



“The Slow-down of Moore's Law and the Future of Supercomputing”

Dr. Marc Snir

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3:30PM in EEB 248

Refreshments will be provided
Hosted by Prof. Viktor Prasanna

Abstract: Supercomputing has had two "easy" decades where most of the increased performance of supercomputers came from the increase in uniprocessor performance. This period has come to an end, due to the stagnation in uniprocessor performance. The slow-down of Moore's Law implies that future performance improvements will require more innovation at the architecture level and the software layers. The talk will discuss the evidence for a slow-down; the implications for supercomputing; and the potential research directions this suggests.



Bio: Marc Snir is director of the Mathematics and Computer Science Division at Argonne National Laboratory and Michael Faiman and Saburo Muroga Professor in the Department of Computer Science at the University of Illinois at Urbana-Champaign. He received a PhD in mathematics from the Hebrew University of Jerusalem in 1979 and spent two years at New York University, where he was involved with the NYU Ultracomputer project.

At IBM Research, during 1990–2000, he led the research team that developed the software for the IBM Scalable Parallel System (IBM SP) product – the first microprocessor-based highly parallel system that was commercialized by IBM. Snir also led the research group responsible for major contributions to the IBM Blue Gene system. During this period, Snir was involved in the standardization

efforts on High-Performance Fortran and MPI. Snir served as head of the Dept. of Computer Science at UIUC from 2001 to 2007, and was lead software architect for the Blue Waters system installed at NCSA. Snir has published numerous papers and given many presentations on computational complexity, parallel algorithms, parallel architectures, interconnection networks, parallel programming environments, and parallel languages and libraries.

Snir is a fellow of the AAAS, the ACM, and the IEEE. He has Erdős number 2 and is a mathematical descendant of Jacques Salomon Hadamard.