Matrix Computations & Scientific Computing Seminar

Organizer: James Demmel & Ming Gu

Wednesday, 12:10–1:00pm, 380 Soda

Feb. 22 **Kathy Yelick**, UCB and LBNL

Generalizing Communication Optimal Algorithms

Recent work by Demmel *et al* resulted in new communication-avoiding algorithms for dense linear algebra, as well as communication lower bounds against which the algorithms can be shown optimal. In this talk we deconstruct the matrix multiplication lower bound and algorithm to suggest circumstances under which the ideas may be applied to other algorithms or even automated by a compiler. This results in a number of insights, open questions, and a new communication-optimal algorithm for $O(n^2)$ n-body computations.