**Opportunity Title:** Development of a Unmanned Aerial Vehicle (UAV) Synthetic Aperture Radar (SAR)
**Opportunity Reference Code:** ARL-C-SEDD-300080-EMSS

**Organization** DEVCOM Army Research Laboratory

**Reference Code** ARL-C-SEDD-300080-EMSS

**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** **About the Research**

The research entails utilizing the candidate's knowledge-base on synthetic aperture radar (SAR) and associated algorithms. The Army is interested in developing an unmanned aerial vehicle (UAV)-mounted radar system to generate sub-terrain image products for explosive hazard detection. The candidate will implement simulations of SAR for various geometries and flight paths. Furthermore, this research will also require RF hardware design of a prototype, which will ultimately be used to verify simulated performance characteristics.

**Keywords**: synthetic aperture radar, ultra-wideband radar, ground-penetrating radar

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**About 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.

**About Army Research Laboratory Research Associateship Program (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 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 Electromagnetic Spectrum Sciences (EMSS)**
Novel approaches to sensing and operating across the entire electromagnetic (EM) environment; counter-sensing across the EM spectrum; protection from EM effects; emerging concepts for RF, radars, and electronic warfare (EW).

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

**Point of Contact** ARL

**Eligibility Requirements**

- **Citizenship:** U.S. Citizen Only
- **Degree:** Associate's Degree, Bachelor's Degree, Master's Degree, or Doctoral Degree.
- **Academic Level(s):** Any academic level.
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (16 👁)
  - **Engineering** (27 👁)