



September 4th & 5th Argonne, IL 85th HPC/AI User Forum Agenda



Argonne National Laboratory, Building 240, TCS Conference Center,
Room 1416, 9700 S Cass Ave, Lemont, IL 60439

Wednesday, September 4th

7:15 – 8:00 am Breakfast and Badging

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

- Safety Minute, David Martin, ANL
- Welcome & Logistics, Piyush Mehrotra and Earl Joseph
- Changes in HPC and Advanced AI, Earl Joseph, Hyperion Research

(Session Leader: Piyush Mehrotra, Chairman, HPC User Forum Steering Committee)

8:30 – 9:00 am Welcome to ANL and ANL Update, Rick Stevens, ANL

9:00 – 9:30 am The Future of AI, Rick Stevens, ANL

9:30 – 11:45 am Real-world Large Scale AI Use Cases and Examples

- **AuroraGPT**, Sam Foreman, ANL
- **Brain Reconstruction**, Tom Uram, ANL
- **AI in Medicine**, Arvind Ramanathan, ANL
- *Break: 10:15 – 10:30 am*
- **AI for Controlling Things** (e.g., reactors), Chris Ritter, Idaho National Laboratory
- **AI in Medicine** (Part Two), Heidi Hanson, ORNL
- **NVIDIA Earth-2**, Karthik Kashinath, NVIDIA

11:45 – 12:00 pm Vendor Update: Mike Woodacre, HPE

12:00 – 1:00 pm Lunch

(Session Leader: Brendan McGinty, NCSA/UIUC)

1:00 – 1:30 pm AI in Healthcare, David Holmes, Mayo Clinic

1:30 – 2:00 pm AI Technologies and Innovations Showcase (part 1): SambaNova (Jennifer Glore), IBM (Brett Coffman), FedData (David Haglin), Intel (Cameron Chehreh)

2:00 – 2:30 pm The FASST Initiative, Rick Stevens, ANL

2:30 – 2:45 pm Break

2:45 – 3:00 pm Vendor Update: Zacary Farsolas, SuperMicro

3:00 – 3:30 pm Scientific AI Efforts at NERSC, Peter Harrington, NERSC

3:30 – 4:00 pm Parting the (Azure) Clouds: Separating the Myths and Realities of Cloud-based Supercomputing, Mike Ringenburg, Microsoft Azure HPC & AI

4:00 – 4:30 pm DoD Mod Update, Lloyd Slonaker, DoD HPCMP

4:30 – 5:00 pm ORNL Update, Nick Hagerty, ORNL

5:00 – 6:00 pm Break

6:00 – 8:30 pm Special Dinner Presentation: The History of Computing at Argonne by Lois Curfman McInnes, ANL. *Tours of Aurora, ALCF machine room, and ALCF visualization laboratory will be available during the reception.*

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Thursday, September 5th

7:15 – 8:00 am **Breakfast and Badging**

8:00 – 8:05 am **Welcome and Meeting Logistics & Safety Minute, David Martin, ANL**
(*Session Leader: Simon Burbidge, DiRAC*)

8:05 – 9:40 am **Real-world AI Use Cases and Plans in Industry: Presentations**

- **Pharma**, Andrey Shinkarev, AbbVie Intelligence (AI)
- **Oil and Gas**, Yue Hu and Max Ronda, BP
- **Aerospace**, Joerg Gablonsky, The Boeing Company
- **Energy**, Chuck Orłowski and Art Grimshaw, GE Vernova

9:40 – 9:55 am **Break**

9:55 – 10:10 am **Using NVIDIA to Build Large Scale AI Systems**, Karthik Kashinath, NVIDIA

10:10 – 10:30 am **New Research Findings on AI**, Bob Sorensen, Hyperion Research

10:30 – 10:45 am **Using Generative AI to Drive HPC Graph Workloads on Large SMP Systems**,
David Haglin, Trovares

10:45 – 11:00 am **Benchmark of Real-world AI Inferencing Workloads on Intel Gaudi2 AI
Accelerator and an Example of Multi-modal AI**, Gianluca Longoni, FedData
Technology Solutions

11:00 – 11:30 am **SNL Update: AI Use Cases from a Multi-mission Laboratory**, Kevin R. Dixon,
SNL

11:30 – 11:45 am **Vendor Update**: Marc Fisher, Lenovo

11:45 – 12:15 pm **Lumi Update**, Kimmo Koski, CSC – IT Center for Science

12:15 – 1:15 pm **Lunch**

(*Session Leader: David Martin, ANL*)

1:15 – 3:00 pm **Real-world Large Scale AI Use Cases and Examples (continued)**

- **AI in Medicine "Some of the biology (non-biomedicine)"**, Nicholas Chia, ANL
- **Surrogate Models in Climate & Weather**, Rao Kotamarthi, ANL
- **Programming AI (e.g., OpenAI collaborations)**, Brian Spears, LLNL
- **AI for Controlling Things (e.g., reactors)**, Rick Vilim, ANL
- **Deep Learning for Time Series Forecasting and Classification**, Andrew Siegel, ANL

3:00 – 3:15 pm **Vendor Update**: Forrest Burt, CIQ and Devin Jensen, Montis

3:15 – 3:30 pm **Break**

3:30 – 3:45 pm **AI Technologies and Innovations Showcase (part 2)**: Linaro (Beau Paisley),
WEKA (Bob Vassar), QuEra (Yuval Boger)

3:45 – 4:00 pm **Vendor Update**: Performance in AI and the Future, James McKenna, DDN

4:00 – 5:20 pm **Integrated Resource Infrastructures**, Moderator: Tom Uram, ANL/APS

- Mathew Cherukara, ANL
- Donovan Mathias, NASA Advanced Supercomputing Division
- David Schissel, DIII-D National Fusion Facility
- Discussion

5:20 – 5:30 pm **Conclusions**, Piyush Mehrotra and Earl Joseph

5:30 – 6:00 pm **Break**

6:00 – 8:30 pm **Special Dinner Presentation and Tour. An Overview of the Advanced Photon
Source** by Mathew Cherukara, ANL. *Tours of the Advanced Photon Source will be
available during the reception.*

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