SOS 28 Workshop

Sandia National Laboratories, Oak Ridge National Laboratory and Swiss National Supercomputing Centre

March 23 – 26, 2026

Website: sos-28.highspeedcomputing.org

WIfi: **Network:** Hilton Honors Meeting
Password: SOS28SBH

"Waves of Change: Surfing the Innovation Pipeline"

Monday, March 23 – 26, 2026

6:00 – 9:00 pm	Registration and Welcome Reception (**Rodney's**)

**Dinner on your own/heavy appetizers will be served*

Tuesday, March 24, 2026

7:00 – 7:50 am	Breakfast (**Sierra Madre**)	
7:50 – 8:00 am	Ron Brightwell, SNL	Welcome and Overview

All Sessions will be in **Santa Barbara Ballroom*

Session I: AI for Science - Charting the Next Frontier
Session Chair: Stefano Schuppli (CSCS)

8:00 – 10:00 am	Matthieu Dorier, ANL	Rethinking Ten Years of HPC Data Service Development in the Age of AI
	Jonathan Coles, CSCS	Training Apertus Swiss LLMs on Alps: The Problems Nobody Warns You About and How we Fixed Them
	Jens Domke, RIKEN	RiVault: RIKEN's Secure AI Infrastructure for Scientific Computing - Lessons Learned from our Spring-8 Demo and the Japanese AI Jam
	Brian Van Essen, LLNL	Agentic AI Workflows for the domain Scientist
	Joshua Tan, Public AI	What is Public AI?
10:00 – 10:30 am	Break (**Foyer**)	

Session II: Open Source Hardware Design
Session Chair: Jim Ang (PNNL)

10:30 – 12:30 pm	Wilson Snyder, Marvell	Open Hardware Enabled by Verilator's Open Simulation
	Andrew Kahng, UCSD	The OpenROAD Project and Ecosystem
	Antonino Tumeo, PNNL	Bridging Python to Silicon Smartly: The SODA Toolchain
	Gwen Voskuilen, SNL	Advancing Hardware Designs from Vision to Verilog with SST
12:30 – 1:30 pm	Lunch (**Sierra Madre**)	

Session III: Autonomous Labs
Session Chair: Ben Mintz (ORNL)

1:30 – 3:30 pm	Ryan Coffee, SLAC	Live Inference Streaming for Dynamic Reactor Control Systems
	Paramvir Dehal, LBNL	Agentic AI Co-Scientists to Coordinate Hypothesis Generation, Validation and Testing with the OPAL Autonomous Lab
	Michela Taufer, University of Tennessee, Knoxville	From Beamtime to Insight: An Open NSDF Pattern for Real-Time Adaptive Deformation Mapping
	Draguna Vrabie, PNNL	Autonomous Scientific Discovery with AI and Robotics
	Rafael Ferreira Da Silva, ORNL	Evolving Scientific Workflows Toward Autonomous Discovery Through Agentic AI and Multi-Agent Coordination

3:30 – 8:30 pm	Dinner on your own	Informal Discussions and Side Meetings

8:30 – 10:30 pm	Networking Reception (**Reagan Room**)

Wednesday, March 25, 2026

7:00 – 8:00 am	Breakfast (**Sierra Madre**)	

Session IV: Is *CCL the New MPI?
Session Chair: Jonathan Coles (CSCS)

8:00 – 10:00 am	Shelby Lockhart, AMD	MPI, *CCL, and *SHMEM: Converging Paths in GPU Communication Libraries
	Forrest Glines, NVIDIA	Is *CCL the new MPI?
	James (Trey) White, ORNL	Is MPI the New *CCL?
	Naveen Ravi, HPE	CCLs Are Not Enough: Toward a Unified AI Communication Standard
10:00 – 10:30 am	Break (**Foyer**)	

Session V: Cloud and HPC
Session Chair: Awais Khan (ORNL)

10:30 – 12:30 pm	Wahid Bhimji, LBNL	Converging HPC-Cloud Infrastructure For Scientific AI Platforms
	Kevin Pedretti, SNL	Genesis Mission: Building an AI Platform for Accelerating Science and Engineering
	Dana Grisham, SNL	Mind the Gap: Data Architectures for Hybrid Environments
	Richard Shane Canon, LBNL	From Magellan to Genesis: Past, Present and Future of Clouds for Science

12:30 – 6:00 pm	Lunch on your own	Informal Discussions and Side Meetings

6:00 – 6:30 pm	Hospitality (**Sierra Madre**)	
6:30 – 7:30 pm	Banquet Dinner (**Sierra Madre**)	
7:30 – 9:00 pm	Networking Reception	

Thursday, March 26, 2026

7:00 – 8:00 am	Breakfast (**Sierra Madre**)	

Session VI: Performance Variability
Session Chair: Jack Lange (ORNL)

8:00 – 10:00 am	Edgar Leon, LLNL	Taming Performance Variability at Exascale: Mitigating OS Noise on El Capitan
	Barret Rhoden, Google	More Isolation, Worse Performance: An FTQ Mystery on Sapphire Rapids
	Matt Sinclair, Univ of Wisconsin	Characterizing and Mitigating Performance Variability in Accelerator-Rich Systems
	Tirthak Patel, Rice University	Toward Addressing the Variability Problem in Quantum Clouds
10:00 – 10:30 am	Break and Group Photo (TBD)	

Session VII: Quantum Computing
Session Chair: Tom Beck (ORNL)

10:30 – 12:30 pm	Chris Zimmer, ORNL	QSC QHPC Architectures: Investigating the Potential of Integration Between Quantum and High-Performance Computing
	Robin Blume-Kohout, SNL	Pigeons vs NVQLink: When Does Quantum Computation Need Tight Coupling?
	Yuri Alexeev, NVIDIA	Accelerated Quantum Supercomputing
	Amir Shehata, ORNL	OpenQSE: Building a Common Software Stack for Quantum HPC Integration

12:30 – 1:30 pm	Lunch (**Sierra Madre**)	

Session VII: Crystal Ball
Session Chairs: Ron Brightwell, SNL

1:30 – 1:40 pm	Joost Vandevondele, CSCS
1:40 – 1:50 pm	Ramanan Sankaran, ORNL
1:50 – 2:00 pm	Doug Kothe, SNL
2:00 pm	Announcement of SOS 29

Adjourn