

**Opportunity Title:** Nonlinear Optical Cavities for Quantum Networks

**Opportunity Reference Code:** ARL-R-CISD-300134

**Organization** DEVCOM Army Research Laboratory

**Reference Code** ARL-R-CISD-300134

**Description About the Research**

A postdoctoral fellowship is open for an experimental physicist within the Computational and Information Science Directorate (Network Science Division) of the U.S. Army Research Laboratory. Suitable candidates should have a PhD in physics or engineering with a background in quantum optics, integrated photonics, nonlinear optics, or optical cavities.

The fellow will lead a research project focused on the design, characterization, and experimental demonstration of nonlinear optical cavities suitable for controlling and manipulating light in quantum networks. Programming experience in MATLAB or a similar language is mandatory. Prior experience with optical pulse shaping, photonic integrated circuits, photonic crystal cavities, or sources/detectors for quantum light will be considered favorably.

The above project will be conducted in close collaboration with MIT, and offers plentiful opportunities for collaboration with other leading universities and government agencies. The primary research location will be the Adelphi Laboratory Center in Adelphi, MD. The fellowship can be renewed yearly up to a total duration of 3 years.

You must be a U.S. Citizen to be considered for this project.

Interested candidates should email inquiries and a CV to Dr. Dashiell Vitullo <[Dashiell.L.Vitullo.civ@army.mil](mailto:Dashiell.L.Vitullo.civ@army.mil)>.

*ARL Advisor: Dashiell Vitullo*


*ARL Advisor Email: [Dashiell.L.Vitullo.civ@army.mil](mailto:Dashiell.L.Vitullo.civ@army.mil)*


**About CISD**

The [Computational and Information Sciences Directorate \(CISD\)](#) conducts research in a variety of disciplines relevant to achieving and implementing the so-called digital battlefield. Problems address the sensing, distribution, analysis, and display of information in the modern battle space. CISD research focuses on four major areas: communications, atmospheric modeling, battlefield visualization, and computing

**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


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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.

**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](mailto:ARLFellowship@orau.org).



**Eligibility  
Requirements**

- **Citizenship:** U.S. Citizen Only
- **Degree:** Master's Degree or Doctoral Degree received within the last 60 month(s).

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- **Academic Level(s):** Any academic level.
- **Discipline(s):**
  - **Engineering** (27 )
  - **Physics** (16 )
- **Age:** Must be 18 years of age