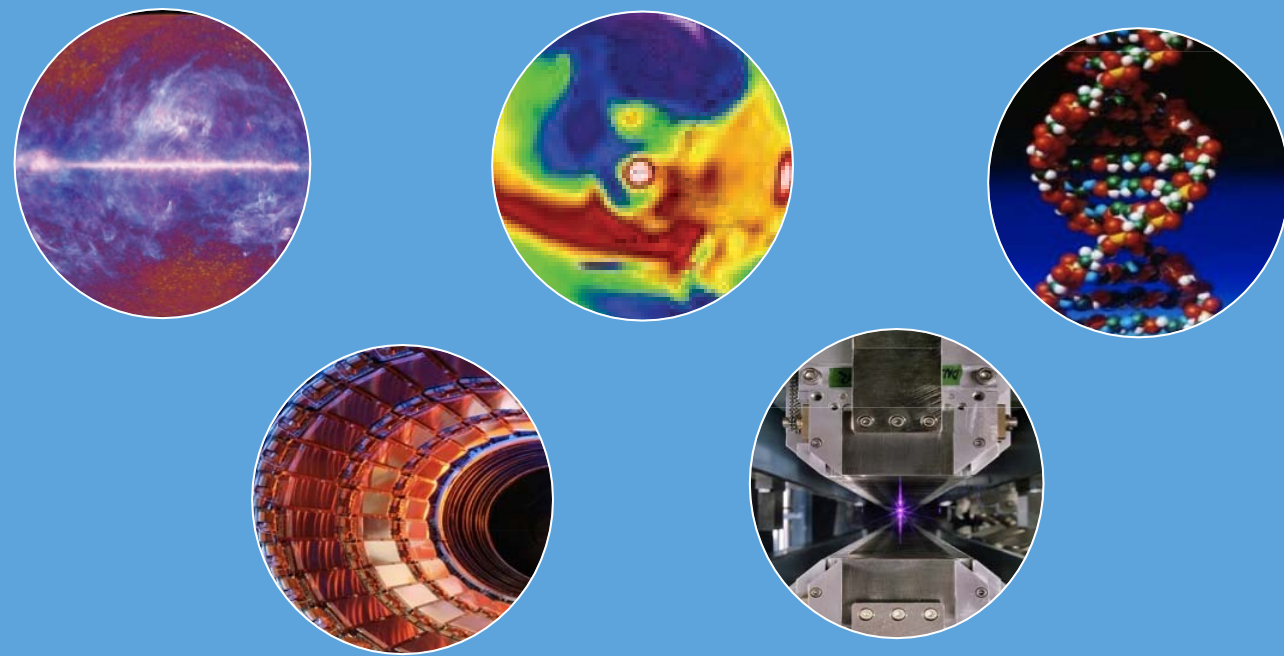


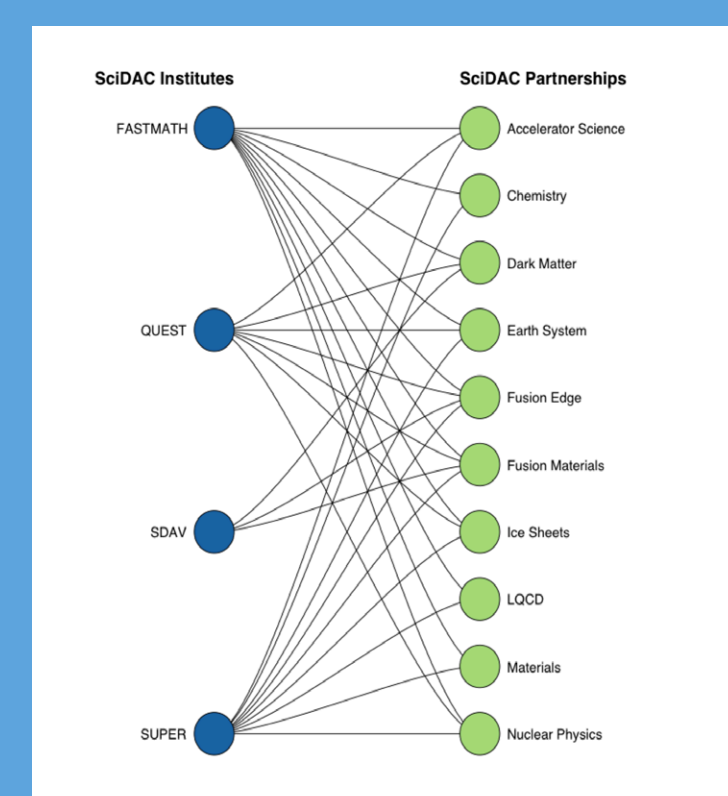
# Accelerating Science Discovery Across Office of Science Apps

## HPC for Science Discovery

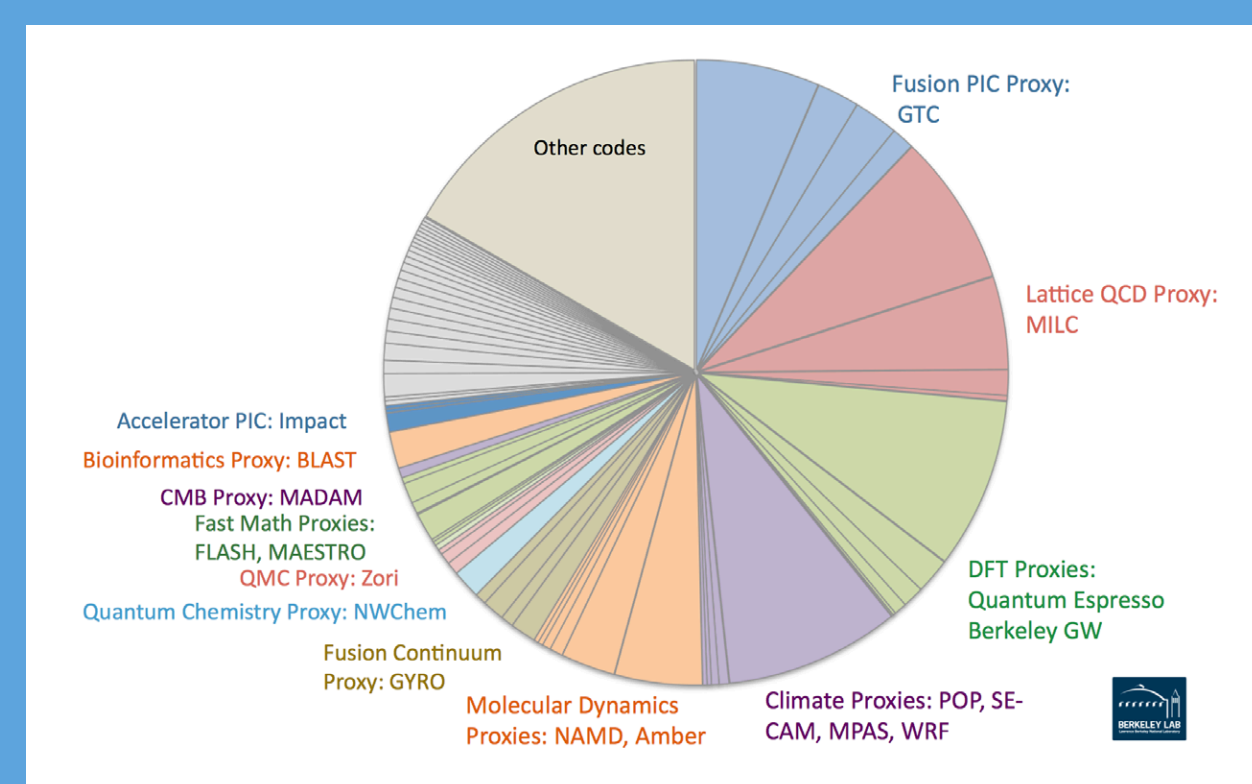


The mission of the National Energy Research Scientific Computing Center (NERSC) is to accelerate scientific discovery at the DOE Office of Science through high performance computing and data analysis.

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 algorithms 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

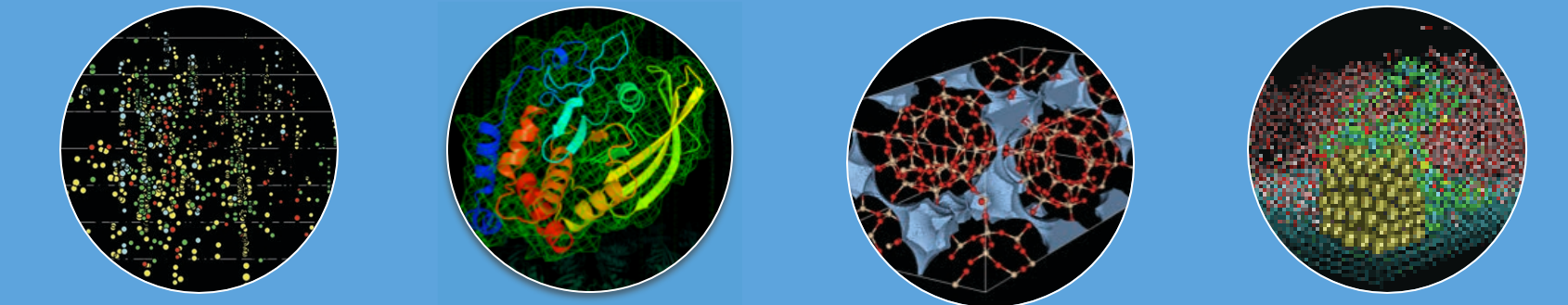
Data Intensive Science Support

- NVRAM Burst Buffer to accelerate data intensive applications



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 **NERSC Science Application Program (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
- Early access to KNL hardware, Cray and Intel software, Cori dev system

# NERSC



## Reliable & Efficient HPC

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

Email us: [consult@nersc.gov](mailto: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.

