

Opportunity Title: Movement Variability during the Execution of Discrete Physical Maneuvers Work package

Opportunity Reference Code: ARL-R-HRED-300037

Organization DEVCOM Army Research Laboratory

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Description About the Research

The CCDC Army Research Laboratory (ARL), Human Research and Engineering Directorate (HRED), Integrated Capability Enhancement Branch is looking for graduate-level researchers interested in dismounted Soldier and Soldier-system physical performance with an emphasis on advancing augmentation technologies.

Current research areas include:

- 1) The relationship between movement variability and physical performance during dynamic, Soldier tasks (obstacle negotiation, live-fire marksmanship, etc).
- 2) Mobility and lethality assessment of Soldier physical performance using laboratory and field measures (motion capture, IMU, etc).
- 3) Development of evidence-based physical augmentation strategies for urban operational tasks.

The anticipated impact of the research is to inform assessment and design of dismounted Soldier physical augmentation systems by using experimental approaches. The ideal candidate will have a Bachelor's or Master's degree in biomechanics, kinesiology, computer science, physics, physiology, or a related field. Experience with signal processing and analysis (Matlab, Labview, Visual3D, and/or R for Statistical Computing) of human data such as kinetic, kinematic, metabolic, or electromyography data is desired. Additional experience with data analytics, statistical learning, or model development is encouraged. A Master's degree is preferred, but a Bachelor's degree with strong, relevant research experience will be considered.

ARL Advisor: Andrew Tweedell

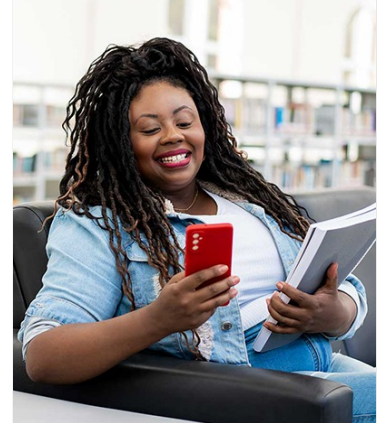
ARL Advisor Email: andrew.j.tweedell.civ@mail.mil

About HRED

The Human Research and Engineering Directorate (HRED) is ARL's principal center for research and development directed toward optimizing Soldier performance and human-autonomy teaming. Research within HRED focuses on how to improve Soldier performance in a dynamic and changing battlefield. As technology and autonomous systems become an increasingly integral part of Soldier teams, it is critical to determine how these systems can work with and be adapted to the Soldier and their capabilities. Autonomous systems must be able to be integrated into Soldier teams and move from tools to teammates. Critical to this is an understanding of how humans and human teams perform and change in dynamic environments and situations. HRED leverages human-robot interaction, human-informed machine learning, human cognition and adaptive teaming to improve human-autonomy teaming for future Army teams.



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About ARL-RAP

The [Army Research Laboratory Research Associateship Program](#) (ARL-RAP) is designed to significantly increase the involvement of creative and highly trained scientists and engineers from academia and industry in scientific and technical areas of interest and relevance to the Army. Scientists and Engineers at the CCDCArmy Research Laboratory (ARL) help shape and execute the Army's program for meeting the challenge of developing technologies that will support Army forces in meeting future operational needs by pursuing scientific research and technological developments in diverse fields such as: applied mathematics, atmospheric characterization, simulation and human modeling, digital/optical signal processing, nanotechnology, material science and technology, multifunctional technology, combustion processes, propulsion and flight physics, communication and networking, and computational and information sciences.

A complete application includes:

- **Curriculum Vitae or Resume**
- **Three References Forms**
 - An email with a link to the reference form will be available in Zintellect to the applicant upon completion of the on-line application. Please send this email to persons you have selected to complete a reference.
 - References should be from persons familiar with your educational and professional qualifications (include your thesis or dissertation advisor, if applicable)
- **Transcripts**
 - Transcript verifying receipt of degree must be submitted with the application. Student/unofficial copy is acceptable

If selected by an advisor the participant will also be required to write a **research proposal** to submit to the ARL-RAP review panel for :

- Research topic should relate to a specific opportunity at ARL (see [Research Areas](#))
- The objective of the research topic should be clear and have a defined outcome
- Explain the direction you plan to pursue
- Include expected period for completing the study
- Include a brief background such as preparation and motivation for the research
- References of published efforts may be used to improve the proposal

A link to upload the proposal will be provided to the applicant once the advisor has made their selection.

Questions about this opportunity? Please email ARLFellowship@orau.org

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| Eligibility | <ul style="list-style-type: none">• Citizenship: U.S. Citizen Only |
| Requirements | <ul style="list-style-type: none">• Degree: Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 months or currently pursuing.• Academic Level(s): Any academic level.• Discipline(s):<ul style="list-style-type: none">◦ Engineering (4 )◦ Life Health and Medical Sciences (6 ) |