



# June 2022 ORNL 79<sup>th</sup> HPC User Forum Agenda

**Tuesday, June 21**

(Session Leader: Chair, Paul Muzio, HPC User Forum Steering Committee)

**7:30 – 8:30 am Breakfast and Badging**

**8:30 – 9:00 am Welcome and Meeting Overview**

- Welcome to ORNL, Jeff Nichols, ...
- Welcome & Logistics, Earl Joseph, Paul Muzio, Rupak Biswas, and Steve Conway
- HPC Market Update, Earl Joseph, Hyperion Research

**9:00 – 10:30 am What it Takes to Make Exascale Work**

- ORNL and the Future of HPC, Jeff Nichols, ORNL
- SC Perspective: What it takes to get to Exascale, John Young, DOE
- OLCF Update: What It Takes to Build a Leadership Class Supercomputer, Justin Whitt, ORNL

**10:30 am Break**

**10:45 – 12:00 pm What it Takes to Make Exascale Work (continued)**

- OLCF Update: Powering and Cooling an Exascale Computer, Bart Hammontree, ORNL
- Designing and Creating an Exascale System, HPE & AMD
- El Capitan: Preparing for The Exascale System, Terri Quinn, LLNL

**12:00 – 1:00 pm Lunch**

**1:00 – 2:30 pm How Leadership HPC Sites Can Help Industry**

- Exascale Use in Industry, Dave Kepczynski, GE
- HPC in Industry, Today and in the Exascale Era, David Martin, ANL
- HPC and Industry, a European Approach, Hervé Mouren, Teratec Managing Director
- HPC in Industry, Today and in the Exascale Era, Suzy Tichenor, ORNL

**2:30 – 2:45 pm Vendor Update**

**2:45 pm Break**

**3:00 – 5:30 pm What it Takes to Make Exascale Work (continued), ECP Updates, Moderated by Doug Kothe, ORNL**

- ECP Updates (application software, facility integration, performance portability, programming models for accelerators, etc.), Doug Kothe, ORNL
- Performance Portability for Exascale Systems, Thomas Evans, ORNL
- Application Performance Portability on CPUs and GPUs, JaeHyuk Kwack, ANL
- Fundamental Challenges Posed by GPU Accelerators for Scientific Libraries and Approaches Adopted in the Portable, Extensible Toolkit for Scientific Computation (PETSc) to address them, Richard Tran Mills, ANL
- Update on HPC at GFDL, Seth Underwood, GFDL

**5:30 – 6:00 pm The History of ORNL, Dave Keim, Director of Communications for ORNL**

**6:00 – 6:30 pm Tour of Frontier and Summit Supercomputers**

**6:30 – 8:30 pm Dinner**

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## Wednesday, June 22

(Session Leader: Douglas Kothe, HPC User Forum Steering Committee and ORNL)

**7:30 – 8:30 am Breakfast and Badging**

**8:25 – 8:30 am Welcome and Logistics, Earl Joseph**

**8:30 – 9:00 am HPC Future Directions at NASA and Work Force Needs, Tsengdar Lee, NASA**

**9:00 – 10:00 am Exascale & Leadership Computing Updates**

- EuroHPC Update, Leonardo Flores, European Commission
- Using HPC to Support NASA's Overall Mission, Piyush Mehrotra, NASA Ames

**10:00 am Break**

**10:15 – 11:45 am Exascale & Leadership Computing Updates**

- Future of HPC; RIKEN Working with Sites Around World, Mitsuhsa Sato, Riken
- DoD HPC Modernization Program (HPCMP), Benjamin Parsons, HPCMP
- Argonne's Exascale-Era Systems, Kalyan Kumaran, ANL
- NERSC Update: Perlmutter, Superfacility and Onward to NERSC 10, Richard Gerber, NERSC

**11:45 – 12:00 pm Tachyum Processor Update, Radoslav Danilak, Tachyum**

**12:00 – 1:00 pm Lunch**

**1:00 – 2:45 pm Quantum Computing Directions & Trends, Moderated by Travis Humble**

- Travis Humble, ORNL
- Bob Sorensen, Hyperion Research
- Eleanor Rieffel, NASA
- Panel Discussion on QC

**2:45 – 3:00 pm How Clouds Can Help HPC at US National Labs, AWS**

**3:00 pm Break**

**3:30 – 4:00 pm The "S" in HPC Stands for Security, Ryan Adamson, ORNL**

**4:00 – 4:30 pm Some Considerations for Future Architectures, Dimitri Kusnezov**

**4:30 – 5:00 pm Post-exascale Directions: The Next Five Years, Horst Simon**

**5:00 – 5:15 pm Invitations to Future HPC User Forum Meetings in Europe**

**5:15 – 5:30 pm Conclusions, Paul Muzio, Steve Conway and Earl Joseph**

**5:30 – 6:30 pm Tour of the Spallation Neutron Source (<https://sns.gov/virtual-tour>)**

**6:30 – 8:30 pm Dinner**

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