



# HPC User Forum Agenda

## 48<sup>th</sup> HPC User Forum

September 17 - 19, 2012 -- Dearborn, Michigan

*"Emerging Trends in HPC"*

### Monday, September 17, 2012

- 5:00pm Registration Starts, Including a Special Car Exhibit  
6:30pm Welcome Dinner Reception and Short Vendor Technology Updates: Altair, Appro, Boston Ltd., Cray, Parallel Scientific, Nvidia, Mellanox, Panasas, SGI and Xyratex

### Tuesday, September 18, 2012

- 7:15am Networking Breakfast  
8:00am Meeting Welcome and Announcements, Steve Finn, Jim Kasdorf, Rupak Biswas, New IDC HPC Research, Earl Joseph and Steve Conway  
**Morning Session Chair: Jim Kasdorf**  
8:05am **HPC Topic #1: The Economic Value of HPC and the Industrial Use of HPC**
  - The Computational Center for Nanotechnology Innovations at RPI, James Myers (25 min)
  - Industrial Engagement at the San Diego Supercomputer Center, Ron Hawkins, San Diego Supercomputer Center (25 min)
  - Data Analysis and Visualization for the DoD HPCMP, Paul Adams, ERDC (25 min)
  - Manufacturing Extension Program (MEP), Dan Luria, The Michigan Manufacturing Technology Center (10 min)

9:30am Sequoia System Update, Terri Quinn, Lawrence Livermore National Laboratory (25 min)  
9:55am Break  
10:15am **HPC Topic #1: The Economic Value of HPC and the Industrial Use of HPC (cont.)**
  - Computational Research for Engineering and Science - Ground Vehicle" (CRES-GV) Program, Daniel Kedziorek and Robert Smith, US Army RDECOM-TARDEC (25 min)
  - The "Missing Middle" Initiative at Intel, Debra Goldfarb, Intel (15 min)
  - Energy Efficiency Issues, Greg Rottman, ERDC (25 min)
  - Meet the Middle: Changing the Way America Builds, Jon Riley, NCMS (25 min)

12:00pm Networking Lunch  
**Afternoon Session Chair: Rupak Biswas**  
1:00pm **Technology Panel: Emerging and Potentially Disruptive Technologies: 3 Minute Technical Overviews, Panel Moderator: Earl Joseph**
  - HP Moonshot Update
  - Parallel Scientific
  - SGI, Eng Lim Goh
  - Dell, Tim Carroll
  - Convey, John Leidel
  - DDN, Jeff Denworth
  - Cray, Barry Bolding
  - CloudFuzion, Mike Duffy
  - Intel PHI, Stephen Wheat
  - Altair
  - ETI

2:00pm ORNL Industrial Partnership Project with Ford Motor Company: Automotive Large Scale Powertrain Cooling Optimization, Dr. Burkhard Hupertz, Ford (25 min)  
2:30pm Vendor Technology Update: Intel  
2:45pm Vendor Technology Update: ISVs and Using GPUs: Altair and ANSYS  
3:00pm Why HPCs Hate Biologists, and What We're Doing About It, Titus Brown, Michigan State University (25 min)  
3:25pm Break  
3:50pm IDC HPC Market Update, Earl Joseph, Steve Conway and Chirag Dekate (15 min)  
4:05pm NOAA HPC Site Update, Leslie Hart, NOAA (25 min)  
4:30pm HPC & Future Workforce Development: The Wheeling Program, Debra Goldfarb, Intel (15 min)  
4:45pm Update on HPC in the UK, Andy Jones, NAG (25 min)  
5:10pm Networking Break and Time for 1-on-1 Meetings and mid-range market BOF  
6:10pm Bus Leaves for the Reception and Special Dinner Event



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## Wednesday, September 19, 2012

- 7:15am Networking Breakfast
- 8:00am Meeting Starts
- Morning Session Chair: Merle Giles**
- 8:05am **Advances in Energy-Efficient Packaging/Cooling:**
- 8:05am Experience with Containerized HPC, Dick Boyd, University of Michigan (25 min)
- 8:30am Data Center Sustainability Energy + Carbon + Water, Nicolas Dube, The Green Grid, HP (25 min)
- 8:55am Panel: Vendor Technologies for Energy-Efficient Packaging/Cooling (10 minute summaries)
- IBM SuperMUC and iDataplex, Vinod Karmath
  - Cray, Barry Bolding
  - SGI, Eng Lim Goh
- 9:45am Design and Installation of Sequoia's 55PB Lustre+ZFS File System, Marc Stearman, LLNL (30min)
- 10:15am Vendor Technology Updates: HP
- 10:30am Break
- 11:00am **Technology Topic #2: Big Data and Analytics in HPC:** The National Library of Medicine's Visible Human Project, Brian Athey, University of Michigan (25 min)
- 11:30am The New NASA Earth Exchange (NEX) Data Access Facility, Tsengdar Lee, NASA (25 min)
- 12:00pm Networking Lunch
- Afternoon Session Chair: Steve Finn**
- 1:00pm **Special Keynote: Scalable Data Mining and Archiving in the Era of the Square Kilometre Array, the Square Kilometre Array Telescope Project,** Chris Mattmann, NASA/JPL (30 min)
- 1:30pm **Technology Topic #2: Big Data and Analytics in HPC:** Leveraging HPC and Enterprise Architectures for Large Scale Inline Transactional Analytics in Fraud Detection at PayPal, Arno Kolster, PayPal, an eBay Company (30 min)
- 2:00pm Baseline Configuration - Establishing Consistency Across HPC Centers, Jeff Graham, AFRL (30 min)
- 2:30pm Break
- 2:45pm **Big Data and Analytics Vendor Panel: How Vendors See Big Data Impacting the Market and Their Products/Services, Panel Moderator: Chirag Dekate**
- IBM/Platform, Rahit Valia
  - YarcData, Ramesh Menon
  - NetApp, Dave Ellis
  - DDN, Keith Miller
  - SGI, Eng Lim Goh
  - Dell, Tim Carroll
  - Altair, Ravi Kunju
  - AMD, Rick Indyke
  - Appro, Giri Chukkapalli
  - Panasas, Brent Welch
- 3:45pm What Industry Requires to Move Their Science and R&D Forward, Merle Giles, NCSA (25 min)
- 4:10pm Data Analysis and Visualization of Very Large Data, David Pugmire, ORNL (25 min)
- 4:35pm A Strategy for Exascale Computing, Dylan Stark and Kyle Wheeler, Sandia National Laboratories (25 min)
- 5:00pm Meeting Wrap-Up