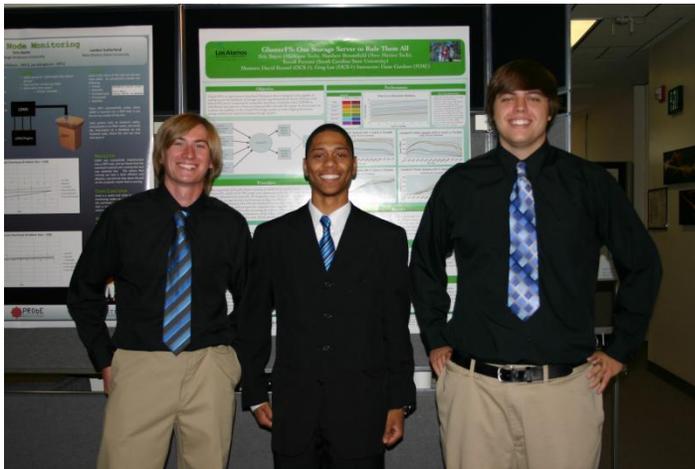




Computer System, Cluster, and Networking Summer Institute



Program Description

The Computer System, Cluster, and Networking Summer Institute (CSCNSI) is a focused technical enrichment program targeting third-year college undergraduate students currently engaged in a computer science, computer engineering, or similar major. The program emphasizes practical skill development in setting up, configuring, administering, testing, monitoring, and scheduling computer systems, supercomputer clusters, and

computer networks through a variety of activities, including hands-on technical training, lectures, professional development seminars, and tours of Los Alamos National Laboratory (LANL) facilities. Students work in small project teams to execute real-world projects on computer clusters that they assemble and configure. A qualified instructor provides class instruction, and LANL subject matter experts mentor team projects.

Program Vision

The CSCNSI program is designed to create a truly unique educational experience to develop cluster and networking skillsets and expose students to career and research opportunities in Supercomputing as applied to scientific pursuits. Through its emphasis on practical skill development in cluster computing, the curriculum complements and expands upon computer engineering and computer science curricula available in a typical university setting.

Through its partnership with LANL, the students are often able to work with advanced computer and networking hardware that is not available to students in most universities, and in addition receive tours and are exposed world-class scientific facilities. Instructor-led access to hardware and other resources enable the student participants to build their own working cluster and then execute a research project on that cluster, thus gaining instruction and experience that is rare at the undergraduate level.



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In addition, students receive professional development training, including resume writing and develop written and oral communications skills through critiqued presentations. They present their work at a technical poster session at the conclusion of the Summer Institute. The CSCNSI is an innovative, proactive approach to making the students aware of career possibilities within the Laboratory.

FY12 Data/Impacts

LANL Funding: \$60,000 to \$75,000 to fund seven student participants, plus program coordination and administration support.

Non-LANL Funding:

From National Science Foundation as part of Parallel Reconfigurable Observational Environment (PRObE) grant: \$60K to \$75K for instructor salary (ten weeks), student participant salaries (five students), administrative support, plus student office and classroom space.

When possible, we include Department of Energy Science (DOE) Undergraduate Laboratory Internship (SULI) fellowship students who are partially funded through DOE, and Historically Black Colleges and

Universities (HBCU) fellowship students who are fully funded through their respective program.

Non-LANL Funding Partner: National Science Foundation (managed through New Mexico Consortium)

Teacher/faculty participants: one instructor and 15 LANL staff mentors

Student participants: 13 (undergraduate, CE, CS, EE-type majors)

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