

**Opportunity Title:** Biotechnology, Material Science and Brain Health

**Opportunity Reference Code:** ARL-R-USMA-CBSE-400052

**Organization** DEVCOM Army Research Laboratory

**Reference Code** ARL-R-USMA-CBSE-400052

**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**

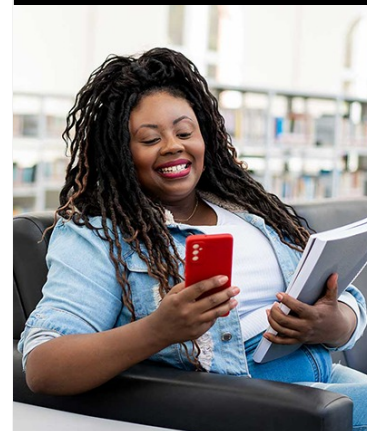
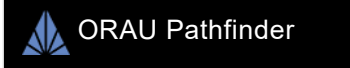
- Research topic should relate to a specific opportunity at ARL
- The objective of the research topic should be clear and have a defined outcome
- Explain the direction you plan to pursue
- Include expected period for completing the study
- Include a brief background such as preparation and motivation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

**Description About the Research**

This research involves conducting fundamental and applied research in the fields of Chemistry, Biology, and/or Chemical Engineering. The fellowship position is based at the United States Military Academy's Center for Molecular Science in West Point, New York.

The following areas have the most opportunities (this is not an exhaustive list and is provided to convey scope):

- Biotechnology
- Materials science
- Human performance
- Human physiology
- Traumatic brain injury
- Protein misfolding and aggregation
- Neuroscience



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- Chemical synthesis
- Batteries
- Energetics
- Propellants
- Biomarkers
- AI/ML for biology
- Molecular modeling
- Exergy
- Viral research
- Threat detection and prevention
- Reaction optimization
- PFAS degradation
- Veterinarian science
- Decontamination
- General biology
- General chemistry
- General chemical engineering

**Keywords:** biotechnology, artificial intelligence, human performance, neuroscience, diagnostics, therapeutics, physiology, batteries, material science, molecular dynamics, Modeling, Thermal Degradation, Fluoropolymers, Chemical Engineering

#### **Research Advisors:**

*Lucas Fallot, Director, Center for Molecular Science*

*Associate Professor, Chemical and Biological Science and Engineering*

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*Dr. Ryan Limbocker*

*Associate Professor, Chemical and Biological Science and Engineering*

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*Dr. Enoch Nagelli*

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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 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,

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multifunctional technology, combustion processes, propulsion and flight physics, communication and networking, and computational and information sciences.

### **About USMA and CMS**







The United States Military Academy's mission is to educate, train, and inspire the Corps of Cadets so that each graduate is a commissioned leader of character, committed to the values of Duty, Honor, Country. USMA is the oldest engineering school in the nation and is situated 55 miles north of New York City in the picturesque Hudson Valley. USMA's rigorous programs, quality faculty, and student-to-faculty ratio of 12:1 attract a student body of 4,400 of the nation's best.

The Center for Molecular Science (CMS) is the Academy's premier resource for fundamental and applied chemistry, biology, and chemical engineering research. CMS interfaces with the broader Department of Defense (DoD) agencies.

ORAU Fellows at USMA-CMS conduct fundamental and applied research and engineering on projects that are aligned with the Army's and DoD's priorities while contributing to the broader scientific community.

**Questions about this opportunity?** Please email [ARLFellowship@orau.org](mailto:ARLFellowship@orau.org)

### **Point of Contact** [ARL-RAP](#)

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
  - **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree.
  - **Academic Level(s):** Bachelor's Degree (Journeyman Fellow), Master's Degree (Journeyman Fellow), Master's Degree 7+ years (Senior Fellow), Doctoral Degree (Postdoctoral Fellow), or Doctoral Degree 5+ years (Senior Fellow).
  - **Discipline(s):**
    - **Chemistry and Materials Sciences** ([12](#) )
    - **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](#) )