

NOTICE OF VACANCY
Laser Optical Engineer
Dynamic Compression Sector at the
Advanced Photon Source, Lemont, Illinois



WASHINGTON STATE UNIVERSITY
Institute for Shock Physics

Position Description

We are seeking to hire a strongly self-motivated, talented Laser Optical Engineer to support the research activities at a first-of-a-kind experimental user facility: The Dynamic Compression Sector (DCS) at the Advanced Photon Source (APS), Argonne National Laboratory. The successful candidate will perform hands-on work and operate/maintain the 100J laser system to ensure optimal performance and development of new capabilities.

The DCS research activities involve state-of-the-art, dynamic compression experiments that utilize x-ray and optical measurements on nanosecond time-scales to understand the response of materials under extreme thermodynamic conditions.



Advanced Photon Source

This position is a full-time, 12-month (renewable year after year), Administrative/Professional position. The salary range is \$5,667-\$7,304 per month, commensurate with the candidate's experience and qualifications. Other benefits include health/dental insurance, vacation/sick leave, and retirement plans.

Representative Responsibilities

1. Independent operation of the 100-Joule laser for laser-shock research activities, including quantifying and archiving the laser performance for each shot.
2. Contribute to the design and conduct of laser-shock experiments, and work with scientific users.
3. Working with the laser team, document and maintain safe operating procedures related to the laser and its control areas at the DCS.
4. Participate in the design, development, and use of optical equipment and systems for laser-interferometry measurements and other laser-based diagnostics, including data reduction and analysis.
5. Work with the DCS users to prepare for experiments in advance. This includes providing guidelines for experimental design, personnel safety, and equipment operating procedures.
6. Contribute effectively to all aspects of research projects including assistance to DCS users; optimal and safe operations of the experimental facilities; ensure availability of experimental components, equipment, and supplies; enhancement of experimental capabilities; and working effectively in a team setting to advance the DCS research mission.

Required Qualifications

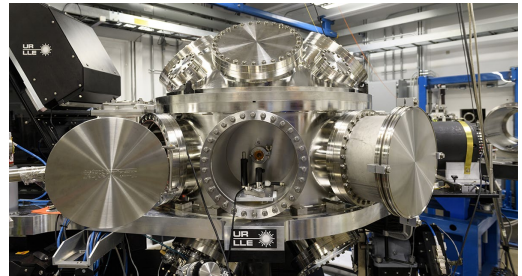
The required professional qualifications and personal attributes are:

- A Master's degree in Physics, Optical Engineering, or a related field with a strong experimental background in lasers and optics. Any combination of relevant education and experience may be substituted for the educational requirement on a year-for-year basis.

- Demonstrated technical expertise and strong hands-on ability with the design, fabrication, and optimization of nonlinear optical systems, instruments, and associated diagnostic equipment.
- Strong interest in being involved in all aspects of DCS user experiments.
- Considerable skill and knowledge of hardware and software required to support user experiments on a large-scale laser.
- Good computer skills, including experience with programs for instrument control and analysis, such as LabView and MATLAB. Experience with optical design software is useful but not required (e.g., Zemax).
- Excellent communication skills, both oral and written, necessary to interact with team members and users to effectively present research objectives and documentation.
- Ability to effectively work independently and in a team environment, as needed.
- Personal attributes should include critical thinking, good judgment, attention to detail, positive attitude, and accountability.
- Must be able to obtain a badge at U.S. Department of Energy National Laboratories to gain access to restricted areas.

Preferred Qualifications

- Work experience at a synchrotron.
- Experience in research related to dynamic compression experiments.



APPLICATIONS

Applicants should submit the following information to dcs.admin@wsu.edu. The application package should include:

- Cover letter to the attention of Dr. Paulo Rigg explicitly addressing the qualifications for this position and date of availability.
- Detailed curriculum vitae
- Contact information for three professional references (name, email, and phone number)

Due to the large volume of applications, we will contact only those selected for next steps.

Additional information about the Institute for Shock Physics and Washington State University follows:

The Institute has ongoing research activities at the following three locations:

- [Institute for Shock Physics](#) - Pullman, WA: Combining research innovations and rigorous education.
- [Dynamic Compression Sector](#) - Lemont, IL: Frontier of dynamic compression science (first-of-a-kind worldwide user facility) located at the Advanced Photon Source, Argonne National Laboratory.
- [Applied Sciences Laboratory](#) - Spokane, WA: Transforming science into practical solutions.

Washington State University

Washington State University, one of the two research universities in the state, was founded in 1890 as the state's land-grant institution and is located in Pullman with regional campuses in Spokane, Vancouver, the Tri-Cities, and Everett. Due to its strong emphasis on excellence in research and education, the Carnegie Classification™ has designated WSU as R1/Tier 1: Doctoral University – Highest Research Activity. Current enrollment is approximately 31,600 undergraduate, graduate, and professional students. The University offers 98 majors, 86 minors, and 100+ in-major specializations for undergraduates, 78 master's degree programs, 65 doctoral degree programs, and 3 professional degree programs. Academically, the University is organized into 11 colleges (Agriculture, Human, and Natural Resource Sciences; Arts and Sciences; Business; Communication; Education; Engineering and Architecture; Honors; Medicine; Nursing; Pharmacy and Pharmaceutical Sciences; and Veterinary Medicine) and a Graduate School. For more information, please visit wsu.edu.



WASHINGTON STATE UNIVERSITY IS AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EDUCATOR AND EMPLOYER. Members of ethnic minorities, women, special disabled veterans, veterans of the Vietnam-era, recently separated veterans, and other protected veteran, persons of disability and/or persons age 40 and over are encouraged to apply.

WSU employs only U.S. citizens and lawfully authorized non-U.S. citizens. All new employees must show employment eligibility verification as required by the U.S. Citizenship and Immigration Services.

WSU is committed to providing access and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation in the application process, contact Human Resource Services: 509-335-4521 (v), Washington State TDD Relay Service: Voice Callers: 1-800-833-6384; TDD Callers: 1-800-833-6388, 509-335-1259(f), or hrs@wsu.edu.