Keynote Speaker

Abstract:

Computer Systems Research and Design in the Post-Moore Era: Navigating the Seismic Shift

With Dennard Scaling over and Moore's Law slowing, computing has shifted dramatically toward the use of heterogeneous specialized parallelism. That shift, in turn, is driving subsequent shifts in abstractions and software across the full hardware-software ecosystem. My talk will give several examples of the impact these shifts are having on research and design, particularly in simulator-driven research areas. I will then discuss some of the ways forward, both in terms of possibilities for new tools and approaches and also in terms of new research directions and the NSF programs that pertain to them.

Biography:

Margaret Martonosi is the US National Science Foundation's (NSF) Assistant Director for Computer and information Science and Engineering (CISE). With an annual budget of more than $1B, the CISE directorate at NSF has the mission to uphold the Nation's leadership in scientific discovery and engineering innovation through its support of fundamental research and education in computer and information science and engineering as well as transformative advances in research cyberinfrastructure. While at NSF, Dr. Martonosi is on leave from Princeton University where she is the Hugh Trumbull Adams '35 Professor of Computer Science. Dr. Martonosi's research interests are in computer architecture and hardware-software interface issues in both classical and quantum computing systems. She is an elected member of the American Academy of Arts and Sciences, and a Fellow of the Association for Computing Machinery (ACM) and the Institute of Electrical and Electronics Engineers (IEEE). In addition, she has earned numerous awards for her technical research, as well as for her graduate and undergraduate student mentoring, and for her research community service around diversity and inclusion issues.