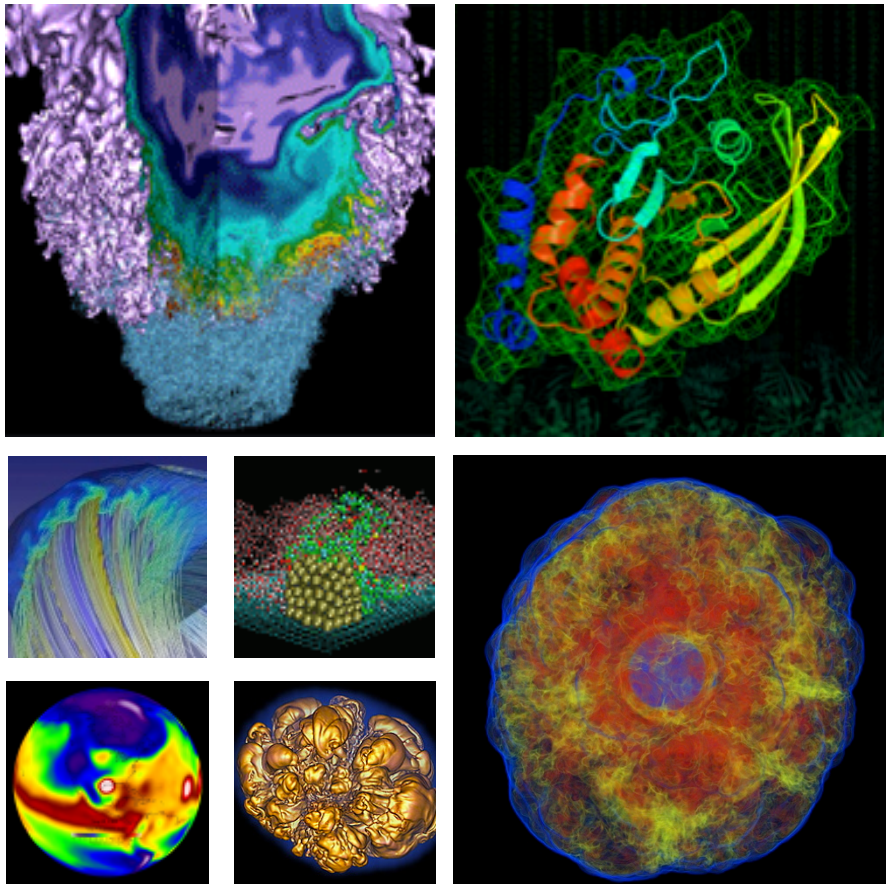
Meeting Goals & Process



Harvey Wasserman

Large Scale Computing and Storage Requirements for High Energy Physics Research: Target 2017

December 3, 2012

Logistics: Schedule

- **Agenda on workshop web page**
  - http://www.nersc.gov/science/requirements/HEP
- **Mid-morning / afternoon break, lunch**
- **Self-organization for dinner**
- **Multiple science areas, one workshop**
  - Science-focused but crosscutting discussion
  - Explore areas of common need (within HEP)
- **Wednesday: overview, review, key findings, and reach agreement on key findings**

Expectations: Final Report

- **Final reports from 2009-2011 workshops (Target: 2014) on web**
  - http://www.nersc.gov/science/requirements
- **HEP Intro + PI case studies + NERSC summary**
  - Final Case Studies due January 7
  - Richard / Harvey review
  - PI/DOE draft review Feb 15
  - Final: May 1 (?)

Logistics: Remote Presentation

- **Need your view graphs in advance**

Why is NERSC Collecting Computational Requirements?

- **NERSC is science driven.**
- **Your input helps create the science-based justification for**
  - acquiring the resources and
  - implementing the services that you need to reach your research goals
- **Help NERSC make informed decisions for technology and services**
  - guide procurements, staffing, and to improve the effectiveness of NERSC services.
- **Result: NERSC can better provide what you need for your work**
- **Requirements concern full set of services NERSC provides**

ERCAP Deep Dive

- **ERCAP: Energy Research Computing Allocations Process**
- **This is how you get an allocation at NERSC**
- **Short, proposal-based process**
- **DOE decides (except for 10%)**
- **Today's requirements review is**
  - similar to ERCAP: Resources needed + narrative tying to science goals
  - different from ERCAP: Longer term focus; Not what you think you can get, but what you need

Case Study Thoughts (1 of 2)

- **Key is to tie computational need to expected science outcome – as specifically as possible.**
  - Science -> algorithm -> computation parameters -> resources needed
- **We seek requirements not encumbered by "policy."**
- **Storage:**
  - Scratch: output from runs
  - Project: shared code, data
  - HPSS Archive
- **Entire process is mutually beneficial.**

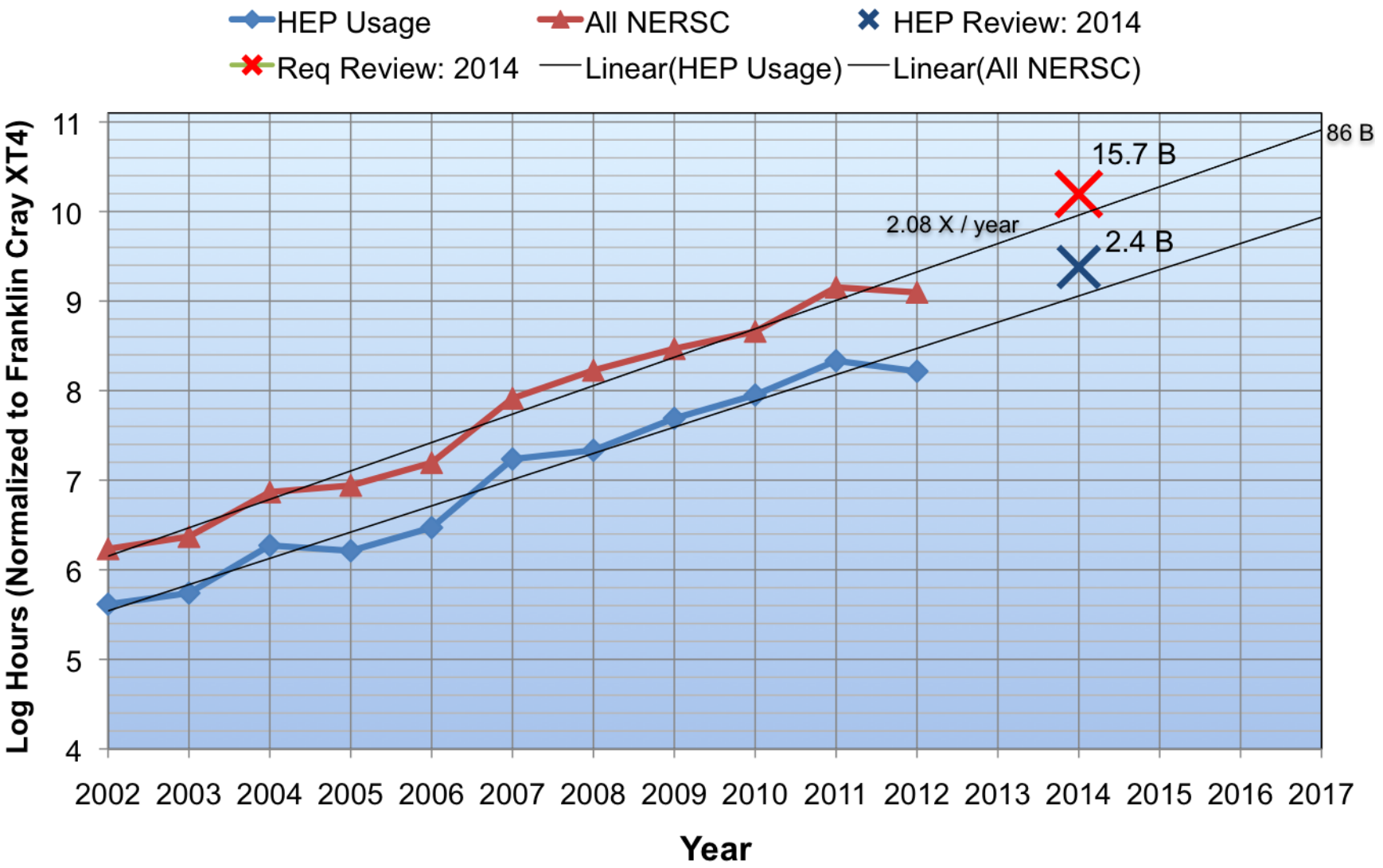
Case Study Thoughts (2 of 2)

- **Important consideration for this review: number of case studies**
- **Seek minimum set that covers**
  - necessary science areas
  - resource requirements
  - Goal is to represent significant fraction of NERSC HEP science but not over-diversify
- **13 (?) case study talks now**
  - plus 1-2 additional contributions from absentee PIs

Targets and Strategy

- **New system every ~3 years, run for 5-6 years**
- **Two years of requirements reviews, target 2017**
- **Hopper (NERSC-6) in production since 2011**
- **NERSC-7 installation begins next TODAY!**
- **NERSC-8 RFP ~May, 2013; installation 2015-2016**
  - Target is 10-30X Hopper sustained performance
  - Hopper provides about 1B hours per year
- **Requirements from this review will help support NERSC-9**

HEP and NERSC Usage



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