC-AARL-2021-0005

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 Graduate or Postgrad student with a Bachelor's or Master's degree internships at the U.S. Army Aeromedical Research Laboratory. (USAARL)

What will I be doing?

The participant will gain experience in injury and performance biomechanics by engaging in specialized research described in grants, proposals, and other legal agreements in accomplishment of USAARL's Injury Biomechanics and Protection Group mission.

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:

- Investigate injury biomechanics related to neurosensory response and injury by assisting a collaborative biomedical research team with ongoing injury biomechanics experiments and research
- Involves the use of medical imaging techniques and software tools to identify and characterize injury patterns
- Learn and apply motion analysis algorithms, equipment, and techniques to understand human kinematics and anatomical structures

Where will I be located?

Fort Rucker, Alabama

What is the anticipated start date?

The 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 will be filled as qualified candidates are identified.

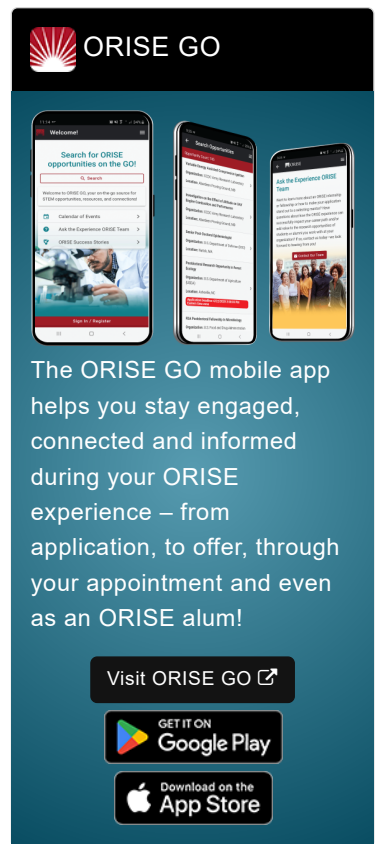
What is the appointment length?

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.

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. Other benefits may include the following:

- Health Insurance Supplement (*Participants are eligible to purchase health insurance through ORISE*)
- Relocation Allowance



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- Training and Travel Allowance

About U.S. Army Aeromedical Research Laboratory

The U.S. 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. Visit <https://www.usaarl.army.mil/> to learn 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 have a Bachelor's or Master's degree or will have completed by December 31, 2021. Degree must have been received within two years of the appointment start date.

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

- B.S. in related engineering (mechanical, aerospace, biomedical) field plus at least 4 years of experience in research, engineering or clinical setting
- M.S. in related engineering (mechanical, aerospace, biomedical) field plus at least 1 years of experience in research, engineering or clinical setting
- Knowledge of commonly-used concepts, practices, standards, and procedures within biomechanics and mathematics as demonstrated through a degree and coursework in a relevant STEM (Science, Technology, Engineering, and Mathematics) field from an accredited program.
- Military experience (active duty, guard, reserve) or environment familiarity is a plus
- Experience with mechanical test surrogates and/or cadaveric specimen in biomechanical research; experience working with military populations is a plus
- Ability to integrate complex medical and engineering methodologies and equipment, including but not limited to motion capture systems, medical and physiological stimulation and measurement systems (e.g., EMG, dynamometer), and engineering instrumentation (e.g., accelerometers, load cells, force plates, IMUs), software (e.g., MATLAB, SAS, Mimics), and data acquisition
- Mathematics and data analysis and acquisition experience, including scientific software packages

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and principles of data acquisition

- Good computer skills with advanced knowledge and experience in Microsoft Office Suite software
- Excellent communication and interpersonal skills
- Strong organizational skills and detail oriented

Experience in the military (active duty, guard, reserve) or experience working with military populations, experience that relates to knowledge of administering manual muscle tests, cervical range of motion tests, and use of electromyography, and/or experience with motion tracking, inertial measurement units (IMUs), OpenSim software are considered highly desirable.

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.](#)
- Two Recommendation

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

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- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Bachelor's Degree or Master's Degree received within the last 60 months or anticipated to be received by 12/31/2021 11:59:00 PM.
 - **Overall GPA:** 3.00
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([12](#))
 - **Communications and Graphics Design** ([2](#))
 - **Computer, Information, and Data Sciences** ([17](#))
 - **Earth and Geosciences** ([21](#))
 - **Engineering** ([27](#))
 - **Environmental and Marine Sciences** ([14](#))
 - **Life Health and Medical Sciences** ([46](#))
 - **Mathematics and Statistics** ([10](#))
 - **Physics** ([16](#))
 - **Science & Engineering-related** ([1](#))
 - **Social and Behavioral Sciences** ([28](#))
 - **Age:** Must be 18 years of age