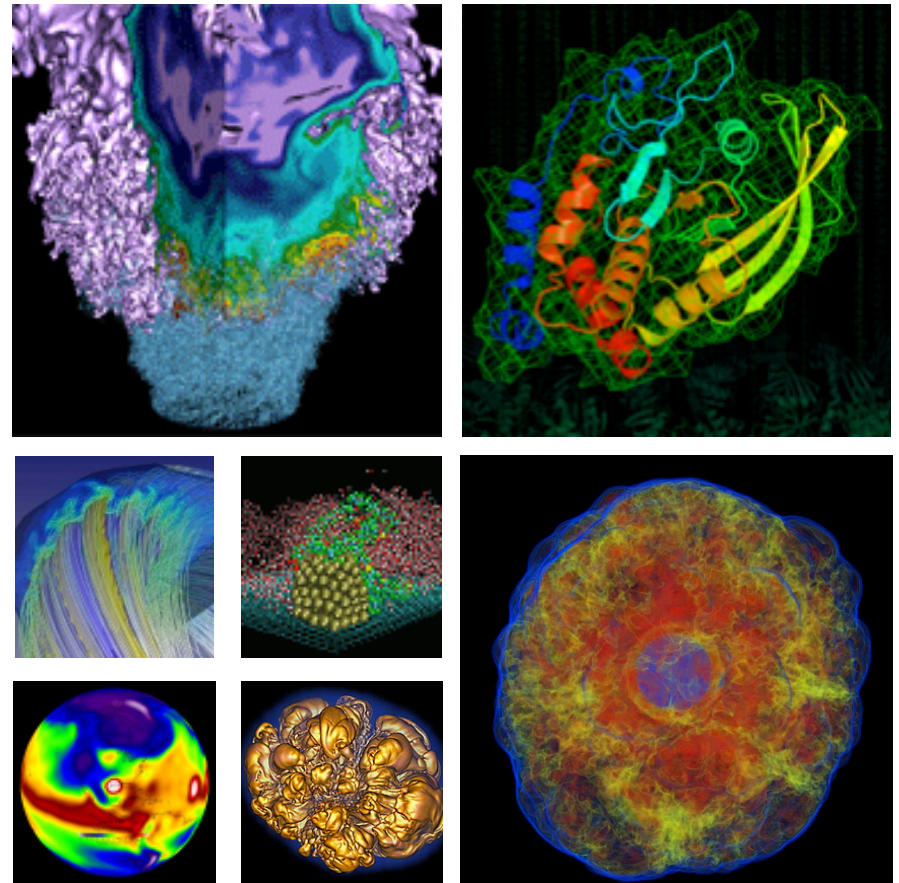


Cori Phase 2 update



Katie Antypas
NERSC Deputy for Data Science

Cori: A pre-exascale supercomputer for the Office of Science workload



- System will begin to transition the workload to more energy efficient architectures
- Will showcase technologies expected in exascale systems
 - Processors with many ‘slow’ cores and longer vector units
 - Deepening memory and storage hierarchies



Image source: Wikipedia

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



Cori Configuration – 64 cabinets of Cray XC system



- Over 9,300 Knights Landing compute nodes
- ~1,600 Haswell compute nodes as a data partition
- Aries Interconnect (same as on Edison)
- >5x application performance of Edison system
- Lustre File system
 - 28 PB capacity, >700 GB/sec I/O bandwidth
- NVRAM “Burst Buffer” for I/O acceleration
 - ~1.5PB capacity, > 1.5 TB/sec I/O bandwidth
- Significant Intel and Cray application transition support
- Delivery in two phases, summer 2015 and summer 2016
- Installation in new Facility on Berkeley Lab main campus

- **KNL white boxes are on their way to NERSC. Arriving any day now.**
 - 8 single node boxes of KNL, final spin of the silicon
 - NERSC Staff and NESAP teams will have access to this early hardware
- **We expect delivery of Cori Phase 2 sometime in the July/August timeframe.**
- **Within a month, we should be able to narrow down that deliver range to weeks**

- **NESAP teams will be the first to have access to Cori Phase 2 and will get significant time on the system**
- **We will enable other users in a small partition to port code, work on threading, vectorization and other optimizations**
- **Before other users will be enabled on full system, they will need to show readiness for Knights Landing.**
 - Complete dungeon session worksheet
 - Show results from running on a few nodes

- **There will be no charging on Cori Phase 2 in 2016**
- **We will renormalize hours in 2017 to a ‘Cori’ hour**
 - Stay tuned for more details
 - Cori hour will be 2-3x an Edison hour, depending on real application performance.