



# HPC User Forum Agenda

32<sup>nd</sup> HPC User Forum – April 20 to 22, 2009 Roanoke, VA

## Monday, April 20, 2009

- 12:00pm Registration opens
- 1:00pm HPC in a Challenging Economy: IDC HPC market update and new forecasts, followed by a discussion on which parts of the HPC market are expected to see higher growth, which are likely to remain stable and which will likely see a decline in 2009.
- 1:30pm **Breakthrough Computing in Petascale Applications and Petascale System Examples**
  - 1:30pm Peta-applications program at LBL-NERSC, Harvey Wasserman
  - 2:00pm Roadrunner/Cell, Kenneth Koch, LANL
  - 2:30pm Peta-applications program at ORNL, Doug Kothe
  - 3:00pm NCSA Blue Waters Directions, Merle Giles
  - 3:30pm Challenges that have to be overcome for petascale (and beyond) computing, Robert Wisniewski, IBM Watson Labs
- 4:00pm Break
- 4:15pm Vendor technology update: Steve Wallach, Convey
- 4:55pm **Supporting Industrial HPC Users:** Nimbis Services update: bringing HPC to SMB, Robert Graybill
- 5:15pm Intel's perspective on HPC requirements and alternative processors, Steve Pawlowski
- 5:45pm Break for networking and hotel checking in
- 6:30pm Reception starts
- 7:00pm Special Dinner Event and short vendor technology updates to provide an overview of changes in the industry (Altair, Appro, IBM, Panasas, Penguin Computing, ScaleMP, SpectraLogic)

## Tuesday, April 21, 2009

- 7:15am Networking Breakfast
- 8:00am Introductions And Welcome, Steve Finn and Earl Joseph
- 8:10am **Driving Competitiveness in Product Design**
  - Trends and Future HPC Requirements in Product Design and Development
  - Morning chair: Steve Finn, BAE
  - 8:10am Using HPC for advanced aerospace design, Doug Ball, Boeing
  - 8:40am NASA rapid prototyping, Ted Anderson, NASA Marshall
  - 9:00am HPC for vehicle design, Sharan Kalwani
- 9:20am End User Update: Tarek El-Ghazawi, George Washington University-NSF Center for Reconfigurable Computing
- 9:45am Break
- 10:00am **Panel on I/O and Storage Requirements and Directions**
  - Moderators: Sharan Kalwani and Jim Kasdorf, PSC
  - Panel members: Constantin Scheder, General Atomics; Henry Newman, Instrumental, Peter Bojanic, Sun, Jason Sommerfield, PSC, Garth Gibson, Panasas, LSI, John Josephakis, DDN
- 11:20am Silent data corruption in HPC, Henry Newman
- 11:45am ParaMEDIC: Parallel Metadata Environment for Distributed I/O and Computing, Wu Feng, Virginia Tech
- 12:10pm Lunch

## Tuesday, April 21, 2009 (afternoon)

- 1:00pm **Driving Competitiveness in Product Design**  
Afternoon chair: Paul Buerger, OSC, Trends and Future HPC Requirements in Product Design and Development  
1:00pm HPC for advanced product design, Ramesh Krishnan, ATK  
1:25pm Using HPC in the DOD HPCMP for virtual design/testing, Ken Lesueur, Army  
1:50pm HPC for drug discovery and bio research, Jack Collins, NCI  
2:15pm Using HPC for product design/testing in IT at Intel, Shesha Krishnapura, Intel
- 2:40pm Simulating the Spread of Infectious Disease over Large Realistic Social Networks, Keith Bisset, Virginia Bioinformatics Institute
- 3:00pm **Supporting Industrial HPC Users** -- Bringing HPC to industry: OSC Blue Collar Computing, Stan Ahalt
- 3:20pm Break
- 3:35pm **Back-End Compiler Technology Panel**  
Moderators: Robert Singleterry, NASA Langley and Vince Scarafino, industry expert  
Panel members: Luiz DeRose, Cray, Srinidhi Varadarajan, Virginia Tech, Don Kretsch, Sun, Steve Rowan, Convey, Robert Geva, Intel, Kevin Harris, SiCortex,
- 4:50pm **Supporting Industrial HPC Users: New directions at the Council on Competitiveness**, David Padgham
- 6:30pm Special Dinner Event and short vendor technology updates to provide an overview of changes in the industry and Examples of developing a new generation of HPC talent and leaders: (Virginia Tech student HPC projects, Mellanox, Open Fabric Alliance, SGI, siXis, Sun)

## Wednesday, April 22, 2009

- 7:15am Networking Breakfast
- 8:00am Welcome, Earl Joseph and Steve Finn
- 8:00am **Using HPC to Drive New Energy Solutions and Efficiency**  
8:00am Major US Government Initiatives in Alternative Energy, ARPA-E and petascale applications, Gil Weigand, ORNL  
8:30am Victor Reis, Petascale plans and ARPA-E  
9:00am Wind Power: Site selection and Machine Design via HPC, Steve M. Legensky, Intelligent Light  
9:25am Cooling issues, directions and solutions, Roger Panton, Avetec
- 9:50am Shared memory-like compiler framework, Srinidhi Varadarajan, Virginia Tech
- 10:15am **Supporting Industrial HPC Users: DOE INCITE program**, Julia White, ORNL
- 10:35am Break
- 10:50am **Alternative Processors Technology Panel**  
Users will discuss their real-world experiences with FGPAs, GPGPUs, Cell and other non-traditional HPC processors, vendors will address these requirements  
Moderator: Paul Muzio, CUNY and Jack Collins, NCI-ABCC  
Panel members: Kenneth Koch, LANL; Wu Feng, Virginia Tech, Paul Muzio, CUNY, Stephen Bique, NRL, Olaf Storaasli, ORNL, Sanford Russell, Nvidia
- 12:00pm Using VM and Cloud in HPC, William Lu, Platform Computing. The presentation will discuss use cases, challenges and potential solutions for using VM in HPC environments.
- 12:30pm Introducing the HPC Advisory Council, GM, Dell, AMD, Mellanox
- 1:15pm Meeting Wrap-Up and Future Meeting Dates, Earl Joseph and Steve Finn
- 1:15pm Lunch
- 2:00pm Virginia Tech visit and tour, and individual one-on-one meetings
- 4:30pm Meeting Ends