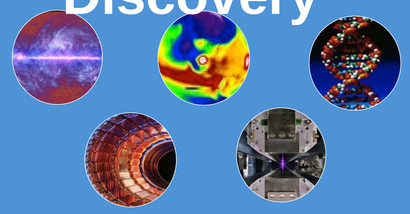
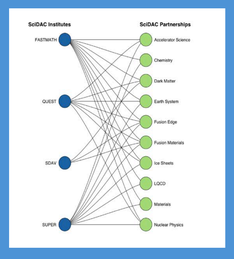
Accelerating Science Discovery Across Office of Science Apps

HPC for Science Discovery

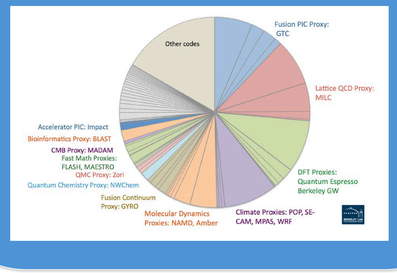


The mission of the National Energy Research Scientific Computing Center (NERSC) is to accelerate scientific discovery at the DOE Office of Science through high performance computing and data analysis.

NERSC measures HPC performance as delivered across a wide range of Office of Science computing needs.



SciDAC Institutes and Partnerships (left) connect to wide range of algoritms in the NERSC workload (below)



Introducing Cori

Cori will support the broad Office of Science research community through a transition to more energy efficient architectures

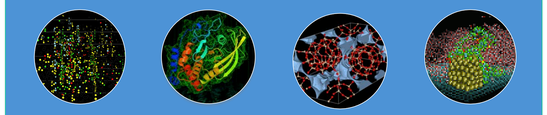
Cray XC system with > 9300 Intel Knights Landing nodes
- Self-hosted, (not an accelerator) manycore processor with over 60 cores per node
- On-package high-bandwidth memory

Data Intensive Science Support
- NVRAM Burst Buffer to accelerate data intensive applications
- 28 PB of disk, 432 GB/sec I/O bandwidth

Image source: wikipedia

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

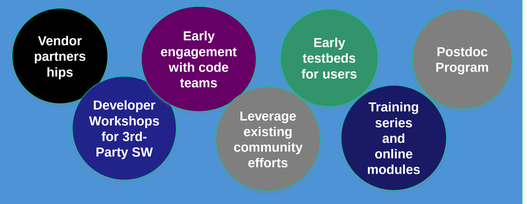
Application Readiness



NERSC stays focused on delivering computing performance to scientists.

Technology-driven disruptions in computing architecture present opportunities and risks to scientists who rely on performance at scale. The **NE**RSC **S**cience Application **P**rogram (**NESAP**) addresses coming disruptions with an eye on delivering sustained performance to our users.

NESAP will help NERSC users transition to more energy-efficient computing. Exposing algorithm parallelism, utilizing longer vector unit, and managing data locality



- Join staff in app optimization
- Awards up to 2M MPP hrs in 2015
- Early access to KNL hardware, Cray and Intel software, Cori dev system

Inquire within

Reliable & Efficient HPC

Petascale Computing, Petabyte Parallel Storage, Expert Scientific Consulting, Overall User Focus

Email us: consult@nersc.gov

Big Data Capabilities

High performance peering point for international science data collaborations, massive scientific data analysis, GlobusOnline, HPSS, Hadoop, FastBit, web services, and data-centric testbeds.