Final Program - GPU Computing Accelerating Innovation, Research and Discovery
April 24th, 2013
Northeastern University, 140 The Fenway, 3rd floor

8:30 Welcome David Kaeli and Jon Saposhnik

8:35 Keynote GPUs Current and Future role in Accelerated Research Computing
Kimberly Powell - Director Research Computing, NVIDIA

9:15 - 10:00 Invited Talks

- Molecular Dynamics and the GPU Revolution: Sampling for the 99% - Ross Walker, San Diego Supercomputer Center & Department of Chemistry and Biochemistry
- Accelerating Radio Astronomy Cross-correlation Using the Kepler Architecture - Ben Barsdell, Harvard University

10:00 - 10:30 Break

10:30 -12:00 Industrial and Competition Session

- The Future of CUDA - Mark Ebersole, NVIDIA
- Prototyping Algorithms and Testing CUDA Kernels in MATLAB - Gerardo Hernandez, Mathworks
- Tools for designing GPU enabled HPC systems with Kepler GPUs - Saeed Iqbal, Dell
- Student Cluster Competition Learnings from SC'12 - Michael Abed, Boston University

NOON - 1:00 Lunch

1:00 - 2:00 Performance, Simulation and Benchmarking

- Benchmarking the Performance of GPU Memory - Ryan Meltzer, Chi Zeng, Cris Cecka, Harvard University
- Simulation Framework to Analyze Graphics and Compute Performance on System-on-Chip Devices - Yash Ukidave, Xiang Gong, Rafael Ubal, David Kaeli, Northeastern University
- Valar: A Benchmark Suite to Study the Dynamic Behavior of Heterogeneous Systems - Perhaad Mistry, Yash Ukidave, Dana Schaa, David Kaeli, Northeastern University

2:00 - 2:15 Break

2:15 - 3:15 Photonics and Biomedical Applications

- Using GPUs to Efficiently Perform Dense and Sparse Linear Algebra Analysis - John Humphrey, Kyle Spagnoli, Eric Kelmelis, Aaron Paolini, EM Photonics
- Development of a GPU-based Monte Carlo dose calculation package for proton radiotherapy - Jan Schuemann, Massachusetts General Hospital - Department of Radiation Oncology
- Faster 3D CT Reconstruction using CUDA and OpenCL - Saoni Mukherjee, Nicholas Moore, James Brock, Miriam Leeser, Northeastern University

3:15 - 3:30 Wrap-up David Kaeli, Jon Saposhnik

3:45 - 5:45 Session Teaching Parallel Computing with GPUs - Mark Ebersole, NVIDIA