

Opportunity Title: Next-generation Assured Positioning, Navigation, and Timing (PNT) and Radio Frequency (RF) Microelectromechanical Systems (MEMS) Research

Opportunity Reference Code: ARL-R-PEQS-20260615-F1

Organization DEVCOM Army Research Laboratory

Reference Code ARL-R-PEQS-20260615-F1

How to Apply Applications must be submitted in [Zintellect](#).

A complete application includes:

1. Curriculum Vitae or Resume

- List relevant coursework and lab experience as well as all papers, presentations, or publications you may have authored or co-authored. Include any reprints or abstracts if they are available.

2. 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)

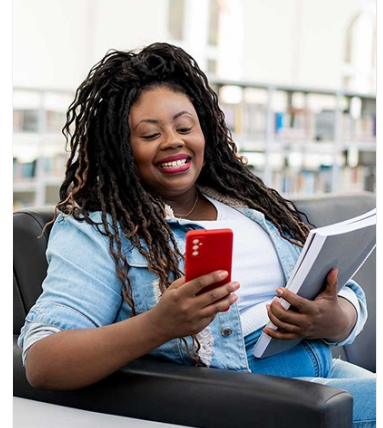
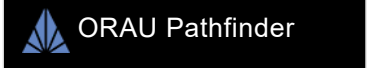
3. Transcripts

- Transcript verifying receipt of degree or current enrollment in an undergraduate or graduate program at an accredited university or technical institute. Student/unofficial copy is acceptable

4. Research Proposal

- Research topic should relate to a specific opportunity at ARL
- 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

Description This opportunity is available at the U.S. Army DEVCOM Army Research Laboratory located at Adelphi, MD. The Advanced Photonics, Electronics & Quantum Sciences (APEQS) is seeking candidates with a strong interest in future electronics technologies who have recently studied or are currently studying engineering or scientific disciplines. This research seeks to advance next-generation Assured Positioning, Navigation, and Timing (PNT) and Radio Frequency (RF) systems and capabilities through the research, development, and analysis of specialized Microelectromechanical Systems (MEMS) technologies. The effort focuses on developing cutting-edge MEMS gyroscopes, accelerometers, and novel supporting electronics; alongside advanced MEMS RF resonators, filters, tunable components, and ultra-sensitive sensors. Ultimately, this research will establish the critical building blocks necessary for creating compact, power-efficient, and high-performance electronic systems. These multi-disciplinary problems require



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expertise in materials, modeling, design, semiconductor & MEMS fabrication, characterization, and advanced electronics.

Eligibility:

- Experience with lab work in either a work or school setting
- Good written and oral communication skills
- Personal initiative

- US citizen

ARL Advisor: Jeffrey Pulskamp

ARL Advisor Email: jeffrey.s.pulskamp.civ@army.mil

About Advanced Photonics, Electronics & Quantum Sciences (APEQS)

Materials (and related manufacturing methods) and devices intended for achieving photonic, electronic, and quantum-based effects.

About DEVCOM Army Research Laboratory (ARL) Research Associateship Program (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 CCDC Army 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.

About DEVCOM Army Research Directorate (ARD)

ARL's Army Research Directorate (ARD) focuses on exploiting concept development, discovery, technology development, and transition of the most promising disruptive science and technology to deliver to the Army fundamentally advantageous science-based capabilities through laboratory's 11 research competencies. This intramural research directorate also manages the laboratory's essential research programs, which are flagship research efforts focused on delivering defined outcomes.

Questions about this opportunity? Please

email ARLFellowship@orau.org

Qualifications The ideal candidate for this MEMS research internship should be an undergraduate pursuing a degree in Electrical Engineering, Mechanical

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Engineering, Materials Science, or Applied Physics, supported by foundational coursework in calculus, university physics, circuit theory, and mechanics. While comprehensive training will be provided, highly favorable applicants will have completed advanced coursework in microelectronics or device physics and possess technical proficiency in 3D CAD modeling, FEA simulation (such as COMSOL or ANSYS), and data analysis using Python or MATLAB. Furthermore, prior hands-on experience with standard electrical characterization equipment, exposure to cleanroom microfabrication processes or materials metrology (e.g., SEM, AFM), and a strong capability for rigorous laboratory documentation and technical communication will strongly distinguish a candidate.

Point of Contact [ARL-RAP](#)

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| Eligibility Requirements | <ul style="list-style-type: none">• Citizenship: U.S. Citizen Only• Degree: Bachelor's Degree or Master's Degree.• Minimum Overall GPA: 3.50• Academic Level(s): Bachelor's Degree (Journeyman Fellow) or Master's Degree (Journeyman Fellow).• Discipline(s):<ul style="list-style-type: none">◦ Chemistry and Materials Sciences (12 )◦ Communications and Graphics Design (2 )◦ Computer, Information, and Data Sciences (17 )◦ Earth and Geosciences (21 )◦ Engineering (29 )◦ Environmental and Marine Sciences (14 )◦ Life Health and Medical Sciences (51 )◦ Mathematics and Statistics (11 )◦ Physics (16 )◦ Science & Engineering-related (2 )◦ Social and Behavioral Sciences (29 ) |
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