

# Quantum Computing: Transforming the Digital Age

*Distinguished Lectures in Computer Science*

Speaker: Dr. **Krysta Svore**, Microsoft Research

11:30am, Monday, October 19, 2015

Davis Auditorium, CEPSR

Abstract: In 1981, Richard Feynman proposed a device called a “quantum computer” to take advantage of the laws of quantum physics to achieve computational speed-ups over classical methods. Quantum computing promises to revolutionize how we compute. Over the course of three decades, quantum algorithms have been developed that offer fast solutions to problems in a variety of fields including number theory, optimization, chemistry, physics, and materials science. Quantum devices have also significantly advanced such that components of a scalable quantum computer have been demonstrated in a variety of quantum systems. I will attempt to reveal some of the mysteries of this disruptive computational paradigm. I will showcase recent advances in quantum algorithms for real-world applications and in scalable, programmable, fault-tolerant quantum devices.

Bio: Dr. Krysta Svore is a Senior Researcher at Microsoft Research in Redmond, Washington, where she manages the Quantum Architectures and Computation group. Dr. Svore received an ACM Best of 2013 Notable Article award. In 2010, she was a member of the winning team of the Yahoo! Learning to Rank Challenge. She is a Senior Member of the Association for Computing Machinery (ACM), serves as a representative for the Academic Alliance of the National Center for Women and Information Technology (NCWIT), and is an active member of the American Physical Society (APS).

