NOTICE OF VACANCY
Research Engineer for the
Dynamic Compression Sector at the
Advanced Photon Source, Argonne, Illinois

Description of Position
Washington State University (WSU) is seeking to hire a self-motivated Research Engineer (Administrative/Professional Staff) to support the research activities at a first-of-its-kind experimental user facility: The Dynamic Compression Sector (DCS) at the Advanced Photon Source (APS), Argonne National Laboratory. The DCS constitutes a new paradigm for understanding the dynamic compression and deformation response of materials under extreme conditions. Real-time, atomistic-scale investigations of condensed matter phenomena can be undertaken in single event experiments through time-resolved, in-situ measurements utilizing the tunable, high energy x-ray capabilities at the APS.

The employer for this position is WSU and the location is the Advanced Photon Source, Argonne National Laboratory in Lemont, Illinois.

We are looking to hire an experimentalist who enjoys hands-on work and problem solving in a fast-paced, research environment. 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 at high dynamic stresses. This position is responsible for implementing and maintaining equipment controls (both hardware and software), as well as instrumentation interfaces for data acquisition and storage.

Responsibilities for this position include, but are not limited to:

1. Participate in the development and implementation of instrumentation and electronics for a broad range of experimental goals. This encompasses RF amplifiers, precision timing circuits, and motor controllers.
2. Develop and deploy software such as EPICS (Experimental Physics and Industrial Control System) software in support of user operations at DCS.
3. Conduct maintenance and upgrades for: beamline and equipment controls, custom instrumentation, data acquisition hardware and software, data storage and back-ups, network hardware and software, and Linux/Windows workstations.
4. Contribute to DCS User Facility operations by working effectively in a team setting assisting users and operating equipment.
Qualifications

Only applicants who are currently in the U.S. and meet the following minimum qualifications will be considered for the position:

- A Bachelor’s Degree in Electrical Engineering, Physics, or a related field with experience in a scientific or engineering environment.
- Experience troubleshooting, designing, and prototyping analog and digital circuits. This includes schematic entry, PCB layout, and assembly.
- Demonstrated ability and working knowledge of programming and scripting languages, such as Python, C++, MATLAB, Linux shell scripting, or LabVIEW.
- Experience documenting, troubleshooting, and being responsible for complex systems.
- Experience developing best practices for novel techniques/methods and conducting literature reviews.
- Excellent communication skills, both oral and written.
- Personal attributes should include critical thinking, accountability, attention to detail, ability to manage multiple projects with shifting timelines, and ability to work effectively in a team with diverse specializations.
- Must be able to obtain a badge at U.S. Department of Energy National Laboratories to gain access to restricted areas.

Preferred Qualifications

- M.S. Degree in the physical sciences or engineering.
- Working knowledge of EPICS software
- Working knowledge of FPGA programming
- Working knowledge of interlock systems
- Working knowledge of Optics / Electro-Optics / Photodiodes
- Experience working in a research facility
- Demonstrated experience in administering Windows servers, as well as Linux and Windows workstations

The salary structure is both attractive and nationally competitive. Other benefits include health/dental insurance, vacation/sick leave, and retirement plans.

Applications

To apply, please submit application materials via the WSU Human Resource Services website: https://www.wsujobs.com/postings/41668. Applicants should submit a letter of application explicitly addressing the qualifications for this position and date of availability;
detailed resume; and the names, email, and addresses of three professional references. Questions may be submitted to Sheila Heyns, Senior Manager, Institute for Shock Physics, 509-335-1861, ispjobs@wsu.edu.

To ensure consideration, please specify the position (DCS Research Engineer) for which you are applying. We will begin reviewing applications immediately and will continue to do so until the position is filled. Please contact Ms. Sheila Heyns with inquiries regarding this position (ispjobs@wsu.edu, 509-335-5345).

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 FOR SHOCK PHYSICS**
The Institute has ongoing research activities at the following three locations:

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

**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 and the Tri-Cities. Due to its strong emphasis on excellence in research and education, the Carnegie Classification™ has designated WSU as R1: Doctoral University – Highest Research Activity. Current enrollment is approximately 30,614 undergraduate, graduate, and professional students. The University offers more than 200 fields of study, with 95 majors for undergraduates, 79 master’s degree programs, 63 doctoral degree programs, and 4 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 Veterinary Medicine) and a Graduate School. As noted earlier, the Colleges of Medicine, Nursing, and Pharmacy are located on the WSU Health Sciences Spokane campus. For more information, please visit [www.wsu.edu](http://www.wsu.edu).

*WSU is an EO/AA Educator and Employer.*