

## 2004 Fall Creek Falls Conference

### Programmatic Theme

With the establishment of the National Leadership Computing Facility (NLCF), there is a unique opportunity and responsibility for the scientific community to deliver on the promise of computation to revolutionize the practice and scope of scientific and engineering research. Success cannot be achieved without breakthroughs in scalable computer architectures, applied mathematics, and computer science, for which bold, innovative ideas in theory, modeling, and simulation are required. In this spirit and to this end, the theme of the 2004 Fall Creek Falls (FCF) Conference is “Delivering Computational Science to the Nation.”

The conference will explore the R&D agenda for the NLCF, the essence of which was expressed by DOE SC Director Ray Orbach: “Rather than simply scaling up existing computer systems, communities with common computational interests will join together with applied mathematicians, computer scientists, and chip and interconnect manufacturers to tailor machines to scientific problems.” [1] For the purpose of advancing new insights and solutions to critical scientific challenges for DOE and the nation, the FCF conference will promote discussion of the “state-of-the-art” in scientific computing within four major thrusts:

- Discovery through computing
- Innovative mathematical methods and algorithmic techniques
- Leadership-class computing resources
- Design and evaluation of future computing architecture

Presenters will be asked to address questions such as: “What new techniques, methods, and capabilities are needed to advance the nation’s scientific agenda?” “How can we coordinate our efforts to better focus on DOE’s mission?” “How can we better work together to achieve the goals of the scientific community at large?” Participants will join in discussion of recent key achievements and issues, including opportunities for exploiting the natural synergy between the four thrusts. In support of this agenda, the FCF Conference Organizing Committee has selected a format and site location to encourage extensive formal and informal peer discussion and a sense of community among the attendees.

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<sup>1</sup> Ray Orbach, talk at SC2002