Matrix Computations & Scientific Computing Seminar

Organizer(s): James Demmel & Ming Gu

Wednesday, 11:00am–12:00pm, 380 Soda

April 14   **Prof. James O'Brien**, UC Berkeley
              Mesh Modification and Real-Time FEM Simulation

This talk will discuss a pair of simulation systems that been developed to model complex deformable behaviors in real-time, interactive contexts. Based around fast finite element methods, the systems are designed to address two specific applications: destructible environments in Star Wars: The Force Unleashed, and interactive modeling of prostate brachytherapy. Although dynamic remeshing is often dismissed as impractically slow, in both cases it was key part to making the algorithms work effectively in a real-time setting. The results presented will include captured footage from the live game and comparisons of simulated needle insertion to footage with gel tissue phantoms.