

# Update on NUGEX activities and achievements

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# NERSC User Group Executive Committee

## Voice of the user community to NERSC

- ▶ Oversees NUG activities
  - ▶ monthly NUG Webinars
  - ▶ annual NUG meeting
  - ▶ ...
- ▶ Currently 22 members (according to NERSC website)
  - ▶ representative of NERSC user base
- ▶ Members serve for 3 year terms
  - ▶ no term limit (as far as I know)
- ▶ Monthly meeting
  - ▶ first Friday of the month, up to an hour
  - ▶ typical participation: about 10 NUGEX members, plus NERSC staff participants
- ▶ Additional meetings as needed
  - ▶ planning for the annual NUG meeting

# NUGEX membership

- ▶ Members serve for 3 year terms
  - ▶ current members on NERSC website
  - ▶ each year 1/3 steps down
- ▶ Over past decades
  - ▶ annual election for 1/3 of NUGEX
  - ▶ designated number of members for each DOE science domain
  - ▶ in addition, a few 'at large' members
  - ▶ election participation low: tell your collaborators to vote for you, and you'll be voted in
- ▶ This year
  - ▶ solicitation of nominations for NUGEX
  - ▶ selection made by NERSC staff based on DOE science domain, experience, career path, . . .
  - ▶ more on this by Steve Leak (?)

The screenshot shows the NUGEX website interface. At the top, there is a navigation bar with links for HOME, ABOUT, SCIENCE, SYSTEMS, FOR USERS, NEWS, R & D, EVENTS, and LIVE STATUS. Below this, the main content area is titled "NUG EXECUTIVE COMMITTEE (NUGEX)". A sub-header reads "Home - For Users - NERSC Users Group - NUGEX".

The main text states: "NUGEX is the voice of the user community to NERSC and DOE. While all NUG events are open to all NERSC users, NUG members regularly participate in the monthly teleconferences and the annual face-to-face meeting. NUGEX is consulted on NERSC policy issues, e.g., budget configurations, disk quotas, services and training offerings. Members of NUGEX also evaluate nominations for the NERSC Achievement Award and administrators to the NERSC High Impact Science at Scale program. NUGEX members serve for three year terms."

Below this is a section titled "Current Members" which contains a table with the following columns: Name, Institution, Email Address, DOE Office, Term Expires, and Pfs's Project Title.

Name	Institution	Email Address	DOE Office	Term Expires	Pfs's Project Title
Sayon Ghosh	FNRL		ASCR	Dec 2023	ExoGraph: Graph and Combinatorial M for Enabling Exascale Applications
Sarav Sreepathi	Oak Ridge National Lab			Dec 2023	Energy Exascale Earth System Modeling (E3SM)
Alicia Clum	Joint Genome Institute		BSR	Dec 2022	Joint Genome Institute's Pungal Program (Assembly)
Forrest Hoffman	Oak Ridge National Lab			Dec 2022	Reducing Uncertainty in Biogeochemical Interactions through Typewords and Computation (PUBSCCO)
Kaush Salaguchi	FNRL			Dec 2023	Water Cycle and Climate Extremes Modeling (WACCEM)
Alexander Dunn	Berkeley Lab		BSG	Dec 2022	Data mining discovery of thermoelectric inverse band structure design principles
Matthew Hurton	Berkeley Lab			Dec 2023	The Materials Genome
Ranesh Radhakrishnan	Argonne National Lab			Dec 2023	Exascale Proxy Application Project
Clare Saunders	California Institute of Technology			Dec 2024	Computation of Vibrational and Electronic Excitations in Materials
Narman Sran	Argonne National Lab			Dec 2024	
Alexander Rakowski	Berkeley Lab			Dec 2024	National Center for Electron Microscopy
Emily Bell	General Atomics		FES	Dec 2024	Plasma Edge Simulation Laboratory
John Wright	MIT			Dec 2023	Analysis for the SPARC magnetic fusion experiment
Dirk Hufnagel	Fermi National Accelerator Laboratory		HCP	Dec 2024	Particle Physics with CMS at the LHC
Kish Dasu	UCB			Dec 2024	Machine Learning for Classification, Regression, Generation, and Anomaly Detection in Jet Physics
Balint Joo	Jefferson Lab		NP	Dec 2020	Resonance Properties in the Decay Sign of Exotic Mesons from Quantum Chromodynamics
Alexei Bazavov	Michigan State University			Dec 2024	QCD Thermodynamics at High Temperature
David Lawrence	Jefferson Lab			Dec 2022	Analysis and Simulation for the GlueX
Rob Egan	Joint Genome Institute		At Large	Dec 2022	Joint Genome Institute - Production Sequencing and Genomics
Jerry Jenkins	Hudson/Alpha Institute for Biotechnology			Dec 2022	Joint Genome Institute - Production Sequencing and Genomics
Paier Mats	Iowa State University	pmats@iastate.edu		Dec 2024	Structure and Reaction of Neutrons in Nuclei
Angelo Rossi	University of Connecticut			Dec 2022	The Interaction Between Theory and Experiment: Computational Chemistry Workshops and Courses

# What does NUGEX do?

Monthly meetings with NERSC staff on

- ▶ Topics for monthly NUG meeting
- ▶ Planning of NUG annual meeting, starting about 6 months before meeting
  - ▶ suitable dates; virtual, in person, or hybrid?
  - ▶ format and topics; identify potential speakers

feedback is welcome for next year's meeting!

- ▶ Annual user survey
- ▶ Machine status, updates, and plans
  - ▶ computational resources
  - ▶ data storage and access
- ▶ User Education and Engagement
  - ▶ training workshops
  - ▶ how can we improve user engagement?

# Improving User Engagement

- ▶ NERSC has over 8,000 users
  - ▶ Broad background
  - ▶ Lot of knowledge and experience
  - ▶ Wide range of HPC experience and needs

How can the NERSC user community benefit from the combined knowledge and experience of all these users?

- ▶ Brainstorming sessions within NUGEX
  - ▶ What could a community of a few thousand NERSC users do that would be helpful to my work or professional development?
  - ▶ What do I already (intend to) do that, in addition to supporting my own goals, could help some other NERSC users in meeting theirs?

# Outcome of Brainstorming (not a complete list)

- ▶ Topic-based NUG subgroups with supporting infrastructure, organized by e.g. science domain, programming model, language, application, ...
  - ▶ Slack channels
  - ▶ Wikis or docs.nersc.gov sections
  - ▶ Virtual meetings (until we're zoomed-out ...)
- ▶ Searchable repository, open for user contributions
  - ▶ job scripts and examples
- ▶ Searchable database of users and their expertise
- ▶ Challenges
  - ▶ How to reach both users who would benefit and users who can (and are willing to) contribute?
  - ▶ Keeping information up-to-date and delete obsolete and out-dated information
  - ▶ Not all user contributions follow 'best practices' ... who's going to vet users / user contributions?

# Contribute to NERSC Documentation

NERSC

NERSC Documentation

Search

GitLab/NERSC/docs  
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## NERSC Documentation

Home

Getting Started

Tutorials

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Development >

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Acronyms

[Contributed Tips and Tricks](#)

Current Known Issues

## Tips and Tricks

This page is for tips contributed by NERSC users, which may be moved or copied in time to appropriate locations elsewhere in this documentation. If you have an addition to contribute to <http://docs.nersc.gov> but are not sure where it should go, this is a good page to make a merge request to.

A guide for contributors is at <https://gitlab.com/NERSC/nersc.gitlab.io/blob/main/CONTRIBUTING.md>.

# NERSC Users SLACK

- ▶ Not new in 2022, but has become a major resource of information
  - ▶ pro: quick feedback
  - ▶ con: not easily searchable
- ▶ More than 1300 users, i.e. about 15% of NERSC users
- ▶ More than 40 channels, covering a wide range of topics
- ▶ Most popular channels
  - ▶ # general and # watercooler, both with more than 1,000 members
  - ▶ # perlmutter and # machine-learning, with just over 200 members
- ▶ Nine channels with about 100 to 200 members
- ▶ Some channels may be obsolete
  - ▶ a few are archived
  - ▶ at least one has not been used in two years (# nug2020)
- ▶ Extremely useful, with often immediate feedback
  - ▶ I often check on slack, before opening a ticket



# SIG: Special Interest Groups

- ▶ Not new in 2022, but may need to be revamped?
- ▶ SIG for Experimental Facility Users
  - ▶ Formed in 2020?
  - ▶ Still active? (is listed on NERSC website)
- ▶ SIG for Weather Research and Forecasting
  - ▶ Formed in spring 2022
  - ▶ See Koichi Sakaguchi's talk earlier today
  - ▶ Not yet listed on NERSC website
- ▶ Let NUGEX and/or NERSC User Engagement Group know if you are interested in forming a Special Interest Group

# Monthly NUG Webinars

- ▶ Format:
  - ▶ open discussion
    - ▶ successes
    - ▶ 'today I learned' stories
  - ▶ announcements from NERSC
  - ▶ main presentation
  - ▶ requests for nominations for future presentations
- ▶ Covered a range of topics
- ▶ Typically of the order of 50 attendees
- ▶ Recordings available

## Monthly NUG Webinars

Sept 15, 2022 - How to write a good ticket

Aug 18, 2022 - ERCAP

July 21, 2022 - Scientific Facilities Workflows

June 16, 2022 - Managing and Publishing Data at NERSC

May 19, 2022 - The NERSC User Survey

Apr 21, 2022 - Metrics of interest

Mar 17, 2022 - Remote development in NERSC Shifter containers with Visual Studio Code

Feb 17, 2022 - How to use and contribute to NERSC documentation for users

Jan 20, 2022 - Running climate models on Cori

# Outlook: NUGEX in remainder of 2022 and into 2023

(disclaimer: these are my ideas, not necessarily NUGEX ideas)

- ▶ Followup on improving user engagement
  - ▶ implement more of the brainstorming ideas
  - ▶ create additional SIGs ?
- ▶ Status of Cori retirement
- ▶ Status of Perlmutter as the only production platform
  - ▶ batch queue configuration
  - ▶ charging (big job discount? flex queue? ...)
- ▶ Beyond Perlmutter
  - ▶ user input for decisions regarding NERSC-10 ?

Last but not least

- ▶ Thanks to NERSC for their ongoing user support
- ▶ Thank all of you for participating in the NUG 2022 annual meeting