Richard Gerber, NERSC

Bio:

Richard Gerber is the High Performance Computing Department Head at the National Energy Research Scientific Computing Center (NERSC), where he also serves as Senior Science Advisor. NERSC is the mission HPC center for the U.S. Department of Energy Office of Science and provides supercomputing and large-scale data systems and services to more than 7,000 scientists in the U.S. and worldwide.

Richard has worked with leading-edge High Performance Computing systems for more than 30 years, including Crays at the National Center for Supercomputing Applications (NCSA) while doing graduate work in computational astrophysics in the 1980s, the Connection Machine while a National Research Council Postdoctoral Fellow at NASA-Ames Research Center, and many generations of distributed-memory parallel computers in his 23 years at NERSC. Richard holds a B.S. in Physics from the University of Florida, and M.S. and Ph.D. degrees in Physics from the University of Illinois at Urbana-Champaign.

At NERSC Richard has been worked to evaluate the HPC needs of Office of Science research communities and then provide scalable resources to satisfy those needs. As HPC Department Head he oversees the Advanced Technologies, Application Performance, and User Engagement Groups at NERSC. As Senior Science Advisor he coordinates science outreach and engagement efforts and helps communicate the value of HPC to science.

Abstract:

**NERSC 9: A Pre-Exascale System for Simulation, Data, and Learning**

NERSC's next supercomputer, named after Nobel Prize winner Saul Perlmutter, will be NERSC's first system designed explicitly to support simulation, learning, and data analysis. Perlmutter, to be delivered in late 2020, will have 3-4 times the capability of NERSC's Cori system and take the Department of Energy's Office of Science HPC community on its next step toward exascale computing. Perlmutter will be a Cray system with both AMD CPU-based nodes and nodes accelerated with NVIDIA GPUs, connected by Cray's "Slingshot" high speed network that will support compatibility with ethernet networks, greatly facilitating connectivity and data transfer outside the system. To further enhance its data capabilities, Perlmutter will have a single-tier all-flash HPC file system. This talk will describe the system, its capabilities, and NERSC's plans for enabling simulation, data analysis, and machine learning applications to use it efficiently and effectively.