   Portland, OR -- Participants at the upcoming SC99 conference in Portland,
OR, will have ample opportunity to experience the progress made by the
National Computational Science Alliance in prototyping the next century's
advanced computational and information infrastructure. Alliance partners
will host seven research exhibits and give numerous speeches, presentations,
and tutorials. SC99, the annual high-performance networking and computing
conference, will be held Nov. 13-19 at the Oregon Convention Center.

   For the first time at an SC conference, researchers will show how the
Alliance is developing the Access Grid, a system that links people in
virtual spaces for collaborative science, workshops, and distance education
sessions. In fact, the Alliance, along with at least three other Alliance
partner sites - the Albuquerque High Performance Computing Center/Maui High
Performance Computing Center, Boston University, and Argonne National
Laboratory (ANL) - will feature constant, real-time links to the Access
Grid in their exhibitor booths. These connections will allow people to tap
into the Alliance's SC99 demos and presentations from around the country at
Access Grid nodes at UIUC, ANL, and the Alliance Center for Collaboration,
Education, Science and Software in Arlington, VA. Access Grid nodes are the
entry points to the Access Grid's virtual workspace. They can be as simple
as a desktop computer or as sophisticated as a large format multimedia
display system used in an interactive meeting room.

   "As usual a great number of Alliance researcher, partner sites, users of
Alliance resources, and our federal partners are contributing a great deal
of their time and expertise to the upcoming SC conference." said Larry
Smarr, director of the Alliance and NCSA. "And for those who won't be able
to come to Portland to hear about our work, the live Access Grid nodes on
the exhibit hall floor will give them a chance to see and hear about
important research efforts from a remote location."

   Daniel Reed, of the University of Illinois at Urbana-Champaign, head of
the Alliance Data and Collaboration team, and member of the Alliance
Executive Committee, will present a State of the Field talk called
"Performance: Myth, Hype and Reality." The talk will present an overview of
the continuing challenge of getting hardware and software to work together
to perform calculations in the shortest time possible.

   Chris Johnson, of the University of Utah and the Alliance Distributed
Computing team, will present a talk during the invited speakers sessions
titled "The ABC's of Large-scale Computing and Visualization: ASCI, Brains,
Cardiology and Combustion." Andrew Chien, a member of the Alliance Parallel
Computing team, will present an invited speakers talk titled "Supercomputing
on Windows NT Clusters: Experience and Future Directions." Reed, Michael
Heath and Josep Torrellas of the University of Illinois at Urbana-Champaign,
ANL's Foster and Lori Freitag, and George Karniadakis, a major user of

Alliance resources and a professor at Brown University, will each present technical papers during SC99 as well.

Alliance team members will also be active in the SC99 tutorials, presenting six of the 20 conference tutorials on Nov. 14 and 15. Charlie Catlett, a senior associate director of the Alliance and an Alliance Executive Committee member, will talk about computer and network security issues in a tutorial titled "Introduction to Cryptography, Security and Privacy Technologies."

Jim Ferguson, Mark Gates, Jason Novotny, Meghan Thornton, Mitch Kutzko, and Kai Chen, all of NCSA and the National Laboratory for Applied Network Research distributed applications support team, will present "Running Applications on High-speed Networks - Theory, Practice, and Case Study." Ian Foster, Gregor von Laszewski, and Steve Tuecke of ANL will lead "The Globus Grid Programming Toolkit," the second straight year they will offer a Globus tutorial. Globus is a software infrastructure for scientific problem solving over computational grids. The Globus Programming Toolkit helps application developers and tool builders overcome the obstacles of remote computing and distributed supercomputing to construct "grid enabled" applications.

Creating supercomputer clusters using off-the-shelf workstations will be addressed by Robert Pennington of NCSA and David Bader and Barney Maccabe of the University of New Mexico in a tutorial called "Design and Analysis of NT and Linux Superclusters for Computational Grids." Pennington is head of the Alliance's NT Supercluster development team while Bader and Maccabe lead the effort to develop the Alliance's Linux Supercluster called Roadrunner. Other tutorials involving Alliance members are "Tuning MPI Applications for Peak Performance," presented by William Gropp, Ewing Lusk, and Rajeev Thakur of ANL, and "Production Linux Clusters: Architecture and System Software for Manageability and Multi-user Access," presented by Remy Evard of ANL and Peter Beckman of Los Alamos National Laboratory.

Alliance partners with research exhibits at SC99 are: Argonne National Laboratory, Boston University, University of Utah, Los Alamos National Laboratory, Maui High Performance Computing Center/Albuquerque High Performance Computing Center, Ohio Supercomputer Center (OSC), and the National Computational Science Alliance itself.

Paul Woodward, of the University of Minnesota and member of the Alliance Executive Committee, will demonstrate the InTENsity PowerWall in the Department of Energy Accelerated High Performance Computing Initiative (ASCI) research booth. The InTENsity PowerWall's room-sized immersive virtual reality system - the development of which was supported in part by the Alliance - will be used to demonstrate the integration of the ASCI's efforts in the study of turbulence and transport, engineering, materials science, and distance and distributed computing and communications.

The National Computational Science Alliance is a partnership to prototype

an advanced computational infrastructure for the 21st century and includes more than 50 academic, government and industry research partners from across the United States. The Alliance is one of two partnerships funded by the National Science Foundation's Partnerships for Advanced Computational Infrastructure (PACI) program, and receives cost-sharing at partner institutions. NSF also supports the National Partnership for Advanced Computational Infrastructure (NPACI), led by the San Diego Supercomputer Center.

   The National Center for Supercomputing Applications is the leading-edge site for the National Computational Science Alliance. NCSA is a leader in the development and deployment of cutting-edge high-performance computing, networking, and information technologies. The National Science Foundation, the state of Illinois, the University of Illinois, industrial partners, and other federal agencies fund NCSA.

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