**Organization Description**

The United States Military Academy (USMA) at West Point NY is the premier leader development school in the nation with a mission to educate, train and inspire future Army leaders. Situated at USMA is the Photonics Research Center, which has a threefold mission to educate both cadets and officers, conduct basic and applied research, and support the Army and DoD in the area of lasers and photonics. In November 2000 the National Research Council approved the Center as a postdoctoral associate research site. The Center is staffed by faculty from varied disciplines working on such projects as high energy lasers, spectroscopy, and optical communications.

The Center recognizes that postdoctoral research fellows are trainees working in an apprenticeship mode in preparation for a career as scientific professionals. The mentoring provided to the postdoctoral fellow by the faculty is critical to the fellow’s career development and advancement.

**Project Description**

Recent advances in laser technology enabled the development of cheap yet powerful lasers accessible to the public. The modern lasers are capable of propagating across significant distances with minimal attenuation and loss in power. The misused publicly accessible lasers pose challenges and hazards to the public safety since they can dazzle electro-optical systems and damage the human eyes. Therefore, it is of a great interest to investigate a broad series of laser effects on various electro-optical systems across a broad range of parameters. The goal of the research project is to elucidate safe operating regimes for electro-optical systems and eyes under various laser illuminations and atmospheric backgrounds.

**Required Skills**

The Postdoctoral Research Fellow should have strong theoretical and technical background of current laboratory methods and techniques in the areas photon propagation, distributions, and statistics. The Fellow needs to have a solid understanding of laser and electro-optical systems. They should have strong communication skills and be current on industry and academic trends. The position requires experience in the following areas:

* Laser and electro-optical systems.
* Statistical analysis of photon distributions.
* Light propagation across various media to include atmosphere, optics, and focal plane arrays.
* Exciton and signal generation in electro-optical systems.
* Signal measurement and extraction in the opto-electrical systems.

**Responsibilities of Postdoctoral Fellow**

* Assume primary responsibility for the development and execution of his or her research and career.
* Actively seek career and research advice, both from the faculty supervisor and from other faculty members as appropriate.
* Execute research required by the faculty supervisor to a high moral and ethical standard and in accordance with all institutional and federal regulations.
* Actively engage in postdoc career development and annual review process.
* Participate in professional conferences and presentations.
* Work in a collegial and collaborative manner with the faculty supervisor and other co-workers.
* Plans and execute daily experimental activities relating to research projects.
* Uses creative and novel concepts to contribute to the development of the lab technology base and to achieve scientific objectives.
* Adhere to experimental, and safety protocols required for product development and lab services for clients;
* Maintain and compile experimental data for distribution and publications.
* Presents research findings at internal meetings, reviews, and conferences.
* Contribute to scientific literature as well as research proposals and grant applications in collaboration with USMA, CERDEC, and RDECOM staff.
* Maintain accurate records of research findings, along with analysis of results.
* Maintains lab in clean and high-functioning condition.

**Qualifications**

Ph.D. in Electrical Engineering, Physics or related field is required. Proven track record of laboratory research, leadership, academics, and current scientific techniques are a must.