

# Computer Science

## Distinguished Seminar

### The Future of Computing

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In science and engineering, a tsunami of new experimental and computational data and a suite of increasingly ubiquitous sensors pose vexing problems in areas as diverse as astronomy (the LSST and the SKA) and high energy physics (the LHC), neuroscience (the Human Brain project), and environment science (NEON). Cloud computing and “big data” are extending our notions of computational science and engineering, bringing technical, political and economic challenges. Likewise, the end of semiconductor Dennard scaling poses new technology challenges in designing ever-faster computing systems. This talk will examine “the future of computing” and its scientific, technical and social implications within a global context. In addition, we will examine the scientific opportunities and challenges surrounding

deep learning and its intersection with clouds and exascale computing. We will place both within the context of the National Strategic Computing Initiative (NSCI).

**Bio:** Daniel A. Reed is Vice President for Research and Economic Development, as well as University Chair in Computational Science and Bioinformatics and Professor of Computer Science, Electrical and Computer Engineering and Medicine, at the University of Iowa. He currently serves as chair of the Department of Energy’s Advanced Scientific Computing Advisory Committee, and he has served as a member of the U.S. President’s Council of Advisors on Science and Technology (PCAST). Previously, he was Microsoft’s Corporate Vice President for Technology Policy and Extreme Computing, where he helped shape Microsoft’s long-term vision for technology innovations in cloud computing and the company’s associated policy engagement with governments and institutions around the world. Before joining Microsoft, he was the Chancellor’s Eminent Professor at UNC Chapel Hill, as well as the founding Director of the Renaissance Computing Institute (RENCI) and the Chancellor’s Senior Advisor for Strategy and Innovation for UNC Chapel Hill. Prior to that, he was Gutgsell Professor and Head of the Department of Computer Science at the University of Illinois at Urbana-Champaign (UIUC) and Director of the National Center for Supercomputing Applications (NCSA).

**Date: October 13, 2016**

**Time: 2:00 pm**

**Place: 104 Centennial**

