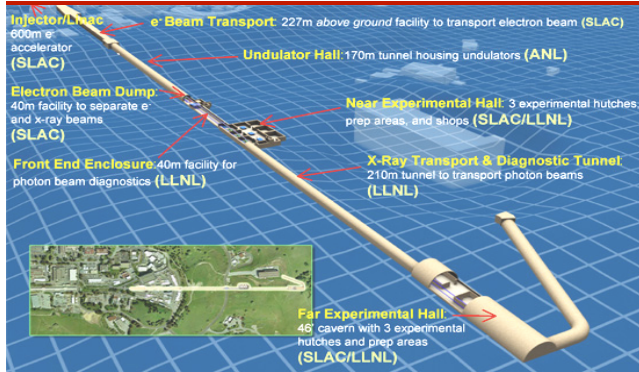# Scientific Computing

Amber Boehnlein,
Richard Dubois
June 20, 2011

Local Organising Committee:

Amedeo Perazzo
Amber Boehnlein
Arno Candel
Ashley Deacon
Richard Dubois
Randy Melen
Brian Moritz
Tony Johnson
Jacek Becla
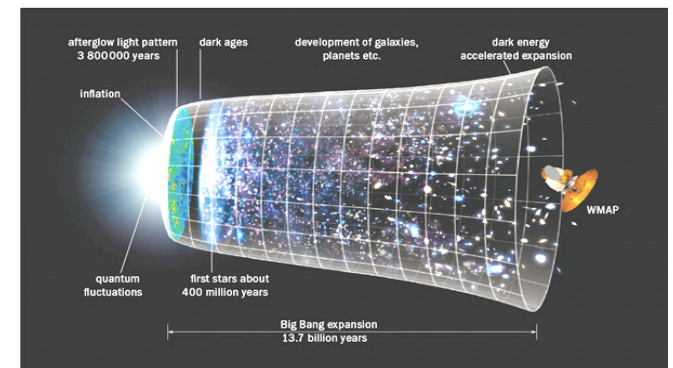Travis Brooks

Scientific Objectives → Operations Agenda

SLAC SCIENTIFIC OBJECTIVES

- Premier Photon Science Laboratory
  - Internationally leading facilities
  - Performing science programs to exploit opportunities and drive the future
- Premier electron accelerator laboratory
- Targeted programs in particle physics, particle astrophysics & cosmology

Scientific Objectives → Computing
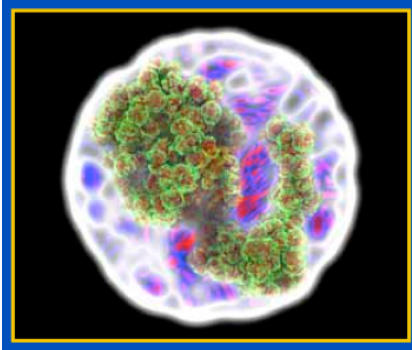
LCLS

Computational Science

SLAC SCIENTIFIC OBJECTIVES
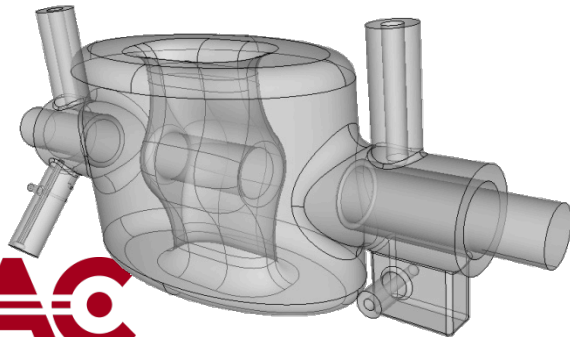
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LHC deflecting cavity
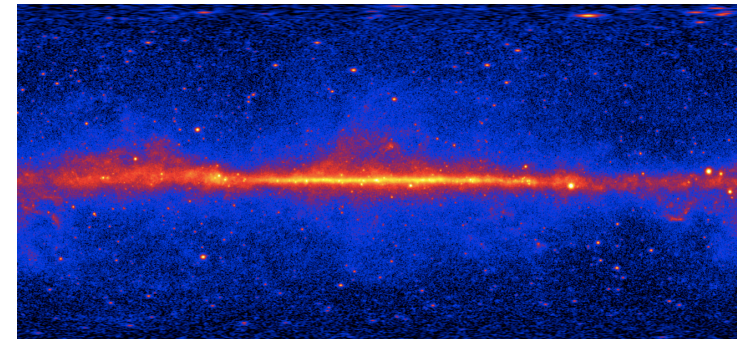
Needs and Directions

- Growing User Community
  - Visitors and resident users

- Generates massive amounts of data
  - Distribution and analysis

Analysis algorithms

Detectors

Computing

Visualization

Theory Simulations

Data Acquisition

Data Management

World

Data Sharing

On-line

Off-line

Data Mining

Collaboration tools

simulations

mid-range CPU cycles

SLAC

NATIONAL ACCELERATOR LABORATORY
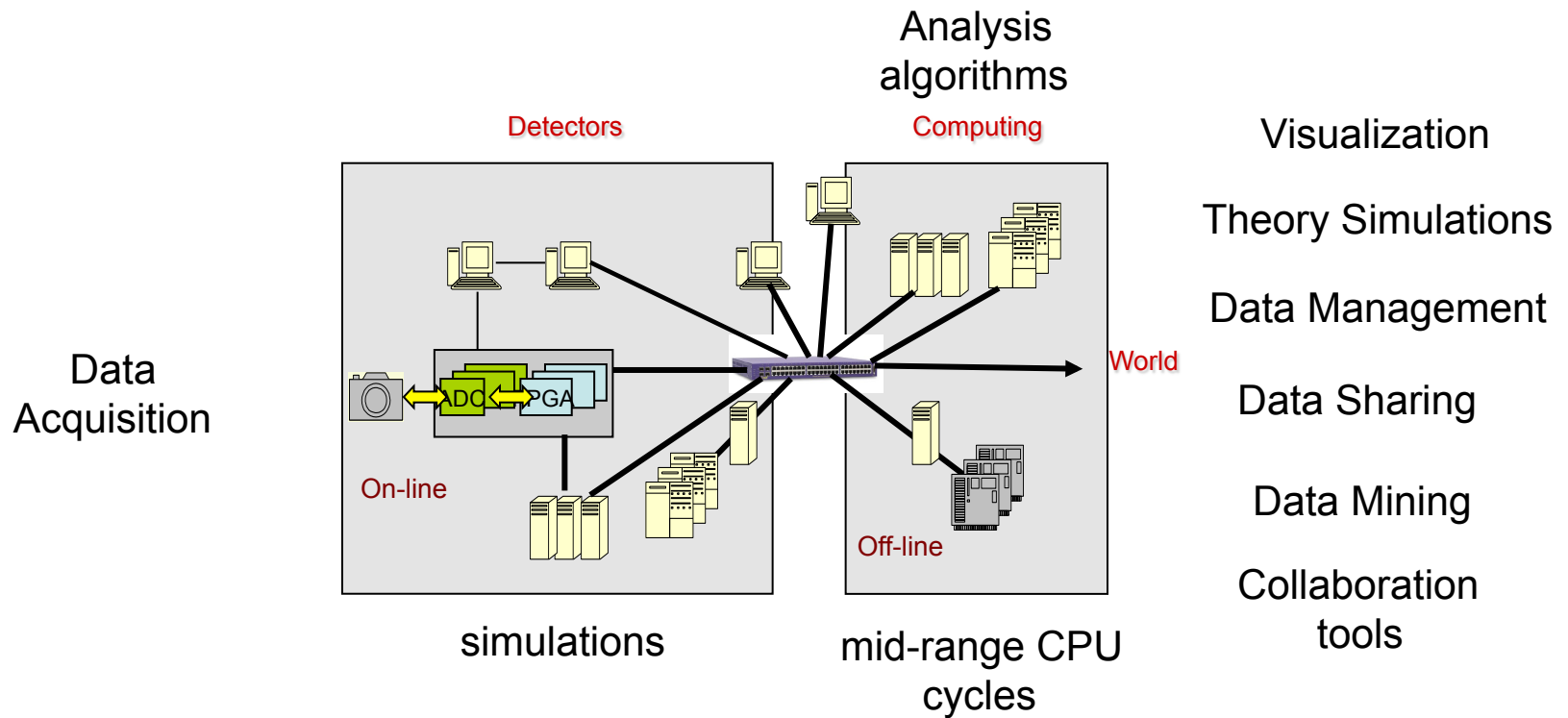
Shared Governance Model for Scientific Computing

- Scientific Computing underlies all Lab Scientific objects
  - The needs are distributed across the lab
- Some of the expertise and knowledge and resources are also distributed
- Some of the expertise and resources are shared in common.
  - CD Unix and Storage teams
- Solution is a shared governance model
  - Steering Committee with lab wide representation collaborating with the Head of Scientific Computing

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Scientific Computing
Flow of Collaboration

Exec Council

SC Steering Committee

Strategic planning,
Regular reviews,
Communications,
else dispute resolution

AD comp coord

SSRL comp coord

LCLS comp coord

Planning, Implement

CD's SC Head

Planning, Implement

PPA comp coord

PS comp coord

online

offline

CD/IT

Fermi

ATLAS

EXO

etc.

SLAC
NATIONAL ACCELERATOR LABORATORY
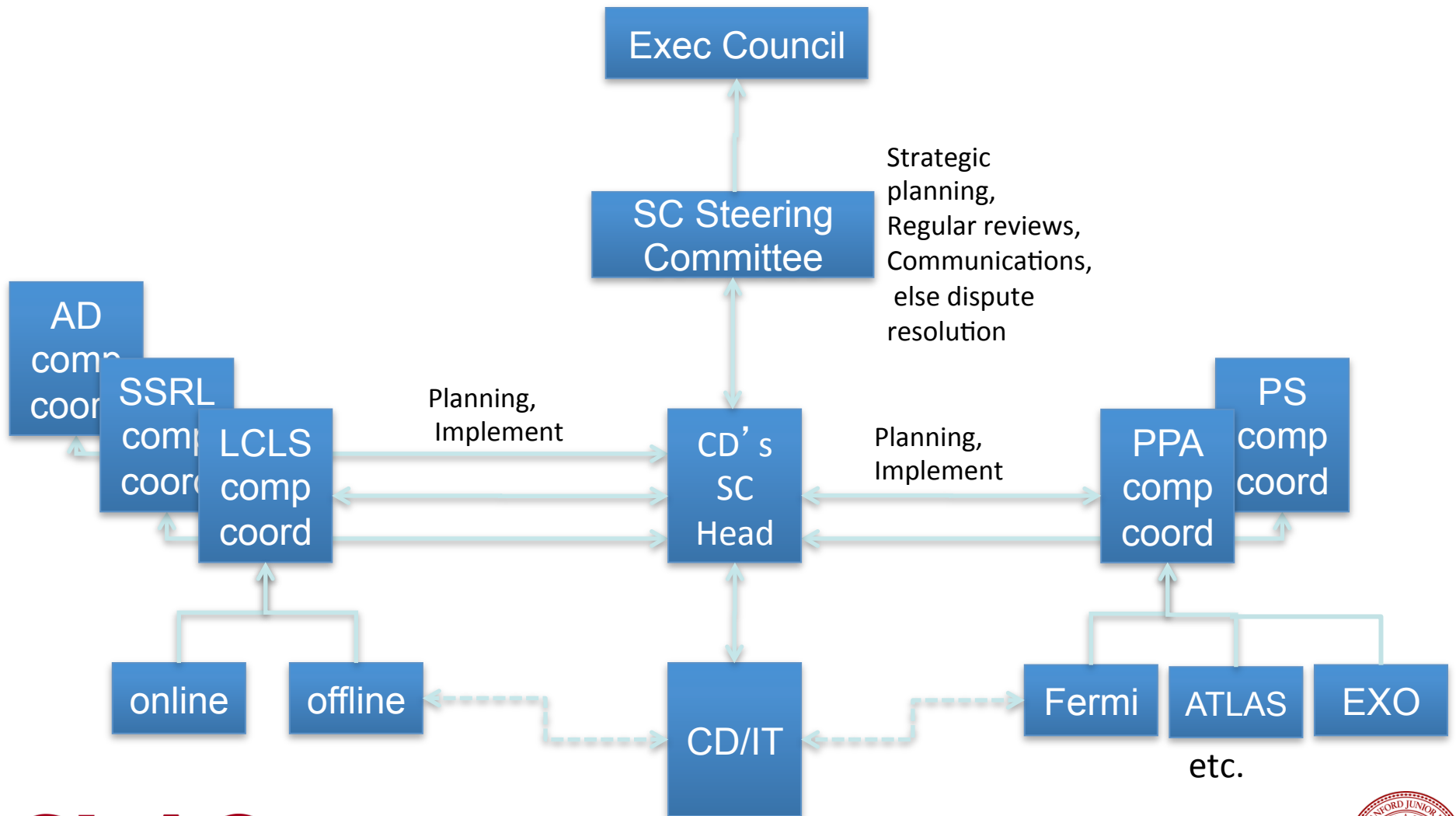
SCSC Membership

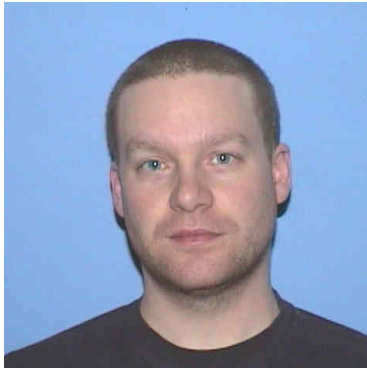Amber Boehnlein - CD   Amedeo Perazzo - LCLS   Arno Candel - AD   Ashley Deacon - SSRL   Brian Moritz - PS
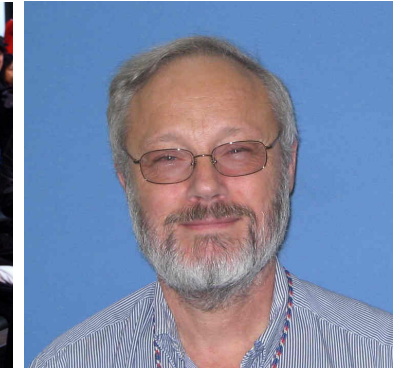
Marc Messerschmidt - LCLS   Stuart Marshall - PPA   Thomas Eriksson - SSRL   Richard Dubois - PPA   Randy Melen - CD

Imre Kabai CD

David MacFarlane - ALD

Rob Cameron PPA

Scientific Computing Plan Labwide

- Organizational Roles and Responsibilities
  - Head of Scientific Computing
    - Works with the SCSC, computing coordinators and customers within Science directorates to plan resources, technology and projects
      - ->Strategic Plan
    - identifies technologies emerging from the Directorates as suitable for transition to CD
    - Manages the CD Unix and Storage Teams
  - CD Unix and Storage
    - Develop overall technology and resource roadmaps
    - Hardware acquisition, installation and support performed by CD personnel.
    - Head of SC Work with Science Directorates to identify the needed services and technology development areas by which CD provides value for money
  - SC Steering Committee
    - Supply Scientific Computing Strategic Advice to ALDs
    - Collaborative relationship with the Head of Scientific Computing
      - Receives reports; returns feedback
      - Adjudicates resource conflicts
    - Owner of the scientific computing funding model and other processes for strategic planning and budgeting

SCSC Timeline

2011	
Feb	Form seminars working group ✔
Mar	SuperComputing 2011 planning starts ✔
Apr	Form Workshop LOC; Amber starts! Seminars start ✔
May	Plan workshop; Visit Directorates to socialise SCSC ✔
Jun	Workshop: 20-21 June in ROB Redwood
Jul	Synthesize workshop output
Fall	CD Methods, Manpower review
Fall	CD M&S review
Fall	First Technology roadmap

NATIONAL ACCELERATOR LABORATORY

Workshop Goals

- Find out what is going on across the Lab
    - Also from Stanford—ICME

- Getting acquainted

- Identify needs and roadblocks

- Identify skill sets, both in the directorates and in CD
    - What is already known in various parts of the Lab that could address overall needs
    - CD's ability to serve the Lab's projects

- First of an annual event

Next Steps

- Develop data management plans (DMPs)
- Assess ability of existing manpower and hardware resources to address the needs
- Assemble Strategy Plan based on DMPs, budgets etc
    - Tied in to Lab agendas

- We need YOU to participate!

Working together

- sci-comp@slac.stanford.edu for announcements
- forum.slac.stanford.edu to discuss issues
- Monthly scientific computing seminars to share knowledge in person

- SCSC as your representatives to Lab management
  - scsc-l@slac.stanford.edu to contact them
  - https://confluence.slac.stanford.edu/display/scscpub/Scientific+Computing+Steering+Committee+Public
  - Meeting agendas and minutes are posted: https://confluence.slac.stanford.edu/display/scscpub/SCSC+Meeting+Agendas
  - Put a "watch" on the agenda page to be notified of updates!