



Overview. The mission of the UNM Center for Advanced Research Computing is to enable excellence in research in science, engineering, biomedicine, humanities, and the arts, through support for parallel supercomputing, high-throughput computing, and advanced visualization, and by providing leadership to enhance interdisciplinary computing-based research and education at the University.

The Center supports a wide array of advanced computer hardware, software, as well as very large-scale research storage. Systems include large community machines available to all faculty and researchers, as well as hosted and dedicated systems.

The main systems include:

- **Xena**, a 32-node high-performance Tesla GPU-based Dell Infiniband cluster acquired with support from an NSF Major Research Instrumentation grant (Office of Cyberinfrastructure);
- **Pobiano**, a 256 GB RAM, 32 core/32 FP processor SMP Silicon Mechanics shared-memory server for molecular biophysics, computational biology, and 'R'-based biomedical applications;
- **Nano**, a 32 node, 128 core Dell system with Myrinet interconnect (nanoscience, materials science, bioscience, chemistry and chemical physics);
- **Ulam**, a 120 node, 240 core IBM System x3755 cluster with Infiniband interconnect, and Metropolis, a 75 node, 150 core AMD system with Infiniband interconnect, both deployed under the auspices of the NSF-funded PRObE project through the NM Consortium (Los Alamos)
- **Pequena**, an SGI Altix ICE 8200 system (176 cores, Infiniband interconnect);
- **Galles**, a 200-node high-throughput Beowulf and Hadoop cluster, developed in collaboration with UNM IT, University Libraries, and Health Sciences Library and Information Center, used for parallel computing instruction.
- **Gibbs** (24 nodes, 384 cores, Infiniband interconnect) purchased by a consortium of physics, computer science, earth and planetary sciences, biology, and computational chemistry faculty. All supercomputers have a minimum of 4 GB RAM/core.
- A 481 TB HP x9000 storage system acquired by the UNM Research Storage Consortium (RSC) with support from four NSF research grants and University Libraries provides shared large-scale storage to CARC supercomputers, through a 10 GB network and switch fabric.
- Several research group clusters are hosted by the Center, e.g., **Bethe**, **m3** and **Pasi** (Physics and Astronomy), **Zeno** (Mathematics and Statistics), and **Synergy** (Biochemistry and Molecular Biology).

The Center for Advanced Research Computing serves as the academic unit in charge of the Computational Science and Engineering (CSE) Certificate Program, a graduate degree certificate. For more information about the CSE program, contact the Interim Director, Professor Patrick Bridges at bridges@cs.unm.edu.

About the University of New Mexico

The University of New Mexico is located in Albuquerque, the largest city in New Mexico. Albuquerque is an ethnically diverse city of half a million residents that has been listed among the smartest U.S. cities and best places to relocate in America. The city has a rich culture and a location offering unparalleled opportunities for outdoor adventure. The University is located within one hour of Santa Fe, and within minutes of the Sandia and Manzano mountain ranges, which offer great opportunities for hiking, biking, rock climbing and skiing.

The University of New Mexico is the premier research university in the state of New Mexico. UNM is a Carnegie Very High Research Activity Institution and a federally designated Hispanic-Serving Institution, with nearly 35,000 students on the main and branch campuses.

UNM boasts an outstanding faculty that includes a Nobel Laureate, two MacArthur Fellows, 35 Fulbright scholars and several members of national academies. Support for research in the College of Arts and Sciences, School of Engineering, College of Fine Arts, and School of Medicine comes from the NSF, NIH, DARPA, DTRA, DOE, ARO, NASA, and industry, as well as Los Alamos National Laboratory, the Air Force Research Laboratory (AFRL), and Sandia National Laboratories (SNL), all located within an easy drive of UNM.

As the state's flagship research institution, UNM supports research programs that inject millions of dollars into New Mexico's economy and give students valuable hands-on training in state-of-the-art laboratories. The University offers more than 210 degree and certificate programs, including 94 bachelor, 74 master, and 40 doctoral programs.

UNM was the only New Mexico university to be ranked among the top 25 colleges and universities for Latinos by Hispanic Magazine. The University is ranked first among law schools by Hispanic Business magazine; the School of Engineering, fifth and the School of Medicine, sixth.



Among the University's outstanding research units are the UNM Center for Advanced Research Computing, the NCI-designated UNM Cancer Center, the New Mexico Engineering Research Institute, and Center for High Technology Materials.