THE UNIVERSITY OF WYOMING
JOB DESCRIPTION

This is a description of a staff position at the University of Wyoming not a job opening announcement. Look for current job openings at the following link: UW Human Resources.

The following statements are intended to describe the general nature and level of work being performed. They are not intended to be construed as an exhaustive list of all responsibilities, duties and skills required of personnel so classified.

Title: HPC & RESEARCH SOFTWARE MANAGER

Reports To: Designated Supervisor

UW Job Code: 3807

UW Job Family: 38 - Computer Professional

SOC Code: 11-3021

FLSA: Exempt

Pay Grade: 27

Date: 3-1-19 (revised 5-1-22)

JOB PURPOSE:

Under limited supervision, perform, analyze, and coordinate software installations for the University's High-Performance Computing clusters and systems. Assist research users with code design, optimization, execution, and adherence to general use policies for UW's HPC systems. Develop, maintain, and administer training courses for code optimization on HPC clusters. Assist HPC team with server hardware and operating system operations.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Cluster Research Software Management – research, install, develop, and maintain scientific computational tools for use by researchers. This includes infrastructure-related tools, schedulers, and package managers.
- Parallel Code Optimization – assist researcher's computational needs for use on UW's condo cluster and/or nationally available resources. Includes a wide variety of programming languages, and MPI/PARALLEL use cases. Focus on making code as performant as possible.
- Work with HPC team, assist with managing & optimizing cluster HPC Job Scheduler– manage Teton's job scheduler (SLURM) and optimize for maximum cluster efficiency. Maintain database, all scheduler plugins, historic usage metrics, and plan for future expansions of hardware and software.
- Assist in management of supercomputer cluster infrastructure software –includes configuration, programming, and implementation of job scheduling, provision, operating system, databases, and reporting suites of software.
- Documentation & Training Development – work with end-user support staff to ensure end-users can use cluster software appropriately. Keep extensive documentation regarding cluster infrastructure, software, & use with User Support team, develop training curriculum for ARCC services.

SUPPLEMENTAL FUNCTIONS:

- Linux Systems Administration – manage images of computer nodes within supercomputer cluster, including installed software, connectivity to storage environment, uptime, provisioning, and availability.
- Reporting framework – develop metric tracking system to display performance and usage of ARCC systems. Includes developing automated strategies for gathering metrics, storing them in a database, and presenting them via website.

COMPETENCIES:

- Analysis/Problem Identification
- Collaboration
- Individual Leadership
- Quality Orientation
- Strategic Planning
- Technical/Professional Knowledge
- Work Prioritization & Management

MINIMUM QUALIFICATIONS:

Education: **Bachelor's degree in Business Management, Management Information Systems, Computer Science or related field**

Experience: **5 years work-related experience**

Required licensure, certification, registration or other requirements: **None**

KNOWLEDGE, SKILLS, AND ABILITIES:

Knowledge of:

- Computer science principles, theories, and concepts of computer programming.
- Project management.
- Management information systems/processes/procedures.
- Computer programming languages in use in the area.
- Computer programming software and hardware applications.
- Computer systems operation and network administration.
- Data processing equipment and programming tools.
- Design technology and techniques to create, enhance, and maintain computer system design.
- Operating systems and network/systems protocol.
- Maintenance and enhancements of computer programs.
- Current technology advances.

Skills and Abilities to:

- Develop and work within project budget, goals and objectives.
- Monitor project work.
- Maintain effective supervisory relationships.
- Manage projects to meet multiple and conflicting project timelines.
- Determine labor/equipment costs on projects.
- Provide project leadership.
- Mentor and coach.
- Effective oral and written communication skills.
- Translate technical information into user-friendly program documentation.
- Make effective decisions impacting projects.
- Interpret processes, flow charts and schematics.
- Test new data processing equipment and computer system applications and recommend purchases and standards.

WORKING CONDITIONS:

No major sources of discomfort, standard office environment.

Authorized by Classification/Compensation, Human Resources

Employees may be requested to perform job-related tasks other than those specifically presented in this description. Participating in the University's hazardous waste minimization program is part of the job of each employee who uses (or may come in contact with) hazardous materials. Fair Labor Standards Act (exempt/non-exempt) is designated by position. University of Wyoming actively supports Americans with Disabilities Act and will consider reasonable accommodations.