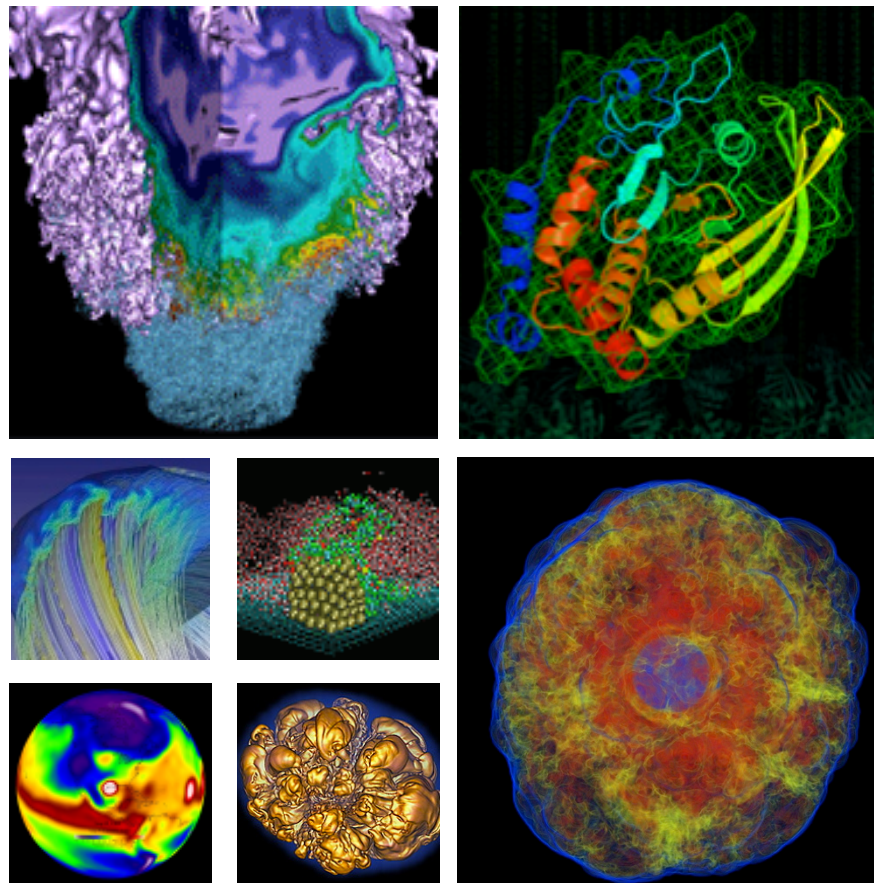


NERSC Users Group Webinar - September 2015



September 10, 2015

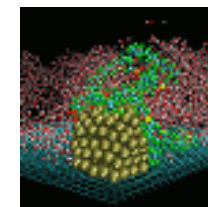
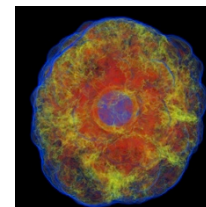
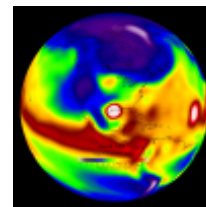
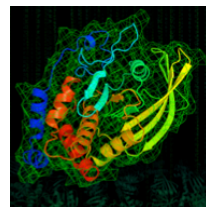
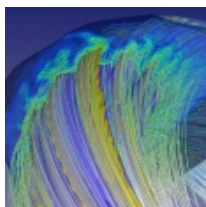
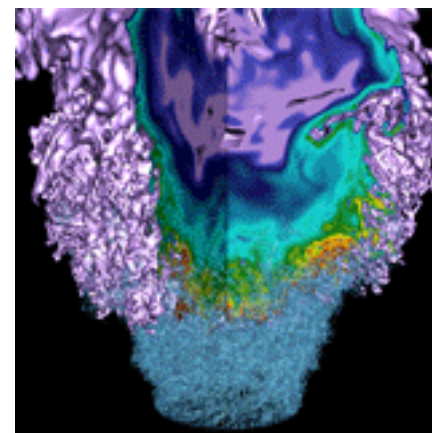
Agenda



- **News from DOE**
- **Move and outage schedule and user impact**
- **Carver retirement**
- **Cori Phase 1**
- **Edison**
- **NESAP update**
- **Intel Xeon Phi Users Group Meeting**
- **Science Byte**
- **NERSC Science Engagements**
- **How to submit a successful ERCAP request (Deadline Sep. 21)**
- **NERSC is Hiring!**

News from DOE

Dave Goodwin, NERSC DOE Program Manager



U.S. DEPARTMENT OF
ENERGY

Office of
Science



2016 ERCAP July 13th Briefing



- **October 5th : NERSC provides SC Program Office with proposals and spreadsheets of individual PI requests.**
- **October 6th: ASCR requests SC Program Office Justifications for Target and Over Target.**
- **October 23rd: Justifications due to ASCR (12 working days).**
- **November 13th: SC-1 decisions due/sent (14 working days or less).**
- **December 4th: Individual PI Allocations due to NERSC (14 working days or more).**

2017 ERCAP



- **SC-1 has SC Program Office compete for Over Target (15% of ERCAP).**
- **SC Program Offices' shares of ERCAP Target (85% of ERCAP) unchanged for years.**
- **With Cori, SC-1 may modify SC Program's shares of ERCAP Target.**

NERSC-9 (1 of 2)



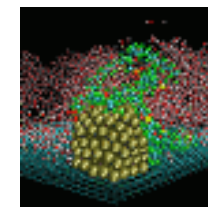
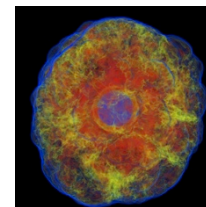
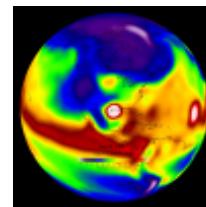
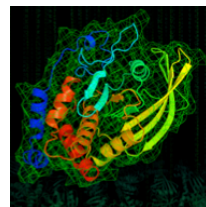
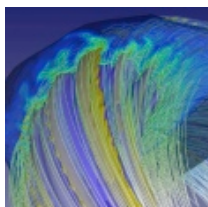
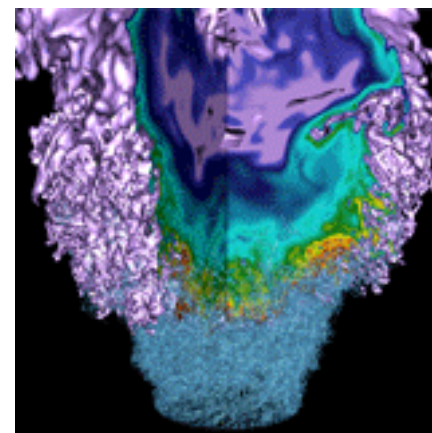
- Based on Requirements Reviews.
- Mission Need Statement approved by SC-1 on August 24th (NERSC-9 in budget).
- Energy Systems Acquisition Advisory Board (ESAAB) meeting of August 31st resulted in ASCR Director approving Critical Decision 0 (CD0) on August 31st (RFP can be released to Vendors for comments).
- January 19-20 Design Review of RFP technical scope.
- March 8-9 DOE project management review.

NERSC-9 (2 of 2)



- **April ESAAB for ASCR Director approval of CD1/CD3A (to release RFP).**
- **FY17: Design review (contract technical scope), DOE review of project management, ESAAB, CD2/CD3B approval, contract award.**
- **CY20: Delivery.**
- **January, 2021 ERCAP production.**
- **25 times to 50 times Edison sustained performance.**
- **$\geq$ \$90 million, including power, cooling, and NERSC costs.**

Move Schedule and Impact



U.S. DEPARTMENT OF
ENERGY

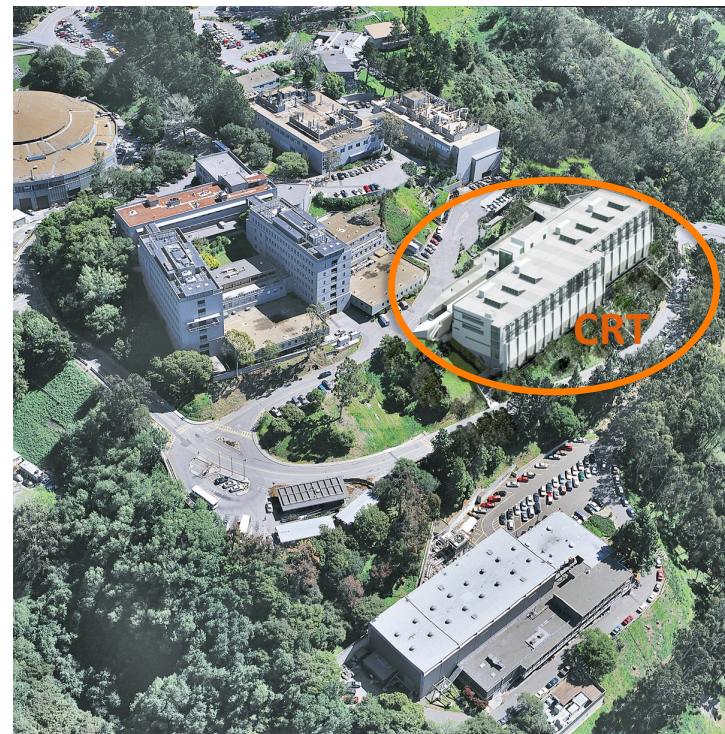
Office of
Science



NERSC is Moving!



- Currently we are at OSF (Oakland Scientific Facility) in Oakland downtown for 10+ yrs.
- We are moving to the LBNL main site in Berkeley hills to a new building: the Computational Research and Theory (CRT) building.
- Cori Phase1 and its file system delivered to CRT in August, under configuration now.



Key Strategies for the Move



- **Concurrent operation in CRT and OSF**
- **Install new systems at CRT**
- **Retire old systems at OSF**
- **Move equipment in manageable phases**
- **Minimize downtime and reduce impact to users**
- **Dedicated 400 Gb/s inter-site network to allow systems to access storage at either site**
- **Cori hours to make up for Carver/Hopper retirement and Edison move**

High Level Plans: Compute Systems



- **Carver/Hopper retire at OSF**
 - Sept 30 / Dec 15, 2015
- **Edison move to CRT**
 - Dec 2015, offline for ~6 weeks, back online with SLURM batch scheduler.
- **Cori to be installed at CRT**
 - Phase 1 arrives in Sept 2015
 - Phase 2 arrives in mid 2016
- **Genepool/PDSF**
 - No outage
 - Some old hardware retire at OSF
 - Some current hardware move to CRT
 - Some new hardware to be acquired at CRT

High Level Plans: Storage Systems



- **Global scratch retires at OSF**
 - Sept 30: becomes read only; Oct 14: retires
- **All other NERSC global file systems**
 - move to CRT in phases
 - Global homes, global common, project, projectb, dna, seqfs
- **HPSS (both archive and system backup)**
 - Remain at OSF until other moves complete
 - Accessed via 400 Gb/s network link

Main Timeline



Event	Date
Carver retires	Sept 30, 2015
Jesup test bed retires	Sept 30, 2015
Global Scratch read-only / retires	Sept 30, 2015 / Oct 14, 2015
Cori Phase 1 available to all users	Nov 2015 (estimate)
Edison offline to move to CRT	Dec 2015 (estimate to last 6 weeks), back online in Jan 2016 with SLURM batch scheduler
Hopper retires	Dec 15, 2015 (after Cori Phase 1 is stable)

More Details



- **Dec 2015**
 - Global homes file system replicated and installed at CRT. Reduced bandwidth. No outage.
 - Global project file systems replicated at CRT. Up to 5 days of / project outage.
- **Feb 2016**
 - /global/projectb, /global/dna, /global/seqfs replicated at CRT. Reduced bandwidth. Up to 7 days outage of these JGI file systems.
 - Some PDSF file systems relocated to CRT. ~2 weeks outage of these PDSF file systems.

More Details



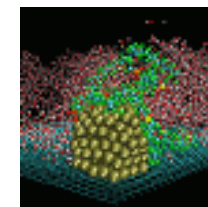
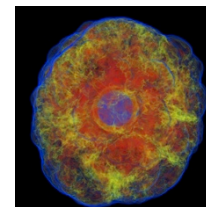
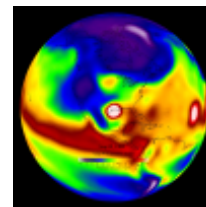
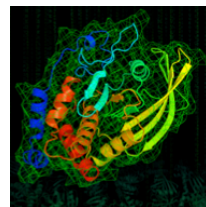
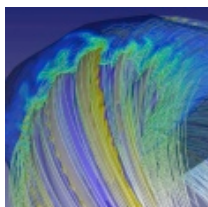
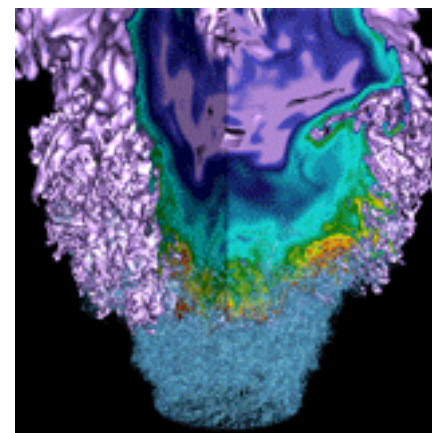
- **Feb 2016**
 - A cluster (internal name “Mendel”) providing resources to PDSF, JGI, the Materials Project, and Babbage will move to CRT.
 - Total amount of resources for PDSF and JGI will be reduced. Not an outage since new hardware already in place at CRT.
 - Materials Project: ~ 3 weeks outage
 - Babbage: up to 1 month outage

Big Message to Users



- **Please use your allocation now instead of end-of-year crunch.**
 - During Edison's move to CRT (~6 weeks), Cori will be the only MPP system available to users.
- **During the move, file system resources will be spread across OSF and CRT. Available I/O bandwidth to global file systems will be impacted.**
- **Follow up with updates at:**
 - <https://www.nersc.gov/users/move-to-crt/>

Carver and Global Scratch Retirement



Carver Retirement



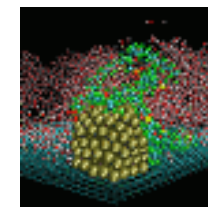
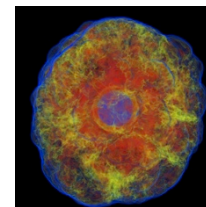
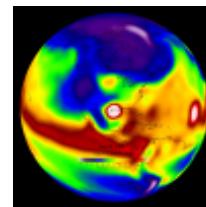
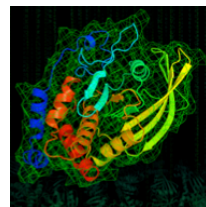
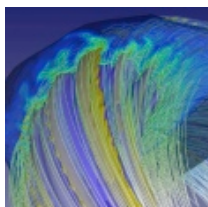
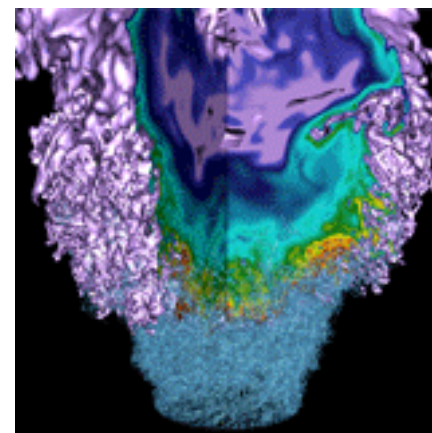
- **Software frozen**
- **No new user accounts**
- **Retires on Wed, Sept 30, 2015 at noon**
 - All user logins, queued and running jobs will be deleted
- **Users can access all Carver file systems mounted on other NERSC systems**
 - Notice no access to /global/scratch2 after Oct 14.
- **Please migrate to Edison now**
 - <http://www.nersc.gov/users/computational-systems/carver/retirement-plans/>
 - Some differences in programming and running jobs between Carver (traditional Linux cluster) and Edison (Cray XC30).
 - Contact consult@nersc.gov for any help

Global Scratch Retirement



- **/global/scratch2, usually referred to as \$GSCRATCH**
- **Becomes read-only on Wed, Sept 30, 2015**
- **Retires on Wed, Oct 14, 2015**
- **Is the only scratch file system for Carver and Babbage.**
- **Also mounted on most other NERSC systems:**
 - Edison, Hopper, PDSF, Genepool, DTN.
 - Backup your important files and start to use other files systems on these machines.
- **Is NOT the local Lustre file systems on Hopper and Edison, such as \$SCRATCH and \$SCRATCH2 on Hopper.**
- **Always backup important files to HPSS or another permanent file storage.**
- **Contact consult@nerosc.gov for any questions**

Cori Phase 1 Update



Wahid Bhimji

**NERSC Users Group
September 9th 2015**



U.S. DEPARTMENT OF
ENERGY

Office of
Science



The Cori System



- Cori will transition HPC and data-centric workloads to energy efficient architectures
- Cori will transition HPC and data-centric workloads to energy efficient architectures



Image source: Wikipedia

System named after Gerty Cori, Biochemist and first American woman to receive the Nobel prize in science.

- First machine in new Computational Research and Theory (CRT) building



Cori Overview



- **Over 9,300 ‘[Knights Landing](#)’ compute nodes**
 - 72 cores per node
 - High bandwidth on-package memory
 - Coming mid-2016
- **Phase 1 (being installed now):**
 - Haswell compute nodes
 - Will become ‘data partition’
- **Lustre File system (also installing now)**
 - Cray Sonexion 2000 Lustre appliance
 - 28 PB capacity, >700 GB/sec peak performance
 - Ultimately mounted to other systems
- **NVRAM “Burst Buffer” for I/O acceleration**

Cori Phase 1 Configuration



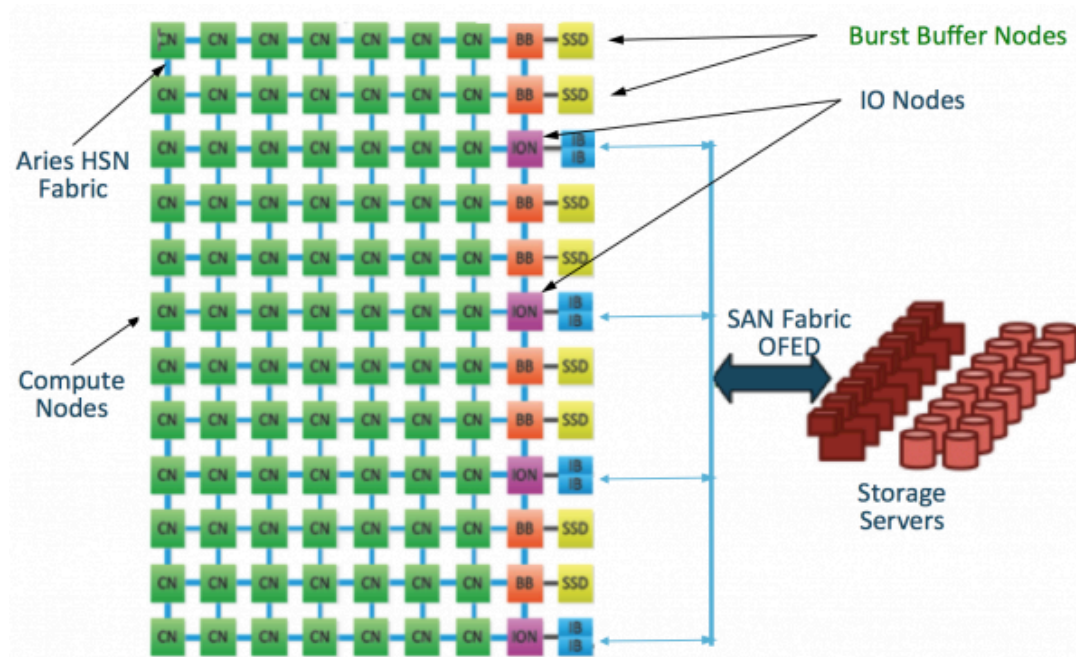
- **1630 Compute Nodes (in 12 cabinets)**
 - Two Haswell processors/node, 16 cores/processor, 2.3 GHz
 - 128 GB DDR4 2133 Mhz memory / node
- **Cray Aries high-speed “dragonfly” topology interconnect**
- **12+ login nodes for advanced workflows and analytics**
- **Outbound internet connection for e.g. external DBs**
- **‘Native’ SLURM batch system**
 - Queues (in addition to debug, regular, premium and low priority):
 - ‘Realtime’ and ‘Killable’: real-time data ingestion/analysis
 - ‘Throughput’ and ‘Shared’ for long-running and lower concurrency data-intensive workloads
- **Docker-like containers (shifter): custom software (and performance)**



Burst Buffer



<https://www.nersc.gov/users/computational-systems/cori/burst-buffer/>



- ~1.5PB capacity, ~1TB/s for full Cori System
- Half with Phase 1 - being installed over the coming weeks
- Available via SLURM batch system integration with Cray 'Data Warp' Software

IO improvements: high bandwidth reads and writes, e.g. checkpoint/restart; **high IOP/s** (input-output operations per second), e.g. non-sequential table lookup; **out-of-core** applications

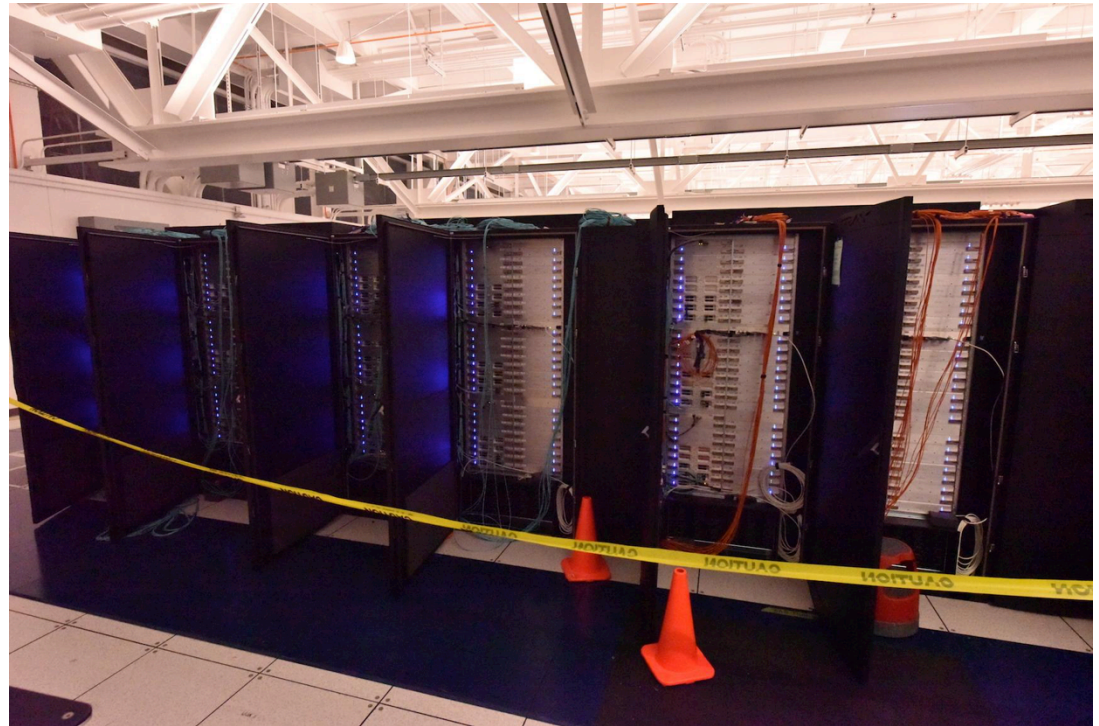
Workflow performance improvements: coupling applications, using the BB as interim storage; Optimizing node usage by changing node concurrency part way through a workflow (using a persistent BB reservation)

Analysis and Visualization: In-situ / in-transit; Interactive (using a persistent BB reservation)

Coming soon!



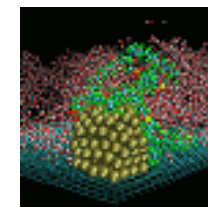
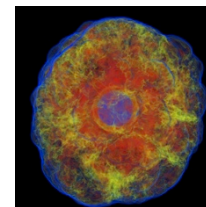
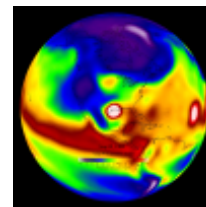
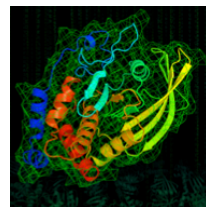
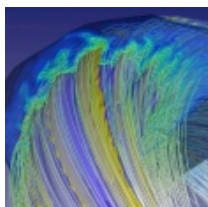
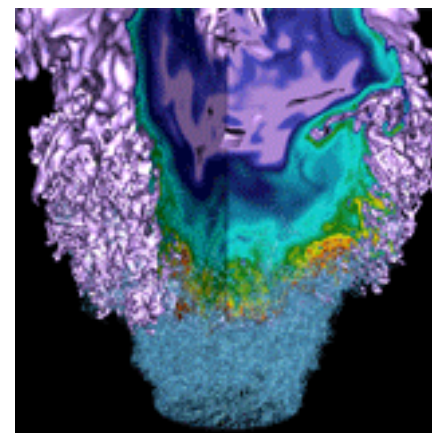
- Limited user access from late-October alongside machine acceptance
- Target Cori Phase 1 into production mid-Dec before Hopper retirement



Full configuration, User guides (including SLURM transition) etc. will appear at :

- <https://www.nersc.gov/users/computational-systems/cori/>

Edison Updates



Zhengji Zhao
NERSC User Services

Edison Updates



- **Maintenance 05/20/15**
 - Upgrade to CLE 5.2 UP03
 - Edison CDT 15.05 was set to default
- **Maintenance 07/29/15**
 - Mount /global/common read-only on mom & compute nodes with cache attributes
 - Attempt to Expand RSIP ports was not successful
 - Clear changelogs
 - Change cipher list for sshd
 - Ciphers aes128-ctr,aes192-ctr,aes256-ctr

Edison updates



- **Maintenance on 9/2/15**
 - changelog processing on /scratch1
 - Bring up two cabinets down compute nodes.
- **Dedicated tests**
 - 5/27 Native SLURM testing
 - 6/22 Cray's IMB testing
- **Power outage 8/12 3:30pm-8/13 2:20pm**
 - Thanks for your patience
- **In degraded mode**
 - A few times due to batch system issues, HSN, etc.

- **Edison batch system will be SLURM upon moving up to CRT**
 - We will provide user training
 - If you have a complicated workflow heavily depending on the batch system, please apply the access to the Edison testbed, Alva, by sending email to consult@nersc.gov
- **Two follow-ups (next two slides):**
 - /usr/common read-only
 - IMB setting

/usr/common read-only (7/29/15) improved the startup time of python applications



Benchmarks Monitor

Benchmarks Monitor

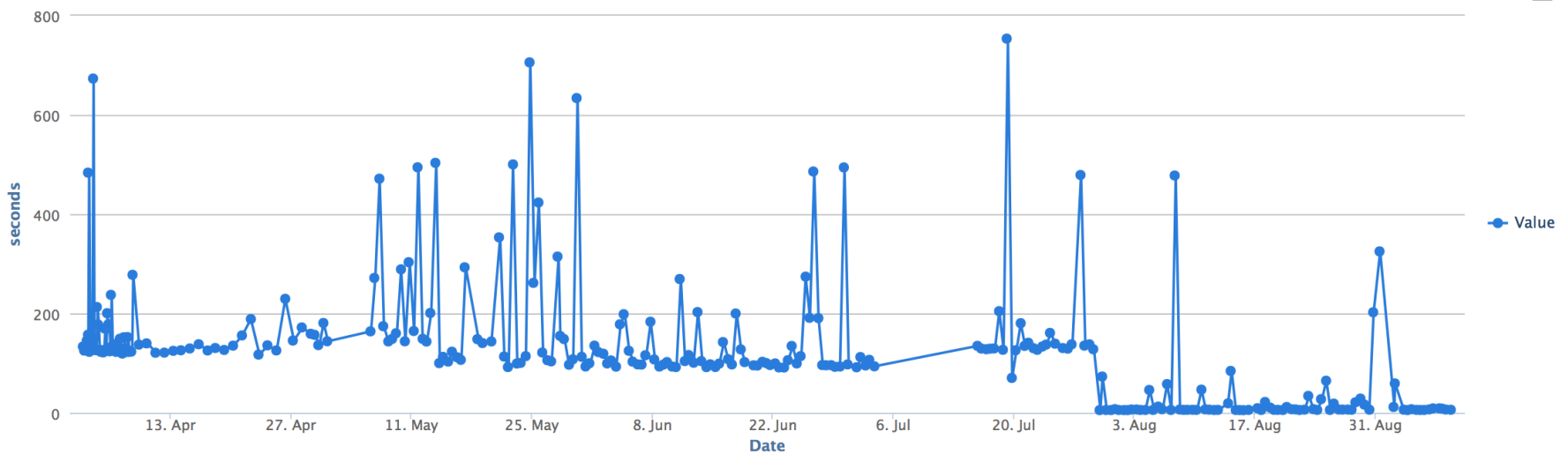
Hostname

Edison

Benchmark

Python Startup Time (runs 2400 python-mpi processes on 100 nodes)

Benchmark Performance over Time



Average: 125.67
Std Dev: 118.16
Variation: 94.02%



U.S. DEPARTMENT OF
ENERGY

Office of
Science



The run time variation vs the IMB setting for Aries (5/8/2015)- no observable difference



Benchmarks Monitor

Benchmarks Monitor

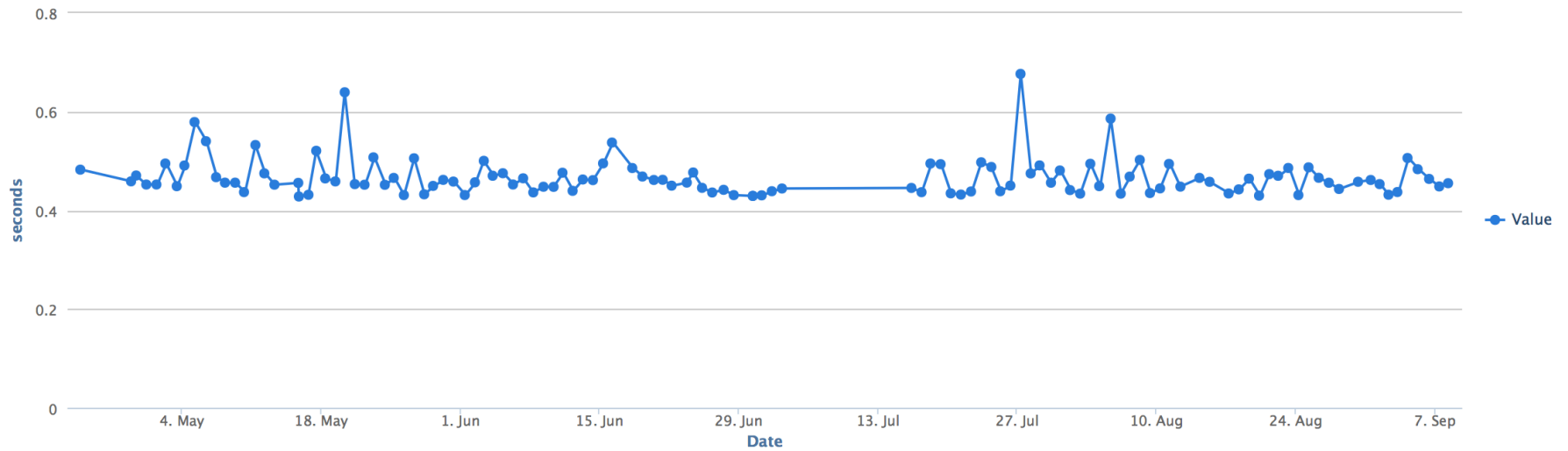
Hostname

Edison

Benchmark

HPGMG MGSolve Time with 500 nodes, 16 tasks per node: `aprun -n 8000 -N 16 -S 8 -cc numa_node ../source/run.edison.flat 6 8`

Benchmark Performance over Time



Average: 0.47
Std Dev: 0.04
Variation: 8.21%

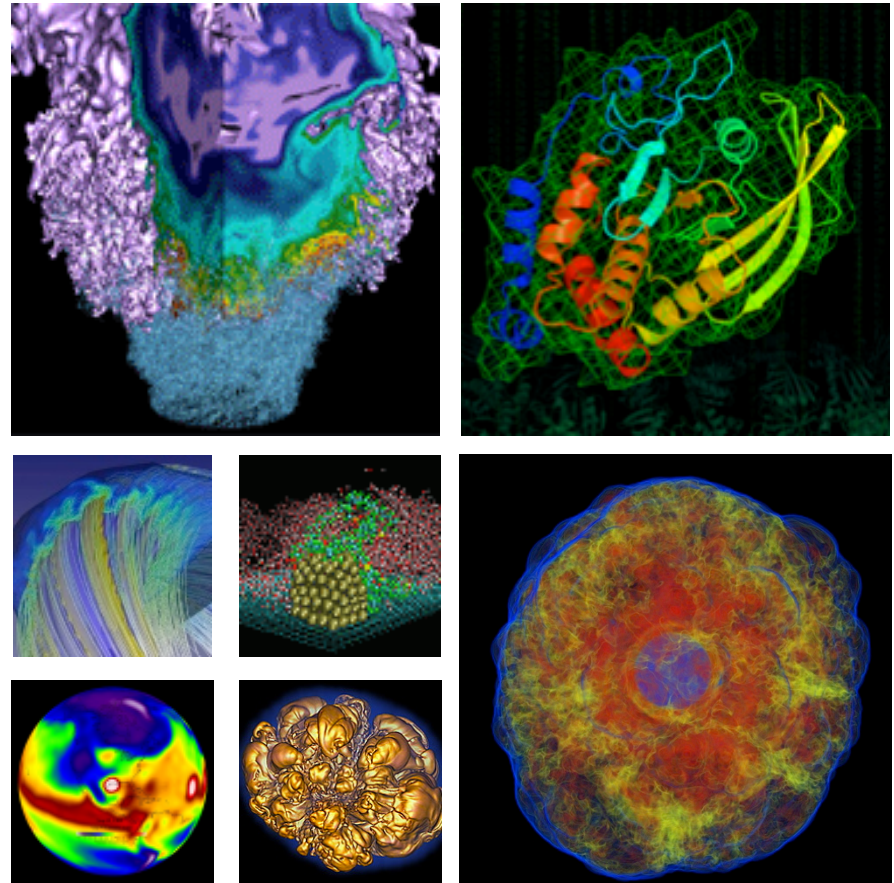


U.S. DEPARTMENT OF
ENERGY

Office of
Science



NESAP Update



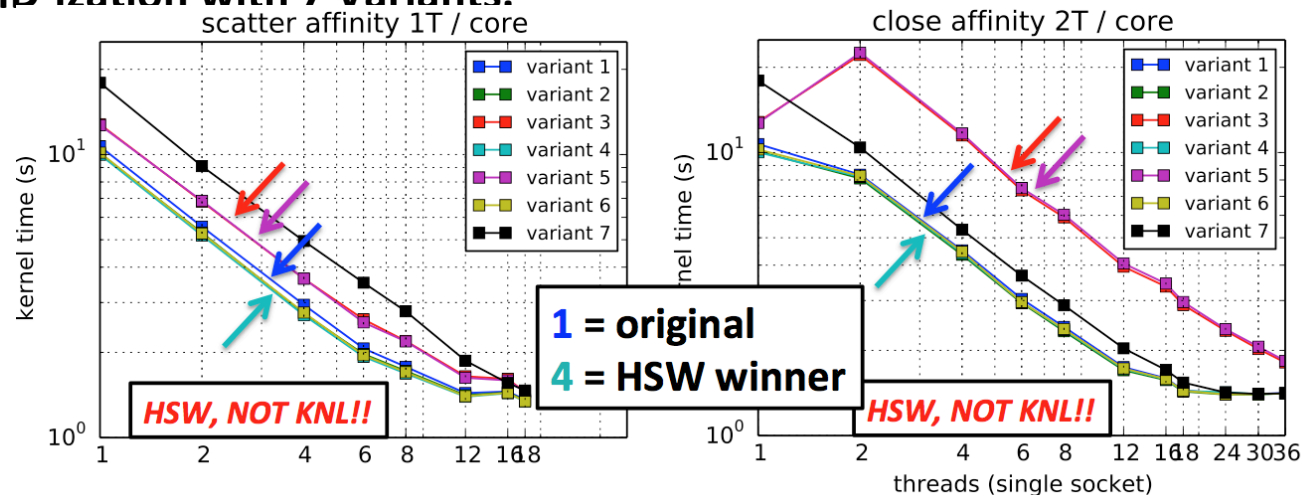
Computational Systems Group

NUG Meeting
May 14, 2015

NESAP at The Dungeon Session



- Three Dungeon Sessions Completed. Fourth planned for early October.
- Codes taken so far:
 - EMGEO, Boxlib, Castro, BerkeleyGW, NWChem, XGC1, MFDN, CESM
- Dungeon session preparation worksheet now online:
 - <http://www.nersc.gov/users/computational-systems/cori/preparing-for-cori/getting-started-and-optimization-strategy/#toc-anchor-5>
 - <http://www.nersc.gov/users/computational-systems/cori/preparing-for-cori/dungeon-session-worksheet/>
- Example - EMGEO complex*16 ELLPACK SpMV. Evaluating, prefetching, pipelining, explicit SIMD-ization with 7 Variants.



Testing Sensitivity to HBM



Can experiment with jemalloc/memkind and directives now on Edison!

```
real, allocatable :: a(:, :), b(:, :), c(:)
```

```
!DIR$ ATTRIBUTE FASTMEM :: a, b, c
```

```
% module load memkind jemalloc
```

```
% ftn -dynamic -g -O3 -openmp mycode.f90
```

```
% export MEMKIND_HBW_NODES=0
```

```
% aprun -n 1 -cc numa_node numactl --membind=1 --cpunodebind=0 ./a.out
```

Testing Sensitivity to HBM



Can experiment with jemalloc/memkind and directives now on Edison!

```
real, allocatable :: a(:, :), b(:, :), c(:)
```

```
!DIR$ ATTRIBUTE FASTMEM :: a, b, c
```

```
% module load memkind jemalloc
```

```
% ftn -dynamic -g -O3 -openmp mycode.f90
```

```
% export MEMKIND_HBW_NODES=0
```

```
% aprun -n 1 -cc numa_node numactl --membind=1 -
```

BGW Results:

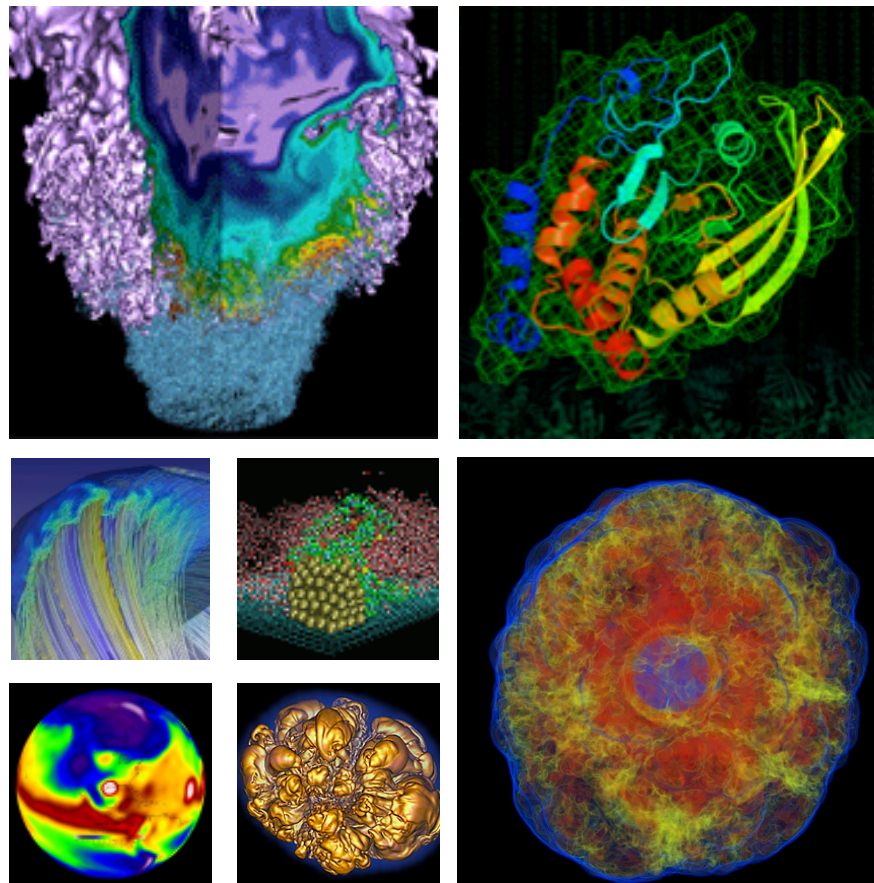
- All memory on Near Memory: 25.0 s
- All memory on Far Memory: 52.5 s
- Only 3 Arrays on Near Memory: 24.8 s

Join Us At IXPUG



NESAP Session Thursday October 1 at 3PM!

IXPUG 2015



Computational Systems Group

NUG Meeting
May 14, 2015



U.S. DEPARTMENT OF
ENERGY

Office of
Science



IXPUG 2015 Meeting Sep. 28-Oct. 1



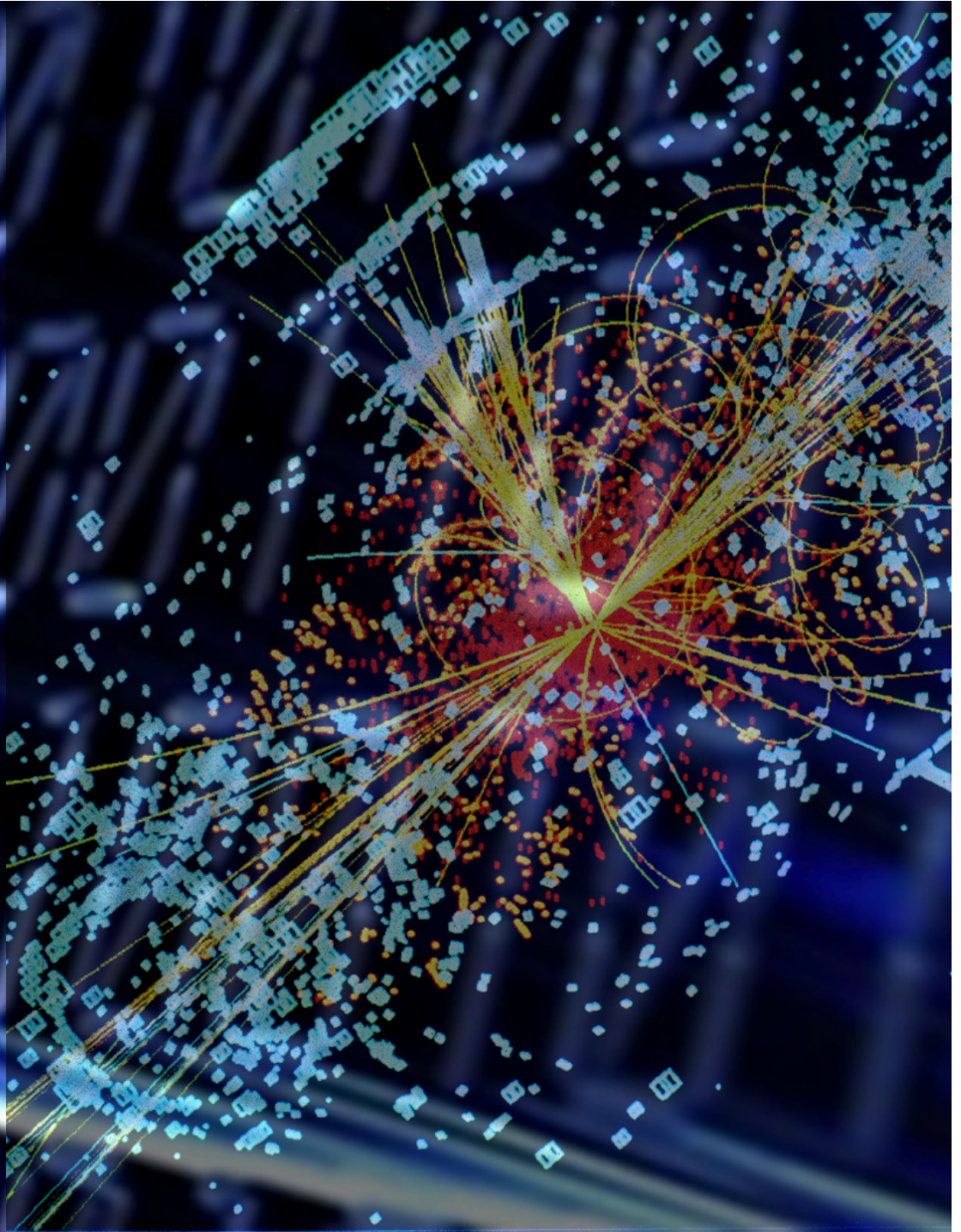
- **Intel Xeon Phi Users Group 2015 Meeting**
 - IXPUG is dedicated to helping application programmers achieve top performance on Intel Xeon Phi-based systems, like Cori
- **Hosted by NERSC in new CRT building**
- **Meeting almost full at ~100**
- **More info and registration at**



<http://ixpug.org/>



Science Byte



Detecting plumes with seismic imaging



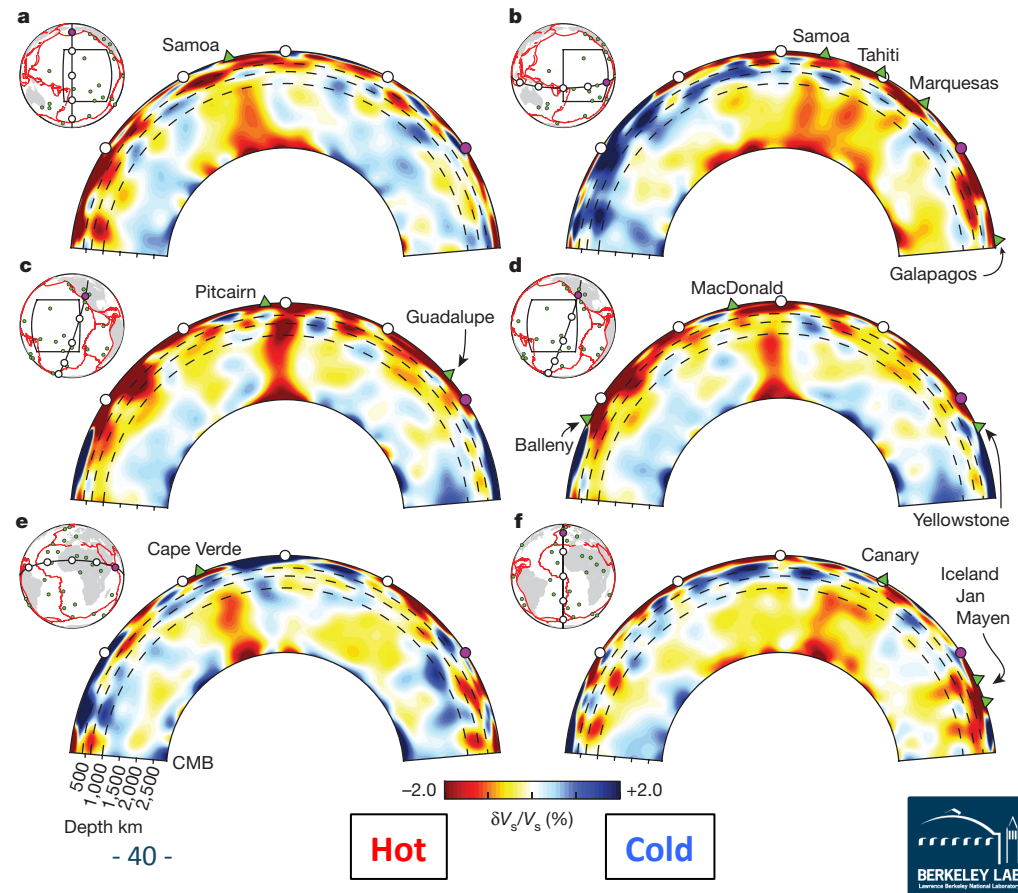
- First-ever whole-mantle seismic model based on numerical simulations
- Detects clear “plume” conduits rising from the earth’s deep mantle
 - Long thought to play a key role in hotspot volcanism
- New details of plume morphology constrain formation, composition
- Provide insights into the earth’s heat-flux budget, mantle circulation

LETTER

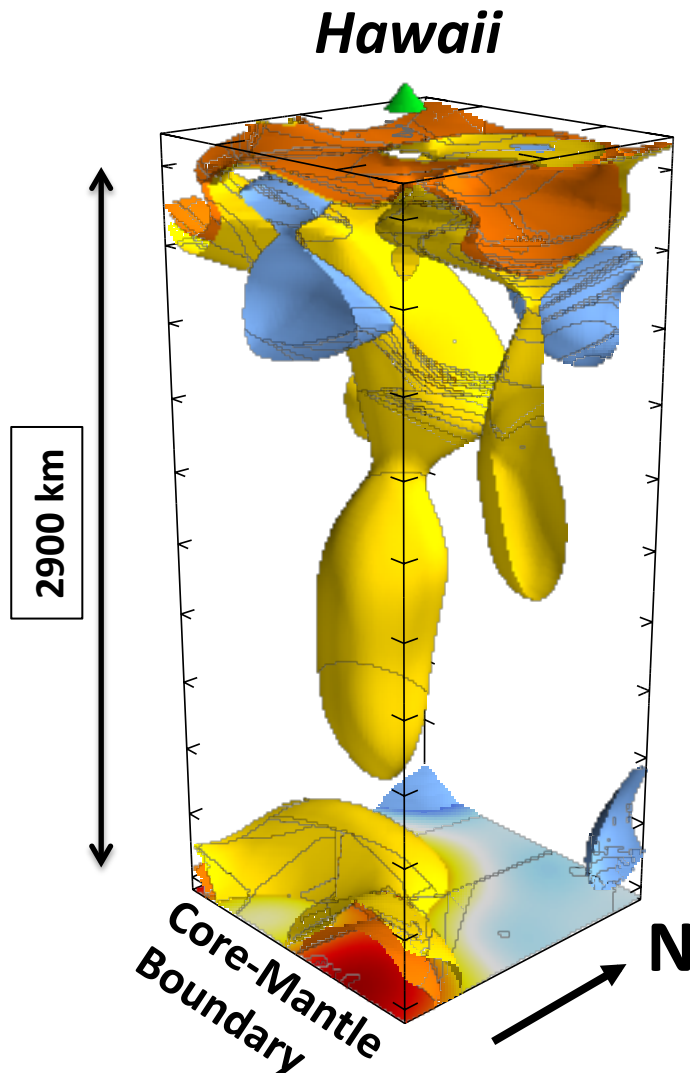
doi:10.1038/nature14876

Broad plumes rooted at the base of the Earth’s mantle beneath major hotspots

Scott W. French^{1†} & Barbara Romanowicz^{1,2,3}

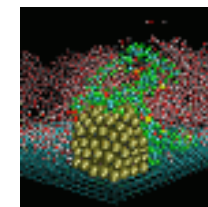
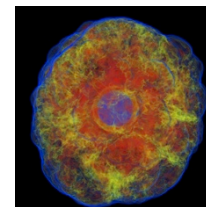
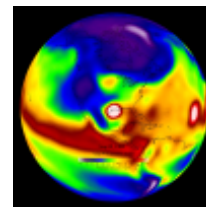
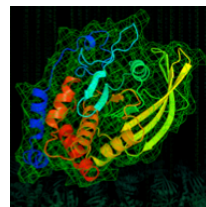
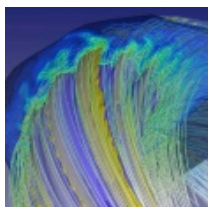
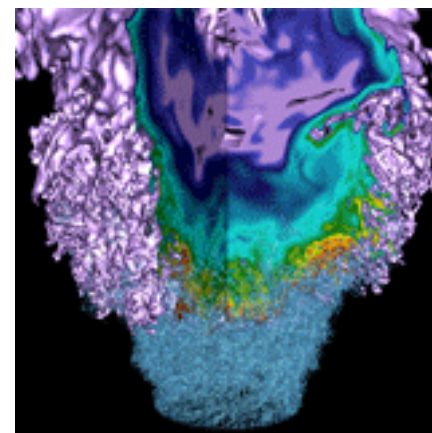


Computational aspects of our work



- All computations were performed on NERSC resources
- Roughly 3M MPP hours
- Used both Hopper and Edison
 - **Hopper:** Ensembles of spectral finite element simulations (wave propagation through the whole earth)
 - **Edison:** Data assimilation and seismic model optimization
- Novel programming tools
 - Our data assimilation app was one of the first to adopt UPC++¹ in production (distributed data structures supporting fast one-sided access / updates)

NERSC Science Engagements



U.S. DEPARTMENT OF
ENERGY

Office of
Science



- **To further enhance our support for science communities, NERSC has identified science liaisons**
 - General POC for science communities
 - Help NERSC understand science communities' needs
 - Engagements through workshops, conferences, other science community events
 - Communicate science results within NERSC, DOE, scientific communities, general public
 - Consult on DDR allocations decisions
 - Advocate for science community needs within NERSC & DOE
 - Interface with DOE program managers

Science Liaisons



Richard Gerber
Senior Science Advisor
Ph.D., Physics
Astrophysics,
HEP Theory, Nuclear
Physics
RAGerber@lbl.gov



Alice Koniges
Ph.D., Math Astro
Accelerator
Physics, Fusion
AEKoniges@lbl.gov



Kjersten Fagnan
Ph.D., Applied Math
Biosciences, Applied
Math
KMFagnan@lbl.gov



Brian Friesen
Ph.D., Astrophysics
Astrophysics
BFriesen@lbl.gov



Debbie Bard
Ph.D., Elementary
Particle Physics
Cosmology, HEP/
NP Experiment
DJBard@lbl.gov



David Skinner
Ph.D., Chemistry
Light Sources
DESkinner@lbl.gov



U.S. DEPARTMENT OF
ENERGY

Office of
Science



Science Liaisons



Brian Austin
Ph.D., Chemistry
Chemistry
BAustin@lbl.gov



Prabhat
Ph.D. candidate,
Climate
Climate
Prabhat@lbl.gov



Helen He
Ph.D., Marine
Studies
Climate
YHe@lbl.gov



Scott French
Ph.D., Geophysics
Geophysics,
Computer Science
SWFrench@lbl.gov



Ankit Bhagatwala
Ph.D., Aeronautics
& Astronautics
Combustion
ABhagatwala@lbl.
gov



Lisa Gerhardt
Ph.D., Physics
HEP/NP
Experiment
LGerhardt@lbl.gov

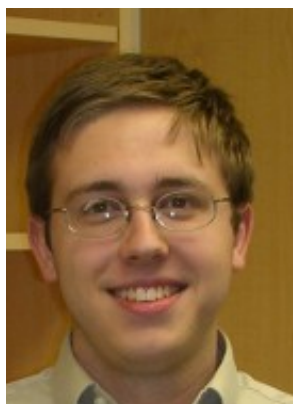


U.S. DEPARTMENT OF
ENERGY

Office of
Science



Science Liaisons



Taylor Barnes
Ph.D., Chemistry
Chemistry
TBarnes@lbl.gov



Jack Deslippe
Ph.D., Material
Science
Material Science
JRDeslippe@lbl.gov



Zhengji Zhao
Ph.D., Material
Science
Material Science
ZZhao@lbl.gov



Rebecca Hartman-Baker
Ph.D., Computer Science
Computer Science,
Nuclear Physics
ZZhao@lbl.gov



Andrey Ovsyannikov
Ph.D., Fluid Mechanics
Computer Science
aovsyannikov@lbl.gov



Office of
Science



NERSC is Hiring!



- <http://cs.lbl.gov/careers/careers-and-fellowships/>
 - Application readiness/HPC consultants
 - High Energy Physics/Nuclear Physics consultant
 - NESAP Postdocs
 - Network Engineer
 - Data Analytics
 - Security Analyst
 - Computer Systems Engineer
-
- NERSC Users Make Great NERSC Staff!

How to Submit a 2016 ERCAP Request

Clayton Bagwell
NERSC Account & Allocation Support
NERSC User Services Group

NERSC Users Group Teleconference/Webinar
September 10, 2015

View the online video at:

**[https://www.nersc.gov/users/training/video-tutorials/
how-to-submit-a-2016-ercap-allocations-request/](https://www.nersc.gov/users/training/video-tutorials/how-to-submit-a-2016-ercap-allocations-request/)**



U.S. DEPARTMENT OF
ENERGY

Office of
Science



ERCAP

“Energy Research Computing Allocations Process”

ERCAP Application Deadlines

[http://www.nersc.gov/users/
accounts/allocations/deadlines](http://www.nersc.gov/users/accounts/allocations/deadlines)



Powering **Scientific Discovery** Since 1974

Login
Site Map | My NERSC | Share

search...

HOME ABOUT SCIENCE AT NERSC SYSTEMS **FOR USERS** NEWS & PUBLICATIONS R & D EVENTS LIVE STATUS

FOR USERS

- » Live Status
- » My NERSC
- » Move to CRT
- » Getting Started
- » Accounts & Allocations
 - Glossary
 - User Accounts
 - Allocations
 - Overview and Eligibility
 - Apply for Your First Allocation
 - Allocation Request Form (ERCAP)
 - Application Deadlines**
 - 2016 Call for Proposals
 - Request More Time
 - Allocation Reductions
 - Managing Your Allocation
 - DOE Allocation Managers
 - NESAP
 - Past Calls for Proposals
 - Burst Buffer Early User Program
- NIM (NERSC Information Management portal)

Home » For Users » Accounts & Allocations » Allocations » Application Deadlines

ALLOCATION PROPOSAL (ERCAP) APPLICATION DEADLINES

Award Type	ERCAP Submission Open	ERCAP Submission Deadline	Award Decision	Allocation Period
Startup and Education	Ongoing	Ongoing	Within 3 weeks of applying	18 months from award (but must be renewed for the next allocation year)
Production (DOE awarded) for the rest of allocation year 2015	Ongoing	Ongoing	Within 4 weeks of applying (pending sufficient DOE reserves of time)	through January 11, 2016
All continuing projects must be renewed for 2016. New projects may apply after the deadline.	August 4, 2015	September 21, 2015	December 11, 2015	January 12, 2016 - January 9, 2017



U.S. DEPARTMENT OF
ENERGY

Office of
Science



**Who can apply? Anyone who's
work supports the DOE Office of
Science Missions**

**[https://www.nersc.gov/users/
accounts/allocations/overview/](https://www.nersc.gov/users/accounts/allocations/overview/)**



Powering Scientific Discovery Since 1974

Site Map | My NERSC | Share

search...

HOME ABOUT SCIENCE AT NERSC SYSTEMS **FOR USERS** NEWS & PUBLICATIONS R & D EVENTS LIVE STATUS

FOR USERS

- » Live Status
- » My NERSC
- » Move to CRT
- » Getting Started
- » Accounts & Allocations
- Glossary
- User Accounts
- Allocations

Overview and Eligibility

- Apply for Your First Allocation
- Allocation Request Form (ERCAP)
- Application Deadlines
- 2016 Call for Proposals
- Request More Time
- Allocation Reductions
- Managing Your Allocation
- DOE Allocation Managers
- NESAP
- Past Calls for Proposals
- Burst Buffer Early User Program
- NIM (NERSC Information Management portal)
- Awarded projects
- » Computational Systems
- » Storage & File Systems
- » Data & Analytics
- » Connecting to NERSC
- » Queues and Scheduling
- » Job Logs & Statistics
- » Training & Tutorials
- » Software
- » Policies

Home » For Users » Accounts & Allocations » Allocations » Overview and Eligibility

ALLOCATIONS OVERVIEW AND ELIGIBILITY

Allocations Overview

Most allocations of NERSC computer time and archival storage are awarded by DOE and managed by NERSC. There is no monetary charge to the project that receives the award. The awarded research groups are given project accounts, known as *repositories* (or *repos*), with a given amount of computing hours and an archival storage allocation. Resource usage (computer time or archival storage) is charged against the repository, like a withdrawal from a bank account. Once the account is exhausted, users can no longer charge against that account.

NERSC supports several allocation programs:

TABLE OF CONTENTS

1. Allocations Overview
2. Eligibility
3. Principal Investigators and PI Proxies
4. Advanced Scientific Computing Research (ASCR) Mission
5. Basic Energy Sciences (BES) Mission
6. Biological and Environmental Research (BER) Mission
7. Fusion Energy Sciences (FES) Mission
8. High Energy Physics (HEP) Mission
9. Nuclear Physics (NP) Mission
10. Small Business Innovation Research (SBIR) Mission

Allocation Type	% of DOE Allocation	Description
DOE Production	80%	Awards are made by DOE program managers in the six offices of science and SBIR. Applicants need to be part of a research project funded by the DOE Office of Science or show that their work meets the DOE mission.
ALCC	10%	ASCR Leadership Computing Challenge: a DOE program run by ASCR to promote areas of interest to DOE. See the ALCC web page .
NERSC Director's Reserve	10%	This is for projects selected by the NERSC Director.
Education, Startup	N/A	Small awards made by NERSC from NERSC overhead time.



U.S. DEPARTMENT OF
ENERGY | Office of
Science



Applying for your first allocation:

<http://www.nersc.gov/users/accounts/allocations/first-allocation>



Powering **Scientific Discovery** Since 1974

Site Map | My NERSC | Share

search...

Login



HOME ABOUT SCIENCE AT NERSC SYSTEMS **FOR USERS** NEWS & PUBLICATIONS R & D EVENTS LIVE STATUS

FOR USERS

- » Live Status
- » My NERSC
- » Getting Started
- » Computational Systems
- » Data & File Systems
- » Network Connections
- » Queues and Scheduling
- » Job Logs & Analytics
- » Training & Tutorials
- » Software
- » Accounts & Allocations

Glossary

User Accounts

Allocations

Overview and Eligibility

Apply for Your First Allocation

Allocation Request Form (ERCAP)

Application Deadlines

2014 Call for Proposals

Managing Your Allocation

DOE Allocation Managers

Home » For Users » Accounts & Allocations » Allocations » Apply for Your First Allocation

APPLY FOR YOUR FIRST NERSC ALLOCATION

Initial Steps Needed to Apply for Your First NERSC Allocation

All work done at NERSC must be within the DOE Office of Science mission. See the Mission descriptions for each office at [Allocations Overview and Eligibility](#).

Prospective Principal Investigators without a NERSC login need to fill out two forms:

1. The online [ERCAP Access Request Form](#). If you wish to designate another person to fill out the request form you may designate a "PI Proxy" on this form.
2. Complete and submit the online [Computer User Agreement form](#).

Once we receive your agreement form and activate your account, you will receive an email with a link that will allow you to set your initial password. That link will expire if not used within 72 hours. If the link has expired, you will need to call NERSC Account Support at 1-800-666-3772 menu 2, or 510-486-8612, to obtain a temporary password. You can call at any time, 24 x 7, and somebody will be here to assist you.

Startup Allocations

Many new NERSC projects begin with a **Startup** allocation, particularly if they are new to HPC or are not yet ready to run production codes on thousands of CPU cores. Startup awards are limited to 50,000 MPP hours (Cray XT4 equivalent hours) and are good for up to 18 months.



U.S. DEPARTMENT OF
ENERGY

Office of
Science





NERSC Information Management

Please sign in

NERSC Username:

NIM Password:

[Reset your NIM password.](#) | [Forgot your username?](#) | [Sign in as Staff](#)

Log In

New to NERSC? Get valuable information about using NIM here: [NIM User's Manual](#).

Reset your NIM password using the link above. If you have problems resetting your password, contact Account Support at the number below.

For Account problems/questions, contact:

NERSC Account Support: 1-800-66-NERSC (menu option #2) or 510-486-8612.

For Program problems/questions, contact:

NERSC Consultants: 1-800-66-NERSC (menu option #3) or 510-486-8611,
consult@nersc.gov



U.S. DEPARTMENT OF
ENERGY

Office of
Science





Test PI | [Logout](#) | [Change My Password](#)

Quick Search:



NIM Home

My Stuff ▼

Search ▼

Reports ▼

Actions ▼

Welcome to the NERSC Information Management (NIM) system. Use this interface to find information about NERSC users and repositories. Authorized managers can also modify information and create or review allocation requests. Staff-only options are in **gold**.

Last NIM login on 06/04/2013 14:02:37
Your password will expire on 12/01/2013

NERSC System Status: **MOTD**

My Account Usage
My Contact Info
My ERCAP Requests
Add/Revive User

MPP Available Repo Balance

HPSS Available Repo Balance

Repo 7-day Report

ERCAP requests [Refresh list](#)



ERCAP requests [Refresh list](#)

Request Title	Year	Click to renew for 2016	Click to edit	Click to download
Test project/repositories	2016		Edit	Download PDF
CRD Advanced Computing for Science Department Guest Accounts	2015	Renew	Edit	Download PDF
NERSC High Performance Computing Department Training Accounts	2015	Renew	Edit	Download PDF
NERSC Operations Staff Accounts	2015	Renew	Edit	Download PDF
NERSC Cray Staff Accounts	2015	Renew	Edit	Download PDF
NERSC Staff Accounts	2015	Renew	Edit	Download PDF
NERSC Center Vendor Accounts	2015	Renew	Edit	Download PDF
NERSC Center Guest Accounts	2015	Renew	Edit	Download PDF
NERSC overhead account for users with no active repo	2015	Renew	Edit	Download PDF



NERSC overhead account for users with no active repo

2014

[Edit](#)

[Download PDF](#)

[Start a Request for a new Project](#)

If you wish to continue a project to the next year allocation year (2016), click on the "Renew" link next to the project's title above.

Many informational fields will be carried forward into your 2016 request, so you will not have to retype them.

Use the '[Start a Request for a new Project](#)' link for **NEW** projects only.

Starting a new request will require a new user list (*i.e.* add existing users to the new project/repository, *etc.*) and filling in ALL the information fields.



U.S. DEPARTMENT OF
ENERGY | Office of
Science



What type of request would you like to start ?

A new request for the remainder of 2015 ☒ (ends Jan 13, 2016)

A new request for 2016 ☐ (starts Jan 14, 2016)

Start new ERCAP request



U.S. DEPARTMENT OF
ENERGY

Office of
Science



Project
Overview
Q1-9

ERCAP 2016 Request:

PI:

Last updated: (Not Yet Finished)

 Download PDF

Save Project Overview Q1-9 You MUST click the "Save" button here or at the bottom in order to save your work before selecting another tab.

1. Principal Investigator

Name	Phone	Email
Pi, Test	510-486-8612	support-notice@lbl.gov

2. Other Authorized Preparers - Preparer will be designated a PI PROXY Note: Link to add an additional preparer will not display until after the initial project information is saved.

3. Senior Investigators

Test Senior Investigator 1
Test Senior Investigator 2

4. Project Title

Test Project

4.1 URL for a relevant web page describing your project

Enter ONLY ONE URL per line using the format:
http://www.nersc.gov

www.nersc.gov

(4000 characters maximum)

4.2 Image representing your project

(NOTE: You can add your image after saving your ercap request)

(When you upload a new image, it will not be visible here until you refresh the page.
For renewed projects that previously had uploaded an image, this image will display after the project overview is saved.)



U.S. DEPARTMENT OF
ENERGY

Office of
Science



5. Project Name

TestProject

6. Project Class

- Select Startup or DOE Base Funding unless you know that your project falls under another specific class

DOE Base Funding

7. Sponsoring Site

- If this field is blank, start typing in the name of your site and select the appropriate site from the list. If your organization does not show up on the list, click the link below to submit the information for your organization

USA: Lawrence Berkeley National Lab - NERSC

If your site is not listed, [click here to add new organization](#).

8. Science Category

Computer Science

9. DOE Office and Program

ASCR - Computer Sciences

Save Project Overview Q1-9





You have started a new ERCAP request. Please click any tab to continue.

Project Overview Q1-9	DOE Funding Q10-11	Project Description Q12-14	Resources Requested Q15-18	PDSF Q19	Code Description(s) Q20	Data & Analytics Q21-22	Other Info Q23-25	Submit Request	Show Complete Request	
-----------------------	--------------------	----------------------------	----------------------------	----------	-------------------------	-------------------------	-------------------	----------------	-----------------------	--

ERCAP 2016 Request: 89039

PI: Test Pi

Last updated: 21-AUG-2015 (Not Yet Finished)

 [Download PDF](#)

Test Project

The Project Overview Q1-9 form has been saved successfully.



Project Overview Q1-9	DOE Funding Q10-11	Project Description Q12-14	Resources Requested Q15-18	PDSF Q19	Code Description(s) Q20	Data & Analytics Q21-22	Other Info Q23-25	Submit Request	Show Complete Request	
--------------------------	-----------------------	-------------------------------	-------------------------------	-------------	----------------------------	----------------------------	----------------------	----------------	-----------------------	--

ERCAP 2016 Request: 89039

PI: Test Pi

Last updated: 21-AUG-2015 (Not Yet



Test Project

Save Project Overview Q1-9 You MUST click the "Save" button here or at the bottom in order to save your work before selecting another tab.

1. Principal Investigator

Name	Phone	Email
------	-------	-------

Pi, Test	510-486-8612	support-notice@lbl.gov
----------	--------------	------------------------

2. Other Authorized Preparers - Preparer will be designated a PI PROXY [Add a preparer \(PI Proxy\)](#)

Name	Phone	Email
------	-------	-------

PIPROXY, Test	510-486-8612	support-notice@nersc.gov
---------------	--------------	--------------------------

3. Senior Investigators

Test Senior Investigator 1
Test Senior Investigator 2

4. Project Title

Test Project

4.1 URL for a relevant web page describing your project

Enter ONLY ONE URL per line using the format:
http://www.nersc.gov

www.nersc.gov

(4000 characters maximum)

4.2 Image representing your project

[Select to upload a project image file](#)

(When you upload a new image, it will not be visible here until you refresh the page.

For renewed projects that previously had uploaded an image, this image will display after the project overview is saved.)



U.S. DEPARTMENT OF
ENERGY

Office of
Science



How project images are used:

<http://www.nersc.gov/live-status/now-computing/>

Center Overview



Edison Cray XC30
Peak TFlop/s: 2,570
Jobs running: 435
Jobs queued: 1,804
Cores in use:
 112,392 (84%)
Backlog: 1.3 days



Hopper Cray XE6
Peak TFlop/s: 1,288
Jobs running: 583
Jobs queued: 3,942
Cores in use:
 152,736 (100%)
Backlog: 7.0 days



Carver IBM
 iDataPlex
Peak TFlop/s: 34
Jobs running: 412
Jobs queued: 1,729
Cores in use: 3,750
 (49%)
Backlog: 5.5 days



Storage Usage
Project: 4,630TB
GScratch: 2,128TB
DNA: 796TB
ProjectB: 1,352TB
Ed. Scratch 1:
 1,113TB
Ed. Scratch 2:
 1,108TB

Top Jobs



Quantum Chromodynamics with four flavors of dynamical quarks
Office: High Energy Physics
Investigator: Doug Toussaint
Science Area: Lattice QCD
Cores: 12,288 (Hopper)
Core Hours Used: 4,107,613.3



Hydrodynamics and Nucleosynthesis of Supernovae and Compact Object Mergers
Office: Nuclear Physics
Investigator: Rodrigo Fernandez
Science Area: Astrophysics
Cores: 6,912 (Hopper)
Core Hours Used: 2,306,241.3



SciDAC GSEP: Gyrokinetic Simulation of Energetic Particle Turbulence and Transport
Office: Fusion Energy Sciences
Investigator: Zhihong Lin
Science Area: Fusion Energy
Cores: 6,144 (Edison)
Core Hours Used: 39,981

Current CPU-Core Usage Breakdown

Cores in Use by Office:

Basic Energy Sciences

110,928

High Energy Physics

63,872

Fusion Energy Sciences

Cores in Use by Project Type:

DOE Base

199,112

SciDAC

60,664

Director Reserve project

Cores in Use by Science Category:

Materials Science

74,272

Fusion Energy

44,168

Browse...

NERSC_New_logo.jpg

close

(NOTE: jpg, gif, and png images are supported)

Upload

Your image will not be viewable until vetted

Upload complete

4.1 URL for a relevant web page describing your project

Enter ONLY ONE URL per line using the format:
http://www.nersc.gov

www.nersc.gov

(4000 characters maximum)

4.2 Image representing your project

(When you upload a new image, it will not be visible here until you refresh the page.

For renewed projects that previously had uploaded an image, this image will display after the project overview is saved.)

This is the size your image will display on the web. Click on the image to view the full size you uploaded.



Change Image

Remove Image

5. Project Name

TestProject



Project Overview Q1-9	DOE Funding Q10-11	Project Description Q12-14	Resources Requested Q15-18	PDSF Q19	Code Description(s) Q20	Data & Analytics Q21-22	Other Info Q23-25	Submit Request	Show Complete Request	
--------------------------	-----------------------	-------------------------------	-------------------------------	-------------	----------------------------	----------------------------	----------------------	----------------	-----------------------	--

ERCAP 2016 Request: 89039

PI: Test Pi

Last updated: 21-AUG-2015 (Not



Test Project

Save DOE Funding Q10-11 You MUST click the "Save" button here or at the bottom in order to save your work before selecting another tab.

10. Is this project funded by the DOE Office of Science?

☒ Yes, this project has direct grant support from the DOE Office of Science

- Who is your DOE Program Manager?

- DOE Office of Science Grant Number(s) (List all that apply)

(4000 character maximum)

0 characters entered. : 4000 characters remaining.

- If you also intend to use NERSC resources to support research that is not funded by the DOE Office of Science, list the funding agencies and grant numbers.

(4000 character maximum)

0 characters entered. : 4000 characters remaining.



U.S. DEPARTMENT OF
ENERGY

Office of
Science



(4000 character maximum)

48 characters entered. : 3952 characters remaining.

Project Description and count of character used.

12.2 Long Project Description

Longer project descriptions may be attached as a PDF file.

[Select to upload PDF attachment](#) (Maximum size: 20 MB)



U.S. DEPARTMENT OF
ENERGY

Office of
Science



No (If "No", complete only the following section of this question.)

This project is funded by: (complete boxes for all that apply)

- DOE, other than Office of Science (enter grant number(s) and source of support)

(4000 character maximum)

0 characters entered. : 4000 characters remaining.

- Work for others at DOE laboratory (enter grant number and sponsor)

(4000 character maximum)

0 characters entered. : 4000 characters remaining.

- Other funding agencies (enter grant number(s) and name of agency)

(4000 character maximum)

0 characters entered. : 4000 characters remaining.

- Other Funding (e.g. University department)

(4000 character maximum)

0 characters entered. : 4000 characters remaining.

- Describe the project's relevance to the DOE Office of Science mission.

Describe the project's relevance to one of the six Office of Science program offices and explain how your project's research supports that mission. Projects that can demonstrate alignment with a program office mission are much more likely to receive awards.

(4000 character maximum)

0 characters entered. : 4000 characters remaining.



U.S. DEPARTMENT OF
ENERGY

Office of
Science



11.1 Does this project intend to make use of any information (software or data) subject to the following legal controls on use?

- ☐ Classified or controlled military or defense information
- ☐ Export controlled or ITAR (International Traffic in Arms Regulations) information
- ☐ Personally identifiable information
- ☐ Protected health information
- ☐ Proprietary information
- ☐ None

11.2 If this project is given a NERSC award, I agree to monitor the usage associated with it to ensure that, to the best of my ability to

11.1 Does this project intend to make use of any information (software or data) subject to the following legal controls on use?

- ☐ Classified or controlled military or defense information
- ☐ Export controlled or ITAR (International Traffic in Arms Regulations) information
- ☐ Personally identifiable information
- ☐ Protected health information
- ☒ Proprietary information
- ☐ None

• Please explain:

(4000 character maximum)

0 characters entered. : 4000 characters remaining.



11.2 If this project is given a NERSC award, I agree to monitor the usage associated with it to ensure that, to the best of my ability to determine, usage is for the project described here.

☐ Yes

☐ No

11.3 For continuing projects: I have audited the MPP and/or HPSS usage associated with this project, and to the best of my ability to determine, all usage was for the project specified.

☐ Yes

☐ No

☐ N/A - New Project

Save DOE Funding Q10-11



U.S. DEPARTMENT OF
ENERGY

Office of
Science





Project Overview Q1-9	DOE Funding Q10-11	Project Description Q12-14	Resources Requested Q15-18	PDSF Q19	Code Description(s) Q20	Data & Analytics Q21-22	Other Info Q23-25	Submit Request	Show Complete Request	
--------------------------	-----------------------	-------------------------------	-------------------------------	-------------	----------------------------	----------------------------	----------------------	----------------	-----------------------	--

ERCAP 2016 Request: 89039

PI: Test Pi

Last updated: 21-AUG-2015 (Not Y



Test Project

Save Project Description Q12-14 You MUST click the "Save" button here or at the bottom in order to save your work before selecting another tab.

12. Project Description

Describe the research you are performing or will perform with NERSC resources.

12.1 Project Summary: provide a brief summary easily understood by people outside of your field (i.e., at a Scientific American level of sophistication --- Required).

What will this project accomplish? What is the significance of this work?

(4000 character maximum)

0 characters entered. : 4000 characters remaining.

12.2 Long Project Description

Longer project descriptions may be attached as a PDF file.

Select to upload PDF attachment (Maximum size: 20 MB)



U.S. DEPARTMENT OF
ENERGY

Office of
Science

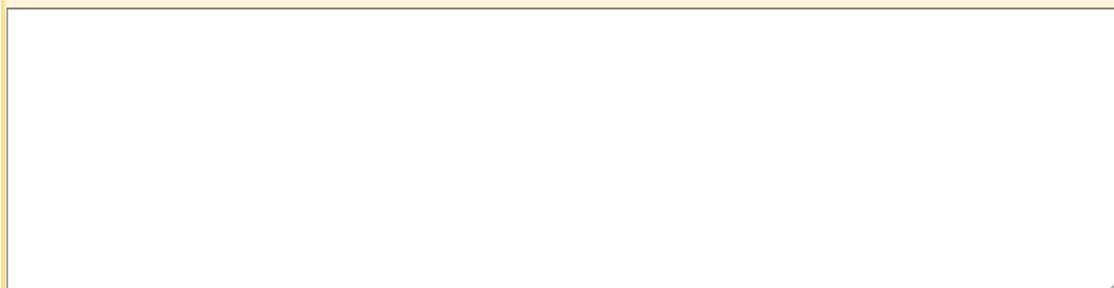


13.1 Accomplishments Summary

Summarize in terms easily understood by people outside of your field the accomplishments made by this project using NERSC resources in the previous year. Explain why your results are important and how the use of NERSC resources allowed you to meet your research objectives.
(Startup requests need not fill in this field.)

(4000 character maximum)

0 characters entered. : 4000 characters remaining.

A large, empty rectangular text box with a thin black border, intended for the user to enter their accomplishments summary.

13.2 Long Accomplishments Description

Longer accomplishments description may be attached as a PDF file.

[Select to upload PDF attachment](#) (Maximum size: 20 MB)

14. Publications Resulting From the Use of NERSC Resources - Enter in the order authors, title, journal

14.1 Refereed Publications

Enter only publications that have been accepted and are in press or published. Do not include publications entered here last year.

(4000 character maximum)

0 characters entered. : 4000 characters remaining.

14.2 Other publications to support this request.

Use this area for submitted as well as other types of publications.

(4000 character maximum)

0 characters entered. : 4000 characters remaining.



U.S. DEPARTMENT OF
ENERGY

Office of
Science



Project Overview Q1-9	DOE Funding Q10-11	Project Description Q12-14	Resources Requested Q15-18	PDSF Q19	Code Description(s) Q20	Data & Analytics Q21-22	Validate Current User List	Other Info Q23-25	Submit Request	Show Complete Request
--------------------------	-----------------------	-------------------------------	-------------------------------	-------------	----------------------------	----------------------------	-------------------------------	----------------------	----------------	-----------------------

ERCAP 2016 Request: 89172

PI: Test PI

Last updated: 28-AUG-2015 (N



Test Project

Save Resources Requested Q15-18 You MUST click the "Save" button here or at the bottom in order to save your work before selecting another tab.

15. Computational Resources

Resource	Alloc Type	Repo	Hours Used 2015	Hours Requested 2016
15.1 MPP Systems: Edison & Cori	Startup	m2247	0	50,000

15.4 Genepool (Joint Genome Institute researchers only)

Are you pre-authorized to use Genepool? ☐ Yes ☒ No

15.7 Project Directories

Project Directory Name	Storage Used 2015	Storage Requested 2016
m2247	0	1.0 TiB

Resource	Alloc Type	Repo	SRUs Used 2015	SRUs Requested 2016
15.8 Archival Storage	Startup	m2247	0	1,000

Show SRU Calculator

How much HPSS archival storage do you need?

10 Terabytes

15.9 Scratch Space

How much scratch space will your project need?

20 Terabytes

The Hopper MPP hour will remain the standard computing reference hour.

Edison will maintain a 2x charge factor, so estimate your needs taking this into consideration.

When Cori Phase 2 arrives and is available, we will do a renormalization for AY 2017 (rather than doing the renormalization two years in a row).

15.4 Genepool (Joint Genome Institute researchers only)

(Click the checkbox next to the GPSHARE name you need next year; after the save they will be renewed for next year and the checkbox will disappear.)

Are you pre-authorized to use Genepool? ☒ Yes ☐ No
GPSHARE GPSHARE Hours Used 2015

☐ plntanal	490,646
☐ plntanot	1,040,436
☐ plntasmb	1,137,126
☐ plntdvrs	854,418
☐ plntsprt	52,587

New GPSHARE Name

15.7 Project Directories

Project Directory Name	Storage Used 2015	Storage Requested 2016
plant	0	1.0 TiB



Resource	Alloc Type	Repo	SRUs Used 2015	SRUs Requested 2016
15.8 Archival Storage	Startup	m2247	0	
				Show SRU Calculator
How much HPSS archival storage do you need?				Terabytes
15.9 Scratch Space				
How much scratch space will your project need?				Terabytes



Powering **Scientific Discovery** Since 1974

Site Map | My NERSC | Share

search...

Login

[HOME](#) [ABOUT](#) [SCIENCE AT NERSC](#) [SYSTEMS](#) [FOR USERS](#) [NEWS & PUBLICATIONS](#) [R & D](#) [EVENTS](#) [LIVE STATUS](#)

FOR USERS

- » [Live Status](#)
- » [My NERSC](#)
- » [Getting Started](#)
- » [Computational Systems](#)
- » [Data & File Systems](#)
 - [Data Management Policies](#)
 - [NERSC File Systems](#)
 - [HPSS Data Archive](#)
 - [About](#)
 - [Getting Started](#)
 - [Storing and Retrieving Data](#)
 - [Advanced Usage Examples](#)
- » [Charging](#)
 - [SRU Formula Coefficients](#)
 - [SRU Calculator](#)
 - [Storage Statistics](#)
 - [Troubleshooting](#)
 - [Optimizing I/O performance on the Lustre file system](#)
 - [I/O Formats](#)
 - [Sharing Data](#)
 - [Transferring Data](#)
 - [Unix Groups at NERSC](#)
 - [Unix File Permissions](#)
- » [Network Connections](#)
- » [Queues and Scheduling](#)
- » [Job Logs & Analytics](#)

[Home](#) » [For Users](#) » [Data & File Systems](#) » [HPSS Data Archive](#) » [Charging](#)

HPSS CHARGING

NERSC uses Storage Resource Units (SRUs) to help manage HPSS storage. The goal is to provide a balanced computing environment with appropriate amounts of storage and adequate bandwidth to keep the compute engines fed with data. Performance and usage tracking allows NERSC to anticipate demand and maintain a responsive storage environment. Storage management also recognizes storage as a distinct resource in support of an increasing amount of data intensive computing. Storage management and the quota system are intended to encourage efficient usage by the user community.

SRU Management

SRUs are reported and managed through the NERSC Information Management (NIM) system. If a user is out of SRUs in all of their HPSS repositories that user will be restricted so that they can no longer write data to HPSS (although they will continue to be able to read data).

Users can check their HPSS SRU balances by logging in to the [NIM](#) and clicking on their "Account Usage" tab.

Calculating a User's SRUs

Three measures of use are used in computing SRUs:

1. Number of files stored (files)
2. GB of space used in the archive (space)
3. GB of I/O transferred (I/O).

TABLE OF CONTENTS

1. [SRU Management](#)
2. [Calculating a User's SRUs](#)
3. [Apportioning User SRUs to Repositories: Project Percents](#)
4. [User Quotas or Allowed Percents](#)
5. [User Statuses for HPSS](#)
6. [What happens if a repo or user SRU balance is negative?](#)
7. [SRU Usage Reports](#)

[Back to Top](#)



U.S. DEPARTMENT OF
ENERGY

Office of
Science





Hide SRU Calculator

How much HPSS archival storage do you need?

10

Terabytes

15.9 Scratch Space

How much scratch space will your project need?

20

Terabytes

Annual estimates: Number of Files:

0

 GB of space used in the archive (space):

0

 GB of I/O transferred (I/O):

0

SRU CALCULATOR

[About SRUs](#)

You can use this form to estimate your mass storage charges (in SRUs).

SRUs are calculated on a daily basis. Enter your estimated daily average number of files and data storage and your yearly estimate of data transferred to and from the HPSS system. Click on *Calculate* and your SRU charge will appear in the light blue boxes.

Enter average daily values for the allocation year

Number of files*:

10,000

Amount of data stored*:

85

GB

Enter total HPSS I/O for the allocation year

Data transferred:

170

GB

Calculate

Reset

This is your estimated SRU charge

Average per month:

102.54

SRUs

Per Year:

1,231

SRUs



U.S. DEPARTMENT OF
ENERGY

Office of
Science





Resource	Alloc Type	Repo	SRUs Used 2015	SRUs Requested 2016
15.8 Archival Storage	Startup	m2247	0	
				Show SRU Calculator
How much HPSS archival storage do you need?				Terabytes
15.9 Scratch Space				
How much scratch space will your project need?				Terabytes

16. Brief Justification for Resources Requested Above

(4000 character maximum)

0 characters entered. : 4000 characters remaining.

17. Events or Deadlines Affecting Computational Needs Through the Year

Please describe any time(s) this coming allocation year that you expect will spike your demand for resources.

(4000 character maximum)

0 characters entered. : 4000 characters remaining.

18. Real-Time Computing Needs

Does your project require real-time computing resources?

(For example does your project require immediate access to computing resources because it is connected to a live experiment.)

☐ Yes ☐ No

Save Resources Requested Q15-18

18. Real-Time Computing Needs

Does your project require real-time computing resources?

(For example does your project require immediate access to computing resources because it is connected to a live experiment.)

☒ Yes ☐ No

• If you answer Yes above, please explain:

(4000 character maximum)

0 characters entered. : 4000 characters remaining.



Project Overview Q1-9	DOE Funding Q10-11	Project Description Q12-14	Resources Requested Q15-18	PDSF Q19	Code Description(s) Q20	Data & Analytics Q21-22	Other Info Q23-25	Submit Request	Show Complete Request	
--------------------------	-----------------------	-------------------------------	-------------------------------	-------------	----------------------------	----------------------------	----------------------	----------------	-----------------------	--

ERCAP 2016 Request: 89039

PI: Test Pi

Last updated: 21-AUG-2015 (Not Yet Approved)



This page is for PDSF users only. You should skip this section unless you have prior approval for a PDSF project. The PDSF is a special-use physics system hosted by NERSC.

Test Project

Are you authorized to use the PDSF system? ☐ Yes ☒ No

or

Project Overview Q1-9	DOE Funding Q10-11	Project Description Q12-14	Resources Requested Q15-18	PDSF Q19	Code Description(s) Q20	Data & Analytics Q21-22	Other Info Q23-25	Submit Request	Show Complete Request	
--------------------------	-----------------------	-------------------------------	-------------------------------	-------------	----------------------------	----------------------------	----------------------	----------------	-----------------------	--

ERCAP 2016 Request:

PI:

Last updated: (Not Yet Approved)



This page is for PDSF users only. You should skip this section unless you have prior approval for a PDSF project. The PDSF is a special-use physics system hosted by NERSC.

Are you authorized to use the PDSF system? ☒ Yes ☐ No

19.1 PDSF Repos

No PDSF repos for 2016

Save PDSF information

You MUST click the "Save" button here or at the bottom in order to save your work before selecting another tab.

Do you need a new repo (project account) ? PDSF projects must be approved.

Yes ☐

No ☒

If yes, please enter your experiment name (3-8 characters):

Save PDSF information



U.S. DEPARTMENT OF
ENERGY

Office of
Science



Project Overview Q1-9	DOE Funding Q10-11	Project Description Q12-14	Resources Requested Q15-18	PDSF Q19	Code Description(s) Q20	Data & Analytics Q21-22	Validate Current User List	Other Info Q23-25	Submit Request	Show Complete Request
--------------------------	-----------------------	-------------------------------	-------------------------------	---------------------	----------------------------	----------------------------	-------------------------------	----------------------	----------------	-----------------------

ERCAP 2016 Request: 89045

PI: Test PI

Last updated: 25-AUG-2015 (Not Yet



This page is for **PDSF** users only. You should skip this section unless you have prior approval for a PDSF project. The **PDSF** is a special-use physics system hosted by NERSC.

Test project/repositories

Are you authorized to use the PDSF system? ☒ Yes ☐ No

19.1 PDSF Repos

Existing PDSF repos

PDSF Repo Renew ?

testpdsf

☐

Select the repositories you want to renew for 2016, then click the arrow below to renew them.



No PDSF repos for 2016

Please renew your request before filling out the rest of the fields on the page.

Save PDSF information

You MUST click the "Save" button here or at the bottom in order to save your work before selecting another tab.

Do you need a new repo (project account) ? **PDSF projects must be approved.**

Yes ☐

No ☒

If yes, please enter your experiment name (3-8 characters):

Save PDSF information



U.S. DEPARTMENT OF
ENERGY

Office of
Science

19.2 PDSF uses a "sponsored" model. How does your project plan to fund your PDSF usage (compute and storage)?

(4000 character maximum)

0 characters entered. : 4000 characters remaining.

19.3 How many total CPU hours do you need for the coming year (please describe your codes on the codes tab)?

Hours (Integer value only)

19.4 Describe any special characteristics of your workflow (e.g. non-conforming)

(4000 character maximum)

0 characters entered. : 4000 characters remaining.

19.5 How much experiment specific storage do you need?

Terabytes (Integer value only)





Project Overview Q1-9	DOE Funding Q10-11	Project Description Q12-14	Resources Requested Q15-18	PDSF Q19	Code Description(s) Q20	Data & Analytics Q21-22	Validate Current User List	Other Info Q23-25	Submit Request	Show Complete Request
--------------------------	-----------------------	-------------------------------	-------------------------------	-------------	----------------------------	----------------------------	-------------------------------	----------------------	----------------	-----------------------

ERCAP 2016 Request: 89045

PI: Test PI

Last updated: 25-AUG-2015 (N



Test project/repositories

WhereUFrom	WhoBU	Add another code
------------	-------	------------------

Save Code Description Q20 You MUST click the "Save" button here or at the bottom in order to save your work before selecting another tab.

20. Code and Application Descriptions

You should complete a copy of this page for each of your project's most frequently used codes and applications. Each code will appear on a separate tab (under the main set of tabs.) Click on the "Add another code" tab to pull up a blank copy of this page for each new code.

Code Name	WhoBU
Code Description What does the code do? (2000 characters max)	15 characters entered. : 1985 characters remaining. Determines user
URL for code description	www.personID.org
Machines to be used Where do you plan to run this code?	☒ Edison ☒ Cori Phase 1 ☒ Genepool (Joint Genome Institute researchers only) ☒ PDSF (PDSF member projects only)



Percent of allocation What percent of the project's overall allocation do you expect this code to use?	50 %
What is the maximum number of nodes the code can use?	256
What is the typical number of nodes used by this code in production runs?	8
If you run serial jobs, how many simultaneous jobs would you like to run? For PDSF users: how many simultaneous jobs do you plan to run?	100 number of serial jobs
How do you perform I/O?	☒ Files shared between processors ☐ One file per processor or node
Programming Languages Used	☒ Assembler ☒ C language ☒ C++ ☒ Fortran77 ☒ Fortran90 ☒ Fortran95 ☒ Fortran 2003+ ☒ Java ☒ Python Other: ShellScript, Other Programmir
Parallel Programming Models Used	☒ MPI ☐ OpenMP ☐ PGAS ☐ Posix Threads Other:



Project Overview Q1-9	DOE Funding Q10-11	Project Description Q12-14	Resources Requested Q15-18	PDSF Q19	Code Description(s) Q20	Data & Analytics Q21-22	Validate Current User List	Other Info Q23-25	Submit Request	Show Complete Request
--------------------------	-----------------------	-------------------------------	-------------------------------	-------------	----------------------------	----------------------------	-------------------------------	----------------------	----------------	-----------------------

ERCAP 2016 Request: 89045

PI: Test PI

Last updated: 25-AUG-2015 (N



Test project/repositories

Save Data & Analytics Q21-22 You MUST click the "Save" button here or at the bottom in order to save your work before selecting another tab.

21. Data & Analytics

21.1 Which I/O formats/libraries, databases, workflow tools, and data transfer tools does your work require at NERSC?

- | | | | |
|---|---|---|--|
| ☐ Fireworks | ☐ Globus Online | ☐ GridFTP | ☐ HDF5 |
| ☒ MongoDB | ☒ MySQL | ☐ NetCDF | ☒ PostgreSQL |
| ☐ Raw Binary | ☐ ROOT | ☒ SciDB | ☐ Swift |
| ☐ Text (ASCII, CSV) | ☐ Tigres | | |

Other: Cassandra, GraphLab, Hadoop, Omero, Other NoSQL, OI

21.2 Which imaging tools, data analytics frameworks, and data visualization tools does your work require at NERSC?

- | | | | |
|---|--|--|-----------------------------------|
| ☒ Fiji | ☒ MATLAB | ☐ OMERO | ☐ Paraview |
| ☒ Python | ☒ R Language | ☒ ROOT | ☐ Spark |
| ☒ UV-CDAT | ☒ VisIt | ☒ VMD | |

Other: ADIOS, Catalyst (Paraview), CDAT, Climate Data Operatr

22. Data Sharing

22.1 Do you need to share data or access NERSC compute resources over the web? If so, describe any special resources you may need, such as software, data storage, and/or bandwidth requirements.

(4000 character maximum)

0 characters entered. : 4000 characters remaining.

How much data do you expect your project to move to NERSC from external sources? Terabytes



Project Overview Q1-9	DOE Funding Q10-11	Project Description Q12-14	Resources Requested Q15-18	PDSF Q19	Code Description(s) Q20	Data & Analytics Q21-22	Validate Current User List	Other Info Q23-25	Submit Request	Show Complete Request
--------------------------	-----------------------	-------------------------------	-------------------------------	-------------	----------------------------	----------------------------	-------------------------------	----------------------	----------------	-----------------------

ERCAP 2016 Request: 89045

PI: Test PI

Last updated: 25-AUG-2015 (No



Test project/repositories

Save All Rows You MUST click the "Save" button here or at the bottom in order to save your work before selecting another tab.

WARNING: If you change the Project Role of a User or a Project Manager to Deleted, that change will take effect immediately.

PI and Proxy role change requests should be submitted to NERSC Account Support.

testmpp#15 Project User Information and Roles as of 08/28/2015

Name	Email	Phone	Organization	Role	Next Year Status	Signed Policies
ADMIN, Test	support@nersc.gov	510-486-8612	NERSC	User	Keep	EXEMPT
Antypas, Katie	*****@lbl.gov	510-486-9999	NERSC	User	Keep	ONFILE
Bagwell, Clayton	*****@nersc.gov.gov	510-495-9999	NERSC	PI Proxy	Keep	ONFILE
User II, Test	*****@nersc.gov	510-486-9999	NERSC	User	Delete next AY	EXEMPT
Whitney, Cary	*****@lbl.gov	510-495-9999	NERSC	User	Keep	ONFILE

☒ I certify that the above user information is correct for all active users in this Project. (Note: You have already certified your user list. You can re-certify if there have been any changes.)

Save All Rows



Project Overview Q1-9	DOE Funding Q10-11	Project Description Q12-14	Resources Requested Q15-18	PDSF Q19	Code Description(s) Q20	Data & Analytics Q21-22	Validate Current User List	Other Info Q23-25	Submit Request	Show Complete Request
--------------------------	-----------------------	-------------------------------	-------------------------------	-------------	----------------------------	----------------------------	-------------------------------	----------------------	----------------	-----------------------

ERCAP 2016 Request: 89045

PI: Test PI

Last updated: 28-AUG-2015 (M)

Test project/repositories

Save Other Info Q23-25 You MUST click the "Save" button here or at the bottom in order to save your work before selecting another tab

23. Other HPC Support

List High Performance Computing support for this project from outside NERSC that you currently have or expect in the next year. Also, indicate if you have applied for a DOE INCITE award.

A-2-Q-23 - Other HPC Support: No INCITE award was applied for.
(Text field with 4000 character limit.)

24. Additional Information - If your project has special requirements that you would like NERSC to consider, describe them here.

Enter any additional information you would like the review committees to consider in support of this request.

A-2-Q-24 - Additional Information: None at this time.
(Text field with 4000 character limit.)

25. Feedback

Use this space to provide feedback on ERCAP, the NERSC application/allocation process.

A-2-Q-25 - Feedback: The ERCAP process is wonderful. And that Allocations Support guy sure is great!
(Text field with 4000 character limit.)



U.S. DEPARTMENT OF
ENERGY

Office of
Science





Project Overview Q1-9	DOE Funding Q10-11	Project Description Q12-14	Resources Requested Q15-18	PDSF Q19	Code Description(s) Q20	Data & Analytics Q21-22	Validate Current User List	Other Info Q23-25	Submit Request	Show Complete Request
--------------------------	-----------------------	-------------------------------	-------------------------------	-------------	----------------------------	----------------------------	-------------------------------	----------------------	----------------	-----------------------

ERCAP 2016 Request: 89045

PI: Test PI

Last updated: 28-AUG-2015 (N



Test project/repositories

Save Submit Request You MUST check the finished box and select the "Save" button in order to submit your request.

28. Submit Your Request

Choose Finished if you wish to submit your finished request. Only finished requests will be considered for awards.

☒ Finished: This request is finished and ready for review.

Save Submit Request



U.S. DEPARTMENT OF
ENERGY

Office of
Science





Project Overview Q1-9	DOE Funding Q10-11	Project Description Q12-14	Resources Requested Q15-18	PDSF Q19	Code Description(s) Q20	Data & Analytics Q21-22	Validate Current User List	Other Info Q23-25	Submit Request	Show Complete Request
--------------------------	-----------------------	-------------------------------	-------------------------------	-------------	----------------------------	----------------------------	-------------------------------	----------------------	----------------	-----------------------

ERCAP 2016 Request: 89172

PI: Test PI

Last updated: 28-AUG-2015 (Not Yet Finished)

Download PDF

Test Project

ERCAP Request #89172 for FY2016

1. Principal Investigator

Name	Phone	Email
PI, Test	510-486-8612	support-notice@nersc.gov

2. Other Authorized Preparers - Preparer will be designated a PI PROXY

3. Senior Investigators

4. Project Title

Test Project

4.1 URL for a relevant web page describing your project

5. Project Name

TestPrjct

6. Project Class

Startup

7. Sponsoring Site

USA: Lawrence Berkeley National Lab - NERSC

8. Science Category

Computer Science

9. DOE Office and Program

ASCR - Computer Sciences



ERCAP Request #89172 for FY2016

1. Principal Investigator

Name	Phone	Email
PI, Test	510-486-8612	support-notice@nersc.gov

2. Other Authorized Preparers - Preparer will be designated a PI PROXY

3. Senior Investigators

4. Project Title

4.1 URL for a relevant web page describing your project

5. Project Name

6. Project Class

7. Sponsoring Site

8. Science Category

9. DOE Office and Program



Helpful URLs

<http://www.nersc.gov/users/accounts/allocations/deadlines>

<http://www.nersc.gov/users/accounts/allocations/overview/>

<http://www.nersc.gov/users/accounts/allocations/first-allocation>

<https://nim.nersc.gov>

Contact Information:

Accounts & Allocations:

accounts@nersc.gov

allocations@nersc.gov

Phone:

510-486-8612 or

1-800-66-NERSC opt 2

Questions?





National Energy Research Scientific Computing Center



U.S. DEPARTMENT OF
ENERGY

Office of
Science

