MasterWorks Lecture Series

CASC

Wednesday, December 4, 2019

10:00 A.M.

B453 Armadillo Auditorium

Bill Gropp

University of Illinois at Urbana-Champaign

Challenges in Intranode and Internode Programming for HPC Systems

BIOGRAPHY

Dr. William "Bill" Gropp is NCSA Director and Chief Scientist, and holds the Thomas M. Siebel Chair in the Department of Computer Science at the University of Illinois at Urbana-Champaign. He received his Ph.D. in Computer Science from Stanford University in 1982. He was on the faculty of the Computer Science Department of Yale University from 1982-1990 and from 1990-2007 he was a member of the Mathematics and Computer Science Division at Argonne National Laboratory, including as Associate Director of the Mathematics and Computer Science Division.

Dr. Gropp recently co-chaired the National Academy's Committee on Future Directions for NSF Advanced Computing Infrastructure to Support U.S. Science. In 2016, the Association for Computing Machinery (ACM) and IEEE Computer Society named Gropp the recipient of the 2016 ACM/IEEE Computer Society Ken Kennedy Award "for highly influential contributions to the programmability of high-performance parallel and distributed computers, and extraordinary service to the profession."

ABSTRACT

After over two decades of relative architectural stability for distributed memory parallel computers, the end of Dennard scaling and looming end of Moore's "law" is forcing major changes in computing systems. To continue to provide increased performance computer architects are producing innovating new systems. This innovation is creating challenges for exascale systems that are different than the challenges for the extreme scale systems of the past. This talk discusses some of the issues in building a software ecosystem for extreme scale systems, with an emphasis on leveraging software for commodity elements while also providing the support needed by high performance applications.

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