

September 6th & 7th Tucson 83rd HPC User Forum Agenda

Wednesday, September 6th

7:15 - 8:00 am Breakfast and Badging

8:00 - 8:15 am Welcome and Meeting Overview

- Welcome & Logistics, Rupak Biswas and Earl Joseph
- HPC Market Update, Earl Joseph

(Session Leader: Rupak Biswas, NASA)

8:15 - 11:45 am New Advances in Using HPC & AI Combined: Examples and Successes Using AI, Generative AI and Large Language Models

- 8:15-8:40 am Generative AI Design of Peptide Therapeutics, Nicholas Nystrom, Peptilogs
- 8:40-9:05 am HPC+AI for Earth Sciences at NERSC, Peter Harrington, LBL
- 9:05-9:35 am Artificial Intelligence: Disrupting Law, Gary Marchant, Arizona State University
- 9:35-9:50 am New Research on How LLMs are Evolving, Bob Sorensen, Hyperion Research
- *Break at 9:50 to 10:10 am*
- 10:10-10:35 am The Use of AI and HPC in Drug Design, Andrey Shinkarev, AbbVie Inc.
- 10:35-11:00 am Diamond AI: Engineering Safe and Power Efficient AI By Using Extremely Long Data Words, David Sherwood, Cognitive Science & Solutions
- 11:00-11:15 am How Google is Creating Innovative AI & HPC Solutions, Bill Magro, Google

11:15 - 11:45 am Reflections on the Exascale Era, Doug Kothe, SNL

11:45 - 12:00 pm Vendor Update: Bill Mannel, HPE

12:00 - 1:00 pm Lunch

(Session Leader: David Martin, ANL)

1:00 - 2:15 pm HPC Site Updates

- 1:00-1:25 pm DoD Modernization Update, Lloyd Slonaker, AFRL
- 1:25-1:50 pm LANL Platform Planning and Update, Gary Grider, LANL
- 1:50-2:15 pm ECP Update and Future Sustainability Efforts, Mike Heroux, SNL

2:15 - 2:30 pm Vendor Update: Stephen Sofhauser, Dell Technologies

2:30 - 5:30 pm Sustainability and Energy Efficiency in Leadership-scale Data Centers
(Moderator: Suzy Tichenor, ORNL)

- Norm Bourassa, LBNL
- Dan Stanzione, TACC
- Piyush Mehrotra, NASA
- *Break at 3:45 - 4:00 pm*
- Wesley Dye, Switch
- Simon Burbidge, DiRAC
- Ti Leggett, ANL
- Panel Discussion

5:30 - 6:00 pm Break

6:00 - 8:30 pm Special Dinner Event and Presentation: *Artificial Intelligence in Space and the Hunt for Life Beyond Earth*, Steve Chien, JPL/NASA [location: Loews Corral BBQ]

Thank you to our sponsors!

HPE		Cornelis Networks	/	DDN		Dell Technologies		
IBM		Intel		Lenovo		Panasas		UnifabriX

September 6th & 7th Tucson

83rd HPC User Forum Agenda

Thursday, September 7th

7:15 - 8:00 am Breakfast and Badging

8:00 - 8:05 am Welcome and Meeting Logistics

(Session Leader: Piyush Mehrotra, NASA)

8:05 - 11:00 am Leadership Computing & Exascale Updates: Europe and the US

- 8:05-8:35 am Update on the Aurora Supercomputer, Ti Leggett, ANL
- 8:35-9:05 am Update on DOE NNSA Leadership Computing, Simon Hammond, NNSA
- 9:05-9:35 am Update on Leadership Computing in Europe, Leonardo Flores, EU (video)
- 9:35-9:50 am SiPearl European Processor Update, Craig Prunty, SiPearl
- *Break at 9:50 – 10:05 am*
- 10:05 -10:35 am Perlmutter and the Next Procurement NERSC-10, Nick Wright, LBL
- 10:35-11:00 am DiRAC and UK Updates, Simon Burbidge, DiRAC

11:00 - 11:45 am Innovative Technologies Panel: Cornelis Networks, DDN, IBM, Intel, Panasas, Penguin Solutions, UnifabriX

11:45 - 12:00 pm Vendor Update: Scott Tease, Lenovo

12:00 - 1:00 pm Lunch

(Session Leader: Mike Bernhardt, ECP, Team Libra)

1:00 - 1:15 pm Research Perspectives on Sustainability, Mark Nossokoff, Hyperion Research

1:15 - 1:30 pm Sustainable HPC and Reducing the IT Carbon Footprint, Scott Tease, Lenovo

1:30 - 3:00 pm The DOE HPC4Energy Innovations Program and Industrial Partnerships
(moderator: Aaron Fisher, LLNL)

- HPC4EI: Bringing National Lab Scale HPC to US Industry, Aaron Fisher, LLNL
- HPC Simulations of Interface Resolved Multiphase Flows in a Bubble Column Reactor, Ramanan Sankaran, ORNL, Partner: Shell
- Partially Saturated Flow through Deformable Porous Media, Troy Shilt, SNL, Partner: Procter & Gamble
- Lighting a Match in a Fire Extinguisher: Simulating Oxycombustion in Super-critical CO₂ for Carbon-neutral Power Generation, Michael Martin and Shashank Yellapantula, NREL, Partner: 8 Rivers

3:00 - 3:15 pm Break

3:15 - 4:15 pm How Cloud Computing is Adding New Capabilities to HPC and AI: How CSPs are Addressing Sustainability and How They are Supporting New AI Applications

- 3:15-3:30 pm Heidi Poxon, AWS
- 3:30-3:45 pm Andy Jones, Microsoft
- 3:45-4:00 pm Bill Mannel, HPE
- 4:00-4:15 pm Bill Magro, Google

4:15 - 4:30 pm Vendor Update: Update on Grace and Hopper, Dion Harris, Nvidia

4:30 - 5:25 pm HPC Site Updates

- 4:30-4:50 pm Homeland Security Site Update, Amy Henninger, DHS
- 4:50-5:05 pm Update on HPC at KAUST & the Middle East, Jysoo Lee, KAUST (video)
- 5:05-5:25 pm How HPC and High-Fidelity Modeling with the ExaWind Codes Can Advance Wind Energy, Shashank Yellapantula, NREL

5:25 - 5:30 pm Conclusions, Rupak Biswas and Earl Joseph

5:30 - 6:00 pm Break

6:00 - 8:30 pm Special Dinner Event: *Large Language Models, Weather Questions, and Supercomputing in 2050*, Andrew Jones, Microsoft [location: Loews Ventana Room]

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		IBM		Intel		Lenovo
						Panasas
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