



HPC User Forum Agenda

57th HPC User Forum

September 8-10, 2015 – Broomfield, Colorado

Meeting Sponsors: Altair, AMD, Bright Computing, Engility, HP, Intel, Mellanox, Panasas, and SUSE

Tuesday, September 8, 2015

5:00pm Registration Starts

6:30pm Welcome Dinner Reception and Short Vendor Technology Updates

Wednesday, September 9, 2015

7:15am Networking Breakfast

8:00am Meeting Welcome and Announcements

- Chairman's and Co-chairman's Welcome, Paul Muzio and Rupak Biswas
- HPC Market Update, Earl Joseph, Steve Conway and Bob Sorensen

Session Chair: Paul Muzio

8:15am **Focus Area: HPC in the Earth Sciences**

- High Performance Computing for the Louisiana Coastal Master Plan, Zachary Cobell, ARCADIS-US
- Evolution of NASA Earth Science Data Systems in the Era of Big Data, Christopher Lynnes, NASA
- Using HPC to Inform Climate Change Policy Decisions, Eugene Dzedzits, City University of New York

9:45am Break

10:15am **Focus Area: HPC in the Earth Sciences (Continued)**

- MITgcm And How High Performance Computing Has Led To Significant Scientific Discoveries In Earth Science, Christopher Hill, MIT
- The New York City Solar Map, Paul Muzio, City University of New York
- Refactoring Climate And Weather Applications For Exascale, Rich Loft, NCAR

11:45pm Vendor Technical Update: HP R&D Plans for HPC

12:00pm Networking Lunch

Session Chair: Jim Kasdorf

1:00pm **Technology Focus Area: HPDA/Big Data Supporting Technologies, Security, Interconnects and Storage (15 minute presentations)**

- Update on DMF/LiveArc, Kirill Malkin, SGI
- Dell HPDA Update: Jim Ganthier, Dell
- The New Intel Omni-Path Architecture, Ed Groden, Intel
- Best Practices in Private Sector Cyber Security, Bob Sorensen, IDC
- HPC + D + A = HPDA? Trends in High Performance Computing, Data and Analytics, Barry Bolding, Cray
- Panel Discussion and Q&A

2:30pm Vendor Technical Update: Intel Plans for HPC, Bret Costelow, Intel

2:45pm Break

3:15pm Leveraging HPC for Alzheimers Research and Beyond, Joe Lombardo, UNLV/NCSEE

3:45pm The Inspur-Intel China Parallel Computing Joint Lab, Qing Zhang, Inspur

4:15pm HPC Best Practices: Lessons observed from 40+ HPC procurement & service review projects, Andy Jones, NAG

4:45pm Update on the ROI with HPC, Highlighting HPC Success Stories, Earl Joseph, IDC

5:00pm Networking Break

6:30pm Special Dinner Event: 6:30pm – 10:00pm



Day Two

Thursday, September 10, 2015

7:15am Networking Breakfast

8:00am Welcome: Paul Muzio, Rupak Biswas, Earl Joseph and Steve Conway

Session Chair: Earl Joseph

8:00am **Panel on US Plans for Advancing HPC: Potential Implications Of The White House Executive Order and NSCI**

- Panel moderator: Bob Sorensen
- Panel members: Randy Bryant, OSTP, Irene Qualters, National Science Foundation, DOE Office of Science, Will Koella, Department of Defense, NASA, and other agencies

9:15am Open Forum Discussion and Q&A of the NSCI Plans and Directions

- Panel members: Doug Kothe, Oak Ridge National Laboratory, Bill Kramer, NCSA, Rob Leland, Sandia National Laboratory, Bert Still, LLNL, Nathan Baker, PNNL, Piyush Mehrotra, NASA Advanced Supercomputing Division, and David Lifka, CASC

10:15am Break

10:45am **Disruptive Technology Panel:** Panel members are asked to present in under 5 minutes a disruptive technology that could change the HPC industry.

- Panel moderators: Earl Joseph and Paul Muzio
- Each panel presenter is asked to use 3 slides: a) What is the disruptive technology, b) Why it is disruptive – What does it do for the end user? and c) What do you expect it will do in the market place?
- Then three of the HPC User Forum steering Committee members will probe: 1) Is this really a disruptive technology? 2) Who will likely be able to use it? and 3) What can be done to bring it to market sooner?
- Presenters and their topics:
 - 3D Xpoint technology, Ken Gibson, Intel
 - Processing 1 EB per Day for the SKA Radio Telescope, Peter Braam, Cambridge University
 - Accelerating Content Distribution and Enabling Collaboration, Chris Myhill, Data Direct Networks
 - The D-Wave 2X Quantum Computer: 1,000 Qubits, Bo Ewald, D-Wave
 - Challenging Data Analytics Architectures, Joseph George, Hewlett Packard
 - ExaNest technology: Targeting Exascale in 2018, Peter Hopton, Iceotope
 - Leveraging Containers in Elastic Environments, Nick Ihli, Adaptive Computing
 - Breaking the Disk IO Bottleneck in CFD by Eliminating It, Steve Legensky, Intelligent Light
 - NVLink Interconnect for GPUs, Stan Posey, Nvidia
 - Heterogeneous On-Demand Storage for HPC Workflows in the Cloud, Leo Reiter, Nimbox
 - Optimizing Cloud and HPC Technologies through a Disruptive Business Model for Advanced Simulation, Robert Walsh, Altair Engineering
 - All and none of the above, Paul Muzio, CUNY

12:15pm Networking Lunch

Session Chair: Suzy Tichenor

1:15pm **Panel: Energy Efficiency and Renewables Panel**, Moderated by Steve Hammond, NREL

- HPC in Energy Applications, Steve Hammond, NREL
- Wind Plant Flow Physics, Michael Sprague, NREL
- Simulations for Enhanced Drilling Techniques, Joel Moxley, ForoEnergy
- Materials by Design, Vladan Stevanovic, NREL

3:15pm Break

3:45pm NOAA's Software Engineering for Novel Architectures Project, Leslie Hart, NOAA

4:15pm EU/European HPC Plans for the Next Decade, Bob Sorensen, IDC

4:30pm HPC site update: Doug Kothe, ORNL

5:00pm Meeting Wrap-Up, Paul Muzio, Rupak Biswas, Earl Joseph and Steve Conway