



HPC User Forum Preliminary Agenda

76th HPC User Forum

March 30-April 1, 2020– Marriott at Forrestal Hotel, Princeton, New Jersey

Monday, March 30, 2020

- 5:00 PM Registration Starts
- 6:30 PM Welcome and Special Dinner Reception Event with a talk on History of the Princeton Plasma Physics Laboratory (PPPL): S. Cowley/M. Zarnstorff, PPPL

Tuesday, March 31, 2020

- 7:15 AM Networking Breakfast
- 8:00 AM Welcome and HPC Market Update: Paul Muzio, Rupak Biswas, Earl Joseph and Steve Conway

Morning Session Chair:

- 8:15 AM Update on the Exascale Computing Project, Lori Diachin
- 8:45 AM United Kingdom (UK) Exascale and the Catalyst UK Programme, Mark Parsons and Michele Weiland, Edinburgh Parallel Computing Centre
- 9:15 AM Vendor Technology Update
- 9:30 AM Stimulating the Innovation Potential of Small and Medium Enterprises – Fortissimo within EuroHPC, Bastian Koller, High Performance Computing Center - Stuttgart
- 10:00 AM Networking Break
- 10:30 AM Vendor Technology Update
- 10:45 AM HPC at Princeton University, Curt Hillegas, Princeton University
- 11:15 AM Update and Plans for the NERSC-9 Supercomputer ("Perlmutter"), Tina Declerck, National Energy Science Research Computing Center
- 11:45 AM HPC for Cancer Research, Jack Collins, National Cancer Institute
- 12:15 PM Networking Lunch

Afternoon Session Chair: Paul Muzio

SESSION ON HPC FOR FUSION ENERGY RESEARCH

- 1:15 PM How HPC Is Enabling Fusion and ITER Science, C. S. Chang, PPPL
- 1:45 PM Artificial Intelligence — An Exciting New Way To Speed Development of Fusion Energy, Michael Churchill, PPPL
- 2:15 PM Performance Portability on Various GPUs and CPU Machines Utilizing Kokkos, A. Scheinberg, PPPL
- 2:45 PM Status of the Exascale Computing Project on High-Fidelity Whole Device Modeling of Magnetically Confined Fusion Plasma, A. Bhattacharjee, PPPL
- 3:15 PM Networking Break
- 3:45 PM HPC and The Flatiron Institute/Simons Foundation, Ian Fisk
- 4:15 PM Data Management and Workflow Challenges for Exascale Seismology, Jeroen Tromp, Princeton University
- 5:00 PM Meeting Ends
- 5:30 PM Transportation to Special Dinner Event at the Gardens for Sculpture. (Buses depart hotel 5:30pm. Roam sculpture grounds 6:00-7:00pm. Dinner 7:00-9:00pm. Buses return to hotel 9:00pm)



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Wednesday, April 1, 2020

7:15 AM Networking Breakfast

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

Morning Session Chair:

8:15 AM Using HPC-enabled AI to Guide Investment Strategies for Finding and Funding Startups, Thomas Thurston, WR Hambrecht & Company

8:45 AM HPC Needs at JP Morgan Chase, Brad Spiers

9:15 AM Vendor Technology Update:

9:30 AM From Architecture Guided Applications to Application Guided Architectures, Gary Grider, Los Alamos National Laboratory

10:00 AM Networking Break

10:30 AM Proving History: The Role of Graph and Digital Ledger For Exascale AI and HPC, Arno Kolster and Ryan Quick, Providentia Worldwide, LLC

11:00 AM Exascale Machine Learning Technologies, Frank Alexander, Brookhaven National Laboratory

11:30 AM Vendor Technology Updates

12:00 PM Networking Lunch

Afternoon Session Chair:

1:00 PM Massive Scale Analytics for Real-World Applications, David Bader, New Jersey Institute of Technology

1:30 PM Panel Session: Innovative Technologies for HPC. Moderator: Earl Joseph, Hyperion Research

2:15 PM Vendor Technology Update:

2:30 PM Networking Break

3:00 PM Graph Analytics and AI, John Feo, Pacific Northwest National Laboratory

3:30 PM AI and Cyber Operations, John Quigg, Johns Hopkins University APL

4:00 PM How NOAA-GFDL Integrated and Optimized the GFSv15 System, Rusty Benson

4:30 PM Recent Research Findings on AI, Quantum Computing, Cloud: Hyperion Research Analysts

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