The Program

Papers

The SC08 Technical Papers program is the premier forum for disseminating innovative and important advances in high performance computing, networking, storage and analysis from academic, government and corporate institutions around the world. We invite you to submit your work on all aspects of applications, architecture, grids, networks, performance and system software. A two-part submission process is being used. Submissions will be rigorously reviewed by the Papers Committee with technical soundness and timeliness as the predominant acceptance criteria. Awards will be given for Best Paper and Best Student Paper. To be considered, submitted manuscripts must be no more than 20 pages in pdf format.

Questions: papers@info.supercomp.org

The SC08 Tutorials program gives attendees the opportunity to explore a wide variety of important topics related to high performance computing, networking, storage and analysis. SC08 invites proposals for introductory, intermediate and advanced tutorials, either full-day (six hours) or half-day (three hours). Consider including hands-on exercises and guidedlearning demos. A distinguished panel of experts will select the tutorials. Questions: tutorials@info.supercomp.org

The SC08 Panels program invites proposals for sessions focusing on exciting topics that are both relevant and timely in today's world of supercomputing. We are looking for panels offering diverse points of view and opportunities for audience participation. As in previous years, these sessions are expected to engender lively and even passionate debate. Questions: panels@info.supercomp.org

SC08 solicits submissions for posters displaying cutting-edge research in high performance computing, networking, storage and analysis. Posters provide an excellent opportunity for short presentations and informal discussions with conference attendees. Posters will be prominently displayed throughout the conference, giving presenters a chance to showcase their latest results and innovations. One poster will be honored with a Best Poster Award.

Students who are ACM members are also encouraged to submit posters as part of the ACM Student Research Challenge (SRC), with awards and special recognition at SC08 plus the chance to compete in the SRC grand finals.

Questions: papers@info.supercomp.org

Workshops

SC08 welcomes proposals for independently planned full-, half-, or multi-day workshops that complement the Technical Program and extend its impact by providing greater depth of focus. Proposals for workshops will be reviewed with an eye towards providing interaction and in-depth discussion of stimulating topics of interest to the HPC community.

Questions: workshops@info.supercomp.org

Questions: doc-showcase@info.supercomp.org

Birds-of-a-Feather Sessions (B0Fs)

Submissions are invited for Birds-of-a-Feather sessions (BOFs), which allow conference attendees to discuss topics of mutual interest. The conference will provide meeting room facilities and post daily schedules for the BOFs, which are open to all conference attendees, including exhibitors and exhibits-only badge holders. Questions: bofs@info.supercomp.org

Doctoral Showcase

A runaway success when it debuted at SC07, the Doctoral Showcase will return in SC08. The showcase invites Ph.D. students who will be graduating in the next 12 months to submit a short summary of their research. Presentations will be 15 minutes each to accommodate as many people as possible.

Gordon Bell Prize

Gordon Bell Prizes are awarded each year to recognize outstanding achievement in high performance computing. Now administered by the ACM, financial support of the \$10,000 award is provided by Gordon Bell, a pioneer in high performance and parallel computing. The purpose of the award is to track the progress over time of parallel computing, with particular emphasis on rewarding innovation in applying high performance computing to applications in science. The prize has been awarded every year since 1987. Prizes may be awarded for peak performance as well as special achievements in scalability, time-to-solution on important science and engineering problems, and low price/performance. Finalists will present their results in a technical session during the con-

Questions: gbellprize@info.supercomp.org

Disruptive Technologies

First introduced at SC06 as the Exotic Technologies Initiative, the Disruptive Technologies activity will return for SC08. Each year, DT will serve as a forum for examining those technologies that may significantly reshape the world of HPC in the next five to fifteen years, but which are not common in today's systems. Generally speaking, a disruptive technology is a technological innovation or product that eventually overturns the existing dominant technology or product in the marketplace. Disruptive Technologies will showcase these technologies in panel sessions and in a competitively selected exhibit showcase.

Questions: disruptive-techs@info.supercomp.org

Questions: bw-challenge@info.supercomp.org

Challenges provide a way to showcase both expertise and HPC resources at SC08 in friendly yet spirited competitions with other partici-

pants. Building on prior successes, SC08 will feature four challenges.

The Bandwidth Challenge is an annual competition for leading-edge network applications developed by teams of researchers from around the globe. Past competitions have showcased multi-10gigabit-per-second demonstrations. This year's Bandwidth Challenge will focus on realworld applications and data movement issues, and will include live demonstrations across the SCinet network infrastructure.

The HPC Storage Challenge is a competition showcasing applications that use approaches that effectively utilize the storage subsystem, which is often the limiting system component. Participants must describe their implementations and present measurements of performance, scalability and storage subsystem utilization. Judging will be based on these measurements as well as innovation and effectiveness; maximum size and peak performance are not the sole criteria. Finalists will be chosen on the basis of submissions which are in the form of proposals; they will present their completed results in a technical session during the conference, at which the winners will be selected.

The Cluster Challenge will showcase the amazing power of clusters and the ability to harness open source software to solve interesting and important problems. Teams will compete in real time on the Exhibits floor, where they will run a workload of real-world problems on clusters

of their own design. The winning team will be chosen based on workload accomplished, benchmark performance and overall architectural design.

Questions: cluster-challenge@info.supercomp.org

Questions: storage-challenge@info.supercomp.org

The Analytics Challenge aims to provide a forum for researchers and industry representatives to present complete solutions that embody all facets of high performance computing, such as comprehensive computational approaches, processing of large data sets, and high-end visualization technology to display results. The Analytics Challenge is a venue that also brings forth interesting applications from a wide variety of areas. Past finalists have presented solutions in areas such as orthodontics, traffic control, atomic energy, geophysics and music classification. The finalists will be chosen by a panel of judges in August 2008 and will be invited to present their submissions at SC08. The overall winner will be announced at the SC08 Awards Ceremony. Questions: analytics-challenge@info.supercomp.org

Technology Thrusts: Energy and Biomedical Informatics

In an effort to broaden the scope of the SC program, two Technology Thrusts—in Energy and Biomedical Informatics—have been added for

The Energy Thrust will focus both on the use of HPC in renewable energy and energy efficiency research as well as the challenge of best practices and technology trends aimed at energy efficient data centers. Questions: energy-thrust@info.supercomp.org

The Biomedical Informatics Thrust will focus on the use of Grid and HPC technologies to support translational biomedical research, computational biology, large-scale image analysis, personalized medicine and systems biology.

Questions: biomed-thrust@info.supercomp.org

Dates to Remem

Abstracts Due: Friday, April 4, 2008 Papers Due: Monday, April 7, 2008 Notification: Monday, June 30, 2008

Tutorials/Workshops/Panels Notification: Monday, June 30, 2008 **Notification: Monday, August 18, 200**

Disruptive Technologies Notification: Monday, June 16, 2008

Seymour Cray Computer Science and Engineering Award Nominations Open: **Nominations Due:** Monday, June 30, 2008

A new component of the conference, complementing Austin's title as the Live Music Capital of the World, will be the SC08 Music Initiative. While music and musicians may not readily come to mind when you think of SC conference attendees, it's no secret that a large number of SC attendees are also composers, musicians and music lovers, as well as scientists, mathematicians and engineers. The SC08 Music Initiative will bring together all these dimensions, add them to the conference programs, and make music an exciting and enjoyable aspect of the SC08 conference experience. If you are interested in helping create this initiative, compose, play, experiment or listen, contact us by email at sc08music@info.supercomp.org.

International Conference for High Performance Computing, Networking, Storage and Analysis

Education Program

The SC08 Education Program consists of an intensive program during the conference in Austin, as well as a series of summer workshops preceding the conference. The deadline for registering for the SC08 Education Program to be held in Austin during SC08 is Saturday, May 31, 2008. Registration information can be found at http://sc-education.org.

Information about SC08 summer workshops, including topics, schedules, locations and sign-ups, will be made available by Monday, December 3, 2007, at http://sc-education.org. The SC08 Education Program's summer schedule includes workshops in "Interdisciplinary Computational Science Education for Educators," "Computational Biology for Biology Educators," "Computational Chemistry for Chemistry Educators," "Computational Physics for Physics Educators," "Computing in the Humanities, Arts and Social Sciences," "Parallel and Cluster Computing, with an Emphasis on Biology and Chemistry," and "Integrating Computational Science into the Undergraduate Curriculum.'

Questions: education@info.supercomp.org

The Exhibits

At SC08, industry and research exhibits from the world's leading companies and organizations are showcased in a dynamic, interactive environment. High performance computing, networking, storage, data management, scientific visualization and collaborative technology are featured.

Industry Exhibits

SC08's Industry Exhibitors will demonstrate the latest advancements in HPC technology, showcasing new hardware, software, services and innovations. Industrial exhibitors will demonstrate the future of comput ing and networks from the desktop to petaflops. SC08 will continue to bring together scientists, engineers, and managers (four out of five of whom influence purchasing decisions) to see new products, new technologies and the latest innovations in high performance computing, networking and related disciplines. The conference will continue the rich tradition of real-time collaborations between the industry and research

Research Exhibits

Research exhibits provide an international venue for innovative applications of high performance computing, networking, storage and analysis from research institutions—universities, national laboratories, and nonprofit research centers—on five continents. Scientists and engineers display the latest advances in computational modeling, imaging, visual analysis and data technologies. Demonstrations done in collaboration with industry partners will provide an opportunity to showcase innovative research efforts and illustrate how computing is increasing our knowledge of our universe, our planet, our environments, ourselves and the materials and forces that shape our lives.

Plenty of opportunities exist for Industry and Research Exhibitors seeking space at SC08. Exhibitors interested in participating in SC08 should contact Hall-Erickson, Inc. at 630-434-7779 for more information. Questions: exhibits@info.supercomp.org

Exhibitor Forum

As at previous SC conferences, a highlight of the Exhibits Program is the Exhibitor Forum. These talks showcase the latest advances of Industry Exhibitors, including new products and upgrades, recent research and development, and future plans and roadmaps. Some present case studies by their customers, who have achieved better performance, reduced time-to-market, improved reliability, or enhanced capabilities by using exhibitors' technologies. Others give insight into the technology trends driving their strategies, the potential of emerging technologies in their product lines, or the impact of adopting academic research into their development cycle. Whatever the topic, the Exhibitor Forum can tell you what's happening today and tomorrow. Questions: exhibitor-forum@info.supercomp.org

Student Volunteers/ Broader Engagement Applications due: Friday, August 1, 2008 Notification:

Education Program Applications for the on-site program due: Saturday, May 31, 2008

Exhibitor Forum Applications due:

The Extras

Seymour Cray and Sidney Fernbach Awards

The Seymour Cray Computer Science and Engineering Award recognizes innovative contributions to high performance computing systems that best exemplify the creative spirit of Seymour Cray. The Sidney Fernbach Memorial Award honors innovative uses of high performance computing in problem solving. Sponsored by the IEEE Compuiter Society, these prestigious honors are presented during special sessions held during the conference.

Questions: awards@info.supercomp.org

SC Your Way

SC can be an overwhelming experience for attendees, particularly firsttimers. With multiple tracks in the technical program, hundreds of displays in the Exhibits Halls and thousands of people to talk to, it's easy to miss out on events important to each person. To help attendees deal with this information overload, SC Your Way will be inaugurated at SC08. The program will offer an SC "concierge service" to advise attendees both ahead of time (say you're looking for a hotel near the Austin convention center that offers two rooms that share amenities) and at the conference (such as identifying every session related to a particular topic or planning a route among the exhibits). SC Your Way will also help you make the most of your visit to Austin, informing you about the local music scene, restaurants, recreational activities and more. Information will be available both via the Internet and at a booth in the Austin Convention Center.

Questions: sc-your-way@info.supercomp.org

Launched at SC07, the Broader Engagement Initiative provides a number of opportunities and activities to help broaden the engagement of individuals from groups that have traditionally been under-represented in high performance computing. Participation grants will be available to support participation in the SC08 Technical Program. In addition to the complimentary conference registration, grant recipients will be reimbursed for their SC expenses for lodging and transportation, up to an agreed upon amount. Applications are encouraged from those

in all computing-related disciplines, including those with backgrounds in research, education and industry. Primary consideration will be given to applicants from groups that have traditionally been underrepresented in high performance computing, such as African-Americans, Hispanics, indigenous

people and women. Questions: be@info. supercomp.org

Student Volunteers

Undergraduate and graduate student volunteers are encouraged to apply as volunteers to help with the administration of the conference. In exchange, they will receive free conference registration, housing (for out-oftown volunteers) and most meals. Student volunteers have the opportunity to see and discuss the latest high performance computing and networking technology, and meet leading researchers from around the world while contributing to the success of this annual event. Questions: student-vols@ info.supercomp.org

www.sc08.supercomputing.org

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20 YEARS - UNLEASHING THE POWER OF HPC

November 15-21, 2008

Austin Convention Center Austin, Texas

> Conference Dates November 15-21, 2008

Exhibits Dates November 17-20, 2008

When SC08 opens November 15, 2008 in Austin, Texas, the conference series will celebrate its 20th anniversary as the premier international conference on high performance computing, networking, storage and analysis. The conference features the latest scientific and technical innovations from around the world. Bringing together scientists, engineers, researchers, educators, programmers, system administrators and managers, SC08 is the forum for demonstrating how these developments are driving new ideas, new discoveries and new industries.

Plan now to be a part of SC08 and its program of trailblazing technical papers, timely tutorials, invited speakers, up-to-the-minute research posters, entertaining panels and thought-provoking birds-of-afeather sessions. New for 2008 will be two Technology Thrusts: Energy and Biomedical Informatics. Additionally, exhibits from industry, academia, and government research organizations will demonstrate the latest innovations in computing and networking technology. SC08 promises to be the most exciting and innovative SC conference yet!

About the SC08 logo

The SC08 logo reflects themes common to both the SC conference and the state of Texas. While Texas is the Lone Star State, the HPC community is a virtual galaxy of stars, including longtime luminaries who established and built the conference and the next generation of rising stars who bring new ideas and perspectives to SC. The charging horses evoke Texas' frontier heritage, as well as the ever-increasing "horsepower" of parallel computing systems and networks. The horses' forward movement reflects the community's constant pushing on the frontiers of high performance computing, networking, storage and analysis.

The International Conference for High Performance Computing, Networking, Storage and Analysis



www.sc08.supercomputing.org