NERSC User's Group (NUG) Community Call


20 June, 2024

Today's Pipeline

- Interactive - please participate!
  - **NERSC User Slack** (link in chat)
  - **#webinars** channel
- Agenda:
  - General NERSC Updates/Announcements
  - Topic(s) of the Day:
    - Mukul Dave, PhD (NERSC)
      - Accelerating Wind Energy Simulations by Reducing Communication Costs
      - Enabling CUDA-aware MPI on Perlmutter to Accelerate Scientific Applications

Announcements/Updates/Calls
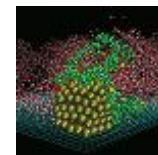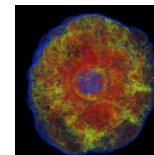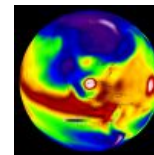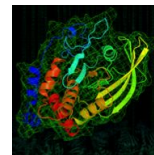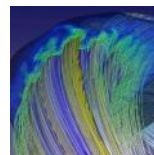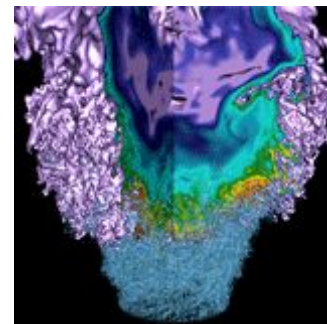
Announcements - NERSC Updates

- **Big Jobs Discount, Retroactive to January, Now on Perlmutter**
  - In the NERSC 2024 allocation year, GPU jobs run in the regular queue using 128 nodes or more and CPU jobs run in the regular queue using 256 nodes or more receive a "big job" discount of 50% cost reduction.
- **NERSC@50-Save the Date: Celebrate 50 Years of NERSC with Us October 22-24**
  - In honor of NERSC's fiftieth anniversary, we are planning an exciting program of anniversary-related events culminating with the annual NERSC User Group meeting, to be held October 22-24, 2024
- **Introducing the NERSC 50th Anniversary Science as Art Competition**
  - Do you have a cool animation or still image that was generated from calculations performed at NERSC? Consider entering it into the NERSC Science as Art competition, which is open to any NERSC user (past or present) or member of a science team that used NERSC in their research.
- **Join NERSC for a 50th Anniversary Seminar Series, Continuing June 24**
  - NERSC is presenting a seminar series featuring speakers reflecting on the center's half-century of advancing HPC innovation and science while looking to the future.

Reminder: Please see the Weekly Email for Links!

Announcements - Trainings

- **Join NERSC for Perlmutter Office Hours in June & July**
  - NERSC is holding a series of online office hours, to which users are invited to bring their questions and their own applications to get one-on-one help. All office hours will be held online only. Zoom coordinates are accessible from the event webpage (login required).
- **Join NERSC for May-October OpenMP Training Series**
  - The OpenMP API is the de facto standard for writing parallel applications for shared memory computers supported by multiple scientific compilers on CPU and GPU architectures. MPI+OpenMP for CPUs and OpenMP device offload for GPUs are recommended portable programming models on Perlmutter. The next (third) session, on optimization for NUMA and SIMD, is planned for Monday, July 10.
- **Crash Course in Supercomputing, June 28**
  - This hybrid training, held as part of the 2024 Berkeley Lab Computational Sciences Summer Student Program, is also open to NERSC, OLCF, and ALCF users. This training is geared towards novice parallel programmers with prior programming experience in a compiled programming language.
- **Register Today for NCAR's WRF Tutorial, July 15-19**
  - NCAR will hold an online Weather Research and Forecasting (WRF) Tutorial July 15-19, 2024.

**Reminder: Please see the Weekly Email for Links!**

Announcements - Calls for Participation

- **Register Today for August LLNL HPC Innovation Center Tutorials**
  - The High Performance Computing Innovation Center at Lawrence Livermore National Laboratory is holding a series of tutorials on using some of its open-source HPC software products in August. All are welcome to join -- no previous experience is necessary. Topics of potential interest to NERSC users include Spack (building software packages), RAJA (GPU programming environment), and Flux (a workflow scheduler).

- **International Workshop on Performance, Portability, and Productivity in HPC Call for Papers Now Open!**
  - The 2024 International Workshop on Performance, Portability, and Productivity in HPC will be held on Monday, November 18, 2024, in conjunction with SC24 in Atlanta, Georgia.

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NUG Science Talk Presentations
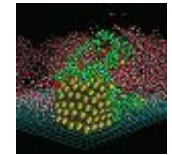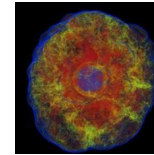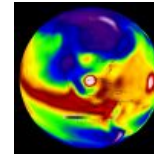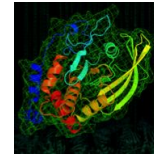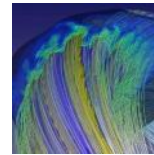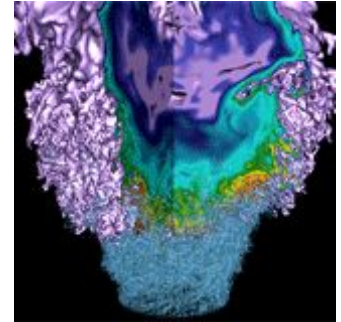
Mukul Dave, PhD
Postdoctoral Fellow @ NERSC

Coming up

Upcoming topics:

- Security @ NERSC
- Community needs/ideas (e.g. new groups/topics, "get to know" <blank>, new docs/training options, career?)
- Other topic suggestions/requests?

We'd love to hear more lightning talks **from NERSC users** about the research you use NERSC for!

Nominate a topic at: https://forms.gle/WjYx7zV7SAz2CaYz7

Science Highlights Submission: https://docs.google.com/forms/d/e/1FAIpQLScP4bRCtcde43nqUx4Z_sz780G9HsXtpecQ_qIPKvGafDVVKQ/viewform

Lightning Talks

Highlights

Until Next Time!

Thank You