

The Colorado State University Computer Science Department and ISTeC present:

## ManyCore, Clouds, Research and the Future

**Dr. Dan Reed**

Scalable and Multicore Computing Strategist, Microsoft

Monday, April 13, 2009, 10:00-11:00, LSC Grey Rock Room

### **Abstract**

As Yogi Berra famously noted, Its hard to make predictions, especially about the future. Without doubt, though, scientific discovery, business practice and social interactions are moving rapidly from a world of homogeneous and local systems to a world of multicore processors, distributed sensors and software, virtual organizations and cloud computing infrastructure. In science, a tsunami of new experimental and computational data poses vexing problems in data analysis, transport, visualization and collaboration. In society and business, software as a service and cloud computing are empowering distributed groups. Lets step back and think about the longer term future. Where is the technology going and what are the research implications? What architectures are appropriate for 100-way or 1000-way multicore designs? What are the design challenges for mega data centers? How do we develop and support software? What is the ecosystem of components in which they will operate? How do we optimize performance, power and reliability? What do all of these things mean for fundamental computing research and how to we balance research risk and reward?

### **Speaker Biography**

Daniel A. Reed is Microsoft's Scalable and Multicore Computing Strategist, responsible for re-envisioning the data center of the future and coordinating Microsoft's external multicore research program. Previously, he was the Chancellor's Eminent Professor at UNC Chapel Hill, as well as the Director of the Renaissance Computing Institute (RENCI) and the Chancellor's Senior Advisor for Strategy and Innovation for UNC Chapel Hill. Dr. Reed was a member of President Bush's Council of Advisors on Science and Technology (PCAST) and a former member of the President's Information Technology Advisory Committee (PITAC). He recently chaired a review of the federal networking and IT research portfolio for PCAST, and he is chair of the board of directors of the Computing Research Association.

He was previously Head of the Department of Computer Science at the University of Illinois at Urbana-Champaign (UIUC). He has also been Director of the National Center for Supercomputing Applications (NCSA) at UIUC, where he also led National Computational Science Alliance. He was also one of the principal investigators and chief architect for the NSF TeraGrid. He received his PhD in computer science in 1983 from Purdue University.