

A Meaningful Internship: Come join the best and brightest minds in the world at one of the most innovative and creative multidisciplinary research institutions engaged in strategic science on behalf of U.S. national security. The work that we do at Los Alamos National Laboratory (LANL) matters to our country and the world.

HPC Platforms Team: Upcoming Student Project Opportunities (Handout II)

Project HPC Cluster Regression (Lead Mentor: Alden Stradling)

Building on work done by our interns this summer, we are continuing the process of adapting existing regression testing software to do system-level regression testing. Using the LANL-developed Pavilion2 framework in combination with Node Health Check (NHC) for more detailed information, our interns are moving the system from proof-of-concept in a virtualized test cluster to production-style systems to measure effectiveness and system performance impact, and to flesh it out as a running system. Also on the agenda is to make test creation and propagation simple, allowing regression detection to be added at the same time as fixes are made to the system

Preferred skills

- Interest in HPC and modern infrastructure management at scale
- Problem solving and creativity
- Configuration Management
- Version Control
- Programming experience in bash, python or perl
- Strong background in UNIX and familiarity using CLI



***Make a Difference** - At LANL, we're determined to harness science and imagination to make the world a better and safer place by solving complex problems others can't. In LANL's High Performance Computing Division, we are pushing the computing pendulum, designing the future, and empowering scientists across the national laboratory to make an impact. When you're in charge of making a difference, there's no limit to what you can do.*

Questions? How to Apply? → HPCRecruits@lanl.gov

About the HPC Platforms Team

The High Performance Computing (HPC) Platforms Team provides vanguard system and runtime support for some of the largest and fastest supercomputers in the world, including multi-petaop systems (e.g., the recently deployed 40 Peta operations per second Trinity Supercomputer). Troubleshooters and problem-solvers at heart, the HPC Platforms Team seeks highly motivated, productive, inquisitive, and multi-talented candidates who are equally comfortable working independently as well as part of a team. Team member duties include: system deployment, configuration, and full system administration of LANL's world-class compute clusters; evaluating and testing new technology and solutions; diagnosing, solving, and implementing solutions for various system operational problems; system administration of HPC network infrastructure in support of compute clusters; diagnosing, solving, and implementing solutions for various system operational problems; system software management and maintenance, including security posture maintenance; tuning operating systems to increase performance and reliability of services; developing tools to support automation, optimization and monitoring efforts; interacting with vendors; and communicating and collaborating with other groups, teams, projects and sites.

Where You Will Work

Our diverse workforce enjoys a collegial work environment focused on creative problem solving, where everyone's opinions and ideas are valued. We are committed to work-life balance, as well as both personal and professional growth. We consider our creative and dedicated scientific professionals to be our greatest assets, and we take pride in cultivating their talents, supporting their efforts, and enabling their successes. We provide mentoring to help new staff build a solid technical and professional foundation, and to smoothly integrate into the culture of LANL.

Los Alamos, New Mexico enjoys excellent weather, clean air, and outstanding public schools. This is a safe, low-crime, family-oriented community with frequent concerts and events as well as quick travel to many top ski resorts, scenic hiking & biking trails, and mountain climbing. The short drive to work includes stunning views of rugged canyons and mesas as well as the Sangre de Cristo mountains. Many employees choose to live in the nearby state capital, Santa Fe, which is known for world-class restaurants, art galleries, and opera.

About LANL

Located in northern New Mexico, Los Alamos National Laboratory (LANL) is a multidisciplinary research institution engaged in strategic science on behalf of national security. LANL enhances national security by ensuring the safety and reliability of the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction, and solving problems related to energy, environment, infrastructure, health, and global security concerns.

The High Performance Computing (HPC) Division provides production high performance computing systems services to the Laboratory. HPC Division serves all Laboratory programs requiring a world-class high-performance computing capability to enable solutions to complex problems of strategic national interest. Our work starts with the early phases of acquisition, development, and production readiness of HPC platforms, and continues through the maintenance and operation of these systems and the facilities in which they are housed. HPC Division also manages the network, parallel file systems, storage, and visualization infrastructure associated with the HPC platforms. The Division directly supports the Laboratory's HPC user base and aids, at multiple levels, in the effective use of HPC resources to generate science. Additionally, we engage in research activities that we deem important to our mission.