



Collaborative Computing Center (C3)

Enabling Idaho's research and education through computation and visualization technologies

The Department of Energy's mission relies firmly on computing capabilities in various forms. In recent years, high-performance computing (HPC) has become increasingly important in scientific research, and its use in research has expanded across diverse disciplines.

Modern science at Idaho National Laboratory (INL), Idaho universities, and industry in the state all rely on computer modeling and simulation to innovate new materials, predict performance, support nuclear energy, ensure safety, and conduct essentially all scientific research.

At many national laboratories, a basic high-performance computing program consists of a showcaselike infrastructure coupled with a very capable supercomputer. Network connectivity, disk storage systems and visualization hardware are often co-located in the same facility.

A successful computing strategy must include more than supercomputers. These powerful pieces of hardware are ultimately useless without people. It is the creativity, commitment and passion of people that make supercomputers useful tools.

The Collaborative Computing Center (C3), a pioneering computing environment, will invite collaborations and opportunities that would otherwise not be possible. We



Artist rendering of the Collaborative Computing Center

Changing the World's Energy Future

recognize that people and a collaborative work environment are the keys to success.

Mission growth

The Collaborative Computing Center will advance the computational science needs of the lab while providing academia and industry with unprecedented access to high-performance computing.

Idaho National Laboratory is leading innovation and technology development for the next generation of nuclear reactors through the Gateway for Accelerated Innovation in Nuclear (GAIN), the Nuclear Science User Facilities and the National University Consortium. INL supports the expansion of course offerings at Idaho State University, Boise State University and the University of Idaho to meet emerging opportunities in the nuclear energy industry. This is a critical area for nuclear energy research, development, demonstration and deployment. INL, universities and students all share a common interest in education and technology associated with nuclear science.

The facility

- Collaborative people-focused work areas
- Innovative high-performance computing infrastructure
- Dedicated high-speed network access, connecting the people to the computers

Benefits to Idaho universities

Since 2009, Idaho National Laboratory HPC has been highly invested in collaborations with



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Idaho universities, particularly University of Idaho, Boise State University and Idaho State University. Where the relationships have already been formed, C3 will help us to grow and expand these partnering opportunities, and have sufficient space for the large supercomputers associated with this work.

We are working together to offer career enhancement opportunities through tailored internships for students seeking advanced degrees in nuclear engineering, mechanical engineering, materials science, chemical engineering or computer science.

Off-site computer users, such as students and faculty at Idaho's universities and colleges, will have remote access to the HPC systems in the C3 facility through the Idaho Regional Optical Network (IRON).

C3 combined with IRON provides:

- Access for approximately 800 Ph.D.s in scientific and engineering disciplines
- Adjunct professors who support education in the state with limited compensation
- Mentoring of students by INL staff, hiring of interns and postdocs, and INL employee service on university committees
- INL sponsorship of joint appointments with faculty from Idaho universities
- Access to multibillion-dollar experimental facilities (ATR, MFC) for the Idaho education system
- Free use of INL supercomputers – computers purchased, operated, and maintained by INL
- Availability for the location of Idaho university computer systems for scientific computing or backup computer systems

For more information

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