



U.S. Department of Energy's
Office of Science

Advanced Scientific Computing Research

Introduction to Strategic Plan

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What is Purpose of Meeting?

- Participate in development of Strategic Plan for ASCR



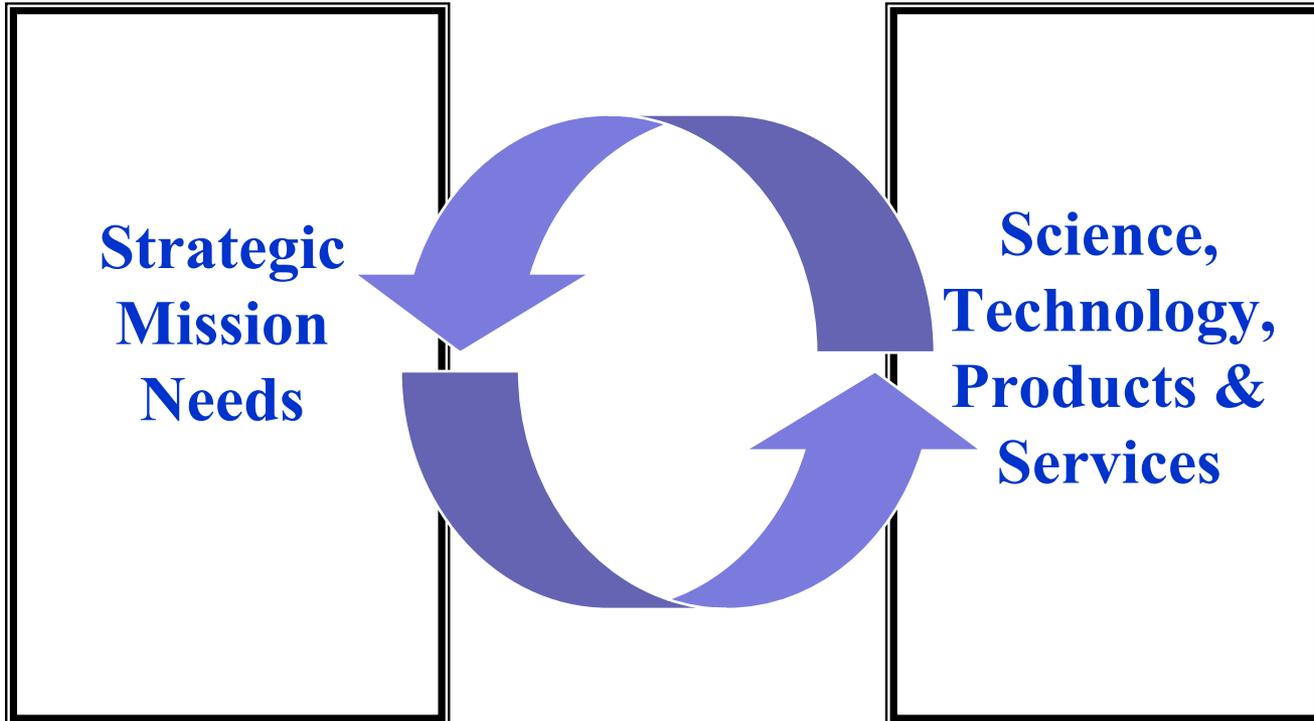
Purpose of a Strategic Plan

- Create a shared vision for a technology area based on the capability needs of users, now and in the future.
- Develop a common understanding of what technology/capabilities will be needed by when—and what will be available, by when.
- Communicate technological needs and expectations among users and those developing new capabilities.
- Tell a cogent story about what is important to do in a research area and why.



The Big Idea

“we’d like to have...”



“we can supply...”



The Hard Parts

- Getting stakeholders to participate.
- Getting participants to be as precise as possible.
- Staying on track—and focused on the outcome.
- Putting it all together.



What You Get from a Strategic Plan

- A common understanding of what is most important to do.
- Increased “buy-in” from user community.
- Increased cross-pollination in research community.
- A clearer, more focused story about what you are doing and why.



Context: Previous Workshops and Reports

- Blueprint for Future Science Middleware and Grid Research and Infrastructure, August 2002
 - <http://www.nsf-middleware.org/MAGIC/default.htm>
- DOE Science Network Meeting, June 2003
 - <http://gate.hep.anl.gov/may/ScienceNetworkingWorkshop/>
- DOE Science Computing Conference, June 2003
 - <http://www.doe-sci-comp.info>
- Science Case for Large Scale Simulation, June 2003
 - www.pnl.gov/scales/
- Workshop on the Road Map for the Revitalization of High End Computing
 - <http://www.cra.org/Activities/workshops/nitrd/>
- Cyberinfrastructure Report
 - <http://www.cise.nsf.gov/evnt/reports/toc.htm>



Structure of this Workshop

- 5 Discussions by Program Area
 - Applied Mathematics
 - Computer Science
 - Network Environment Research
 - Partnerships and Pilots
 - Facilities
- Discussion of interagency collaborations and program integration
- Opportunity for breakouts to supplement plenary discussions



Template for Program Area Discussions

- **Contribution of Program Element to Overall ASCR Strategic Goal:**
- **Planning horizon for Program Element:**
- **Areas of research Program Element currently invests in:**
- **How does Program Element transfer knowledge or provide services to application scientists?**
- **Program Element Strengths:**
- **Program Area Weaknesses:**
- **Program Element Opportunities:**
- **Program Element Threats:**
- **Program Element Gap Analysis:**



Advanced Scientific Computing Research (ASCR)

Mission:

- Deliver forefront computational and networking capabilities to scientists nationwide that enable them to extend the frontiers of science, answering critical questions that range from the function of living cells to the power of fusion energy.



ASCR in Relationship to Office of Science

Office of Science

NOTE: Director of Science equivalent to Assistant Secretary position and filled by Presidential Appointment (Senate confirmed); Principal Deputy Director equivalent to Principal Deputy Assistant Secretary; Associate Directors equivalent to Deputy Assistant Secretaries.

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[Raymond L. Orbach](#)

Principal Deputy Director
[James F. Decker](#)

Deputy Director for Operations
[Milton D. Johnson](#)

Chief of Staff
[Jeffrey T. Salmon](#)

Office of Basic Energy Sciences

Associate Director
[Patricia M. Dehmer](#)

Office of Biological and Environmental Research

Associate Director
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Associate Director
[S. Peter Rosen](#)

Office of Fusion Energy Sciences

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[N. Anne Davies](#)

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[C. Edward Oliver](#)

Office of Resource Management

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[John Rodney Clark](#)

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Office of Information Technology Management

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[C. Edward Oliver](#)
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Chicago Operations Office

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Oak Ridge Operations Office

Manager
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Berkeley Site Office

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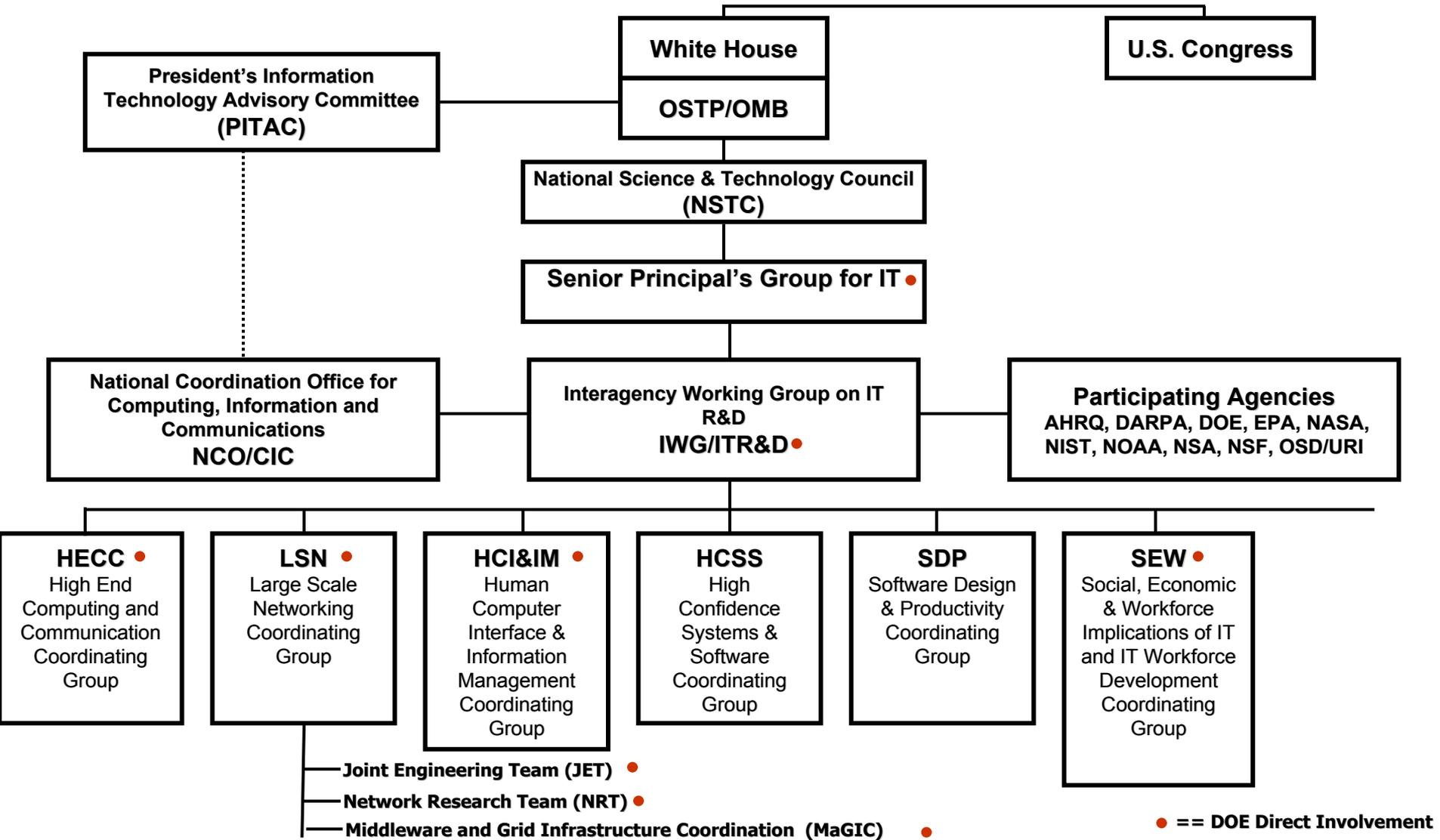
Stanford Site Office

Director
[John S. Muhlestein](#)



ASCR in Relationship to Federal IT Research

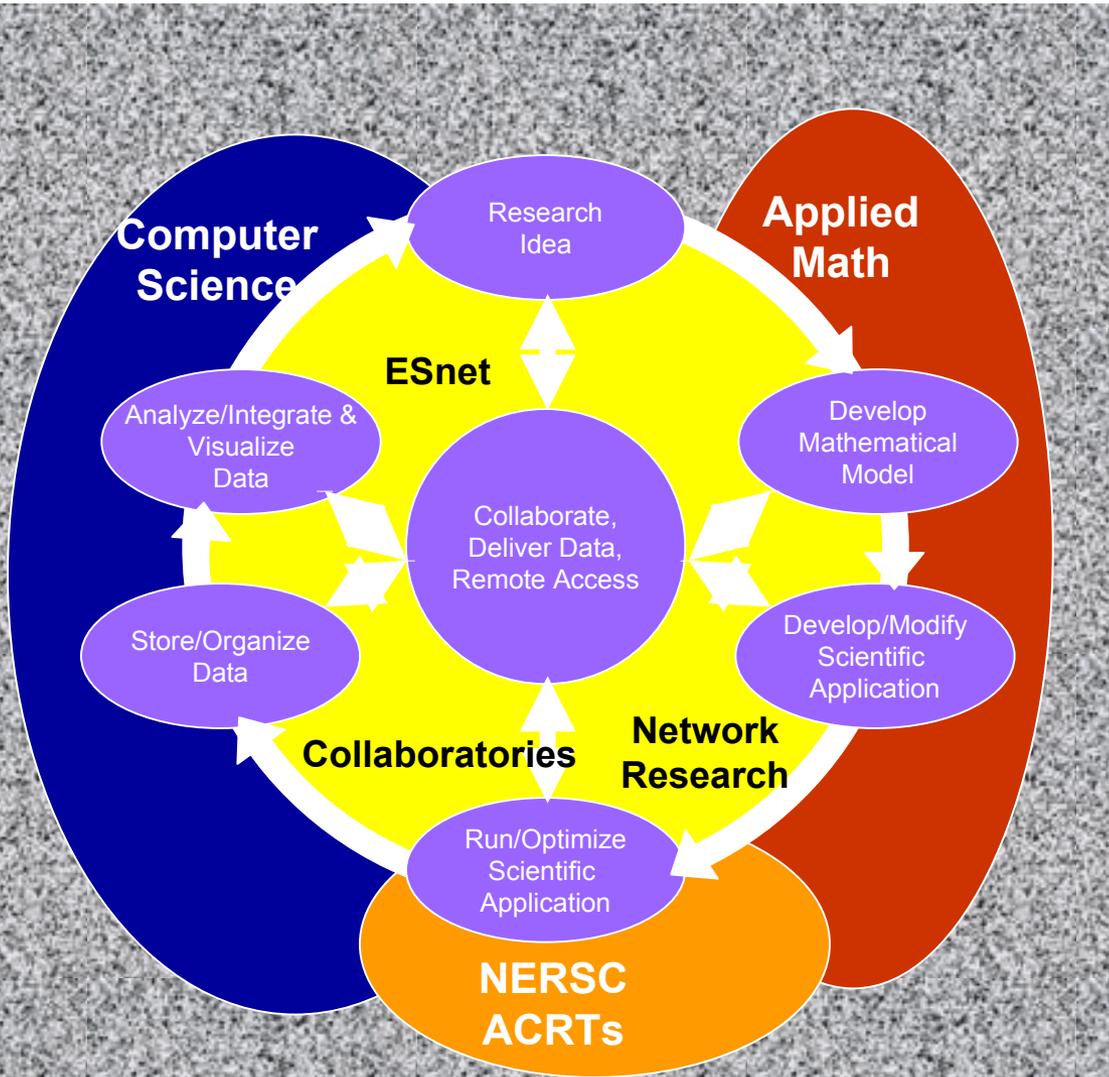
Office of Science



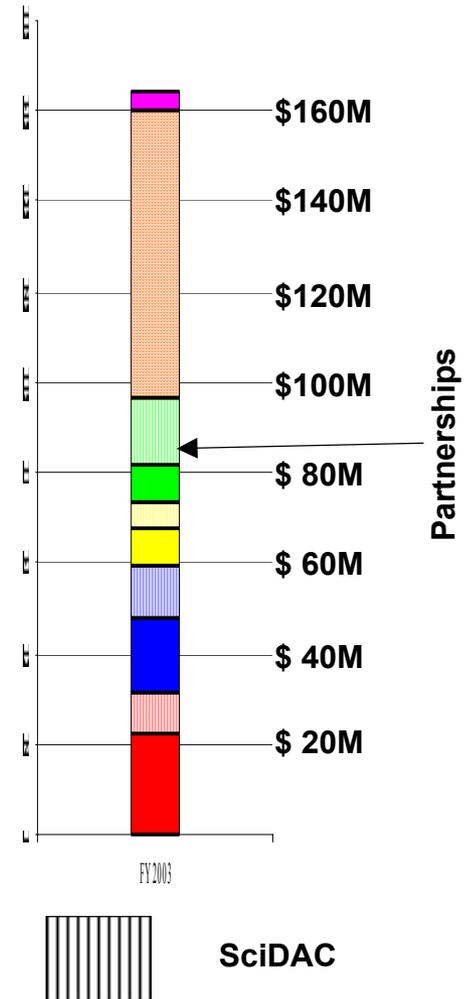


ASCR Supports end-to-end Process of Scientific Discovery

Data from Experiments



FY 2003 Budget





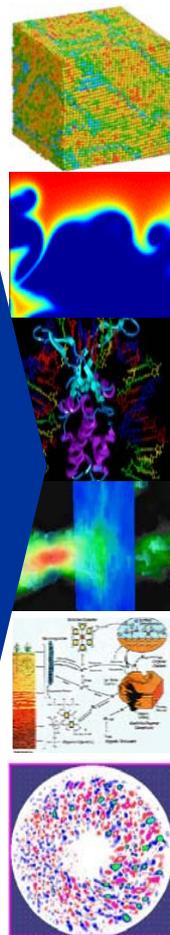
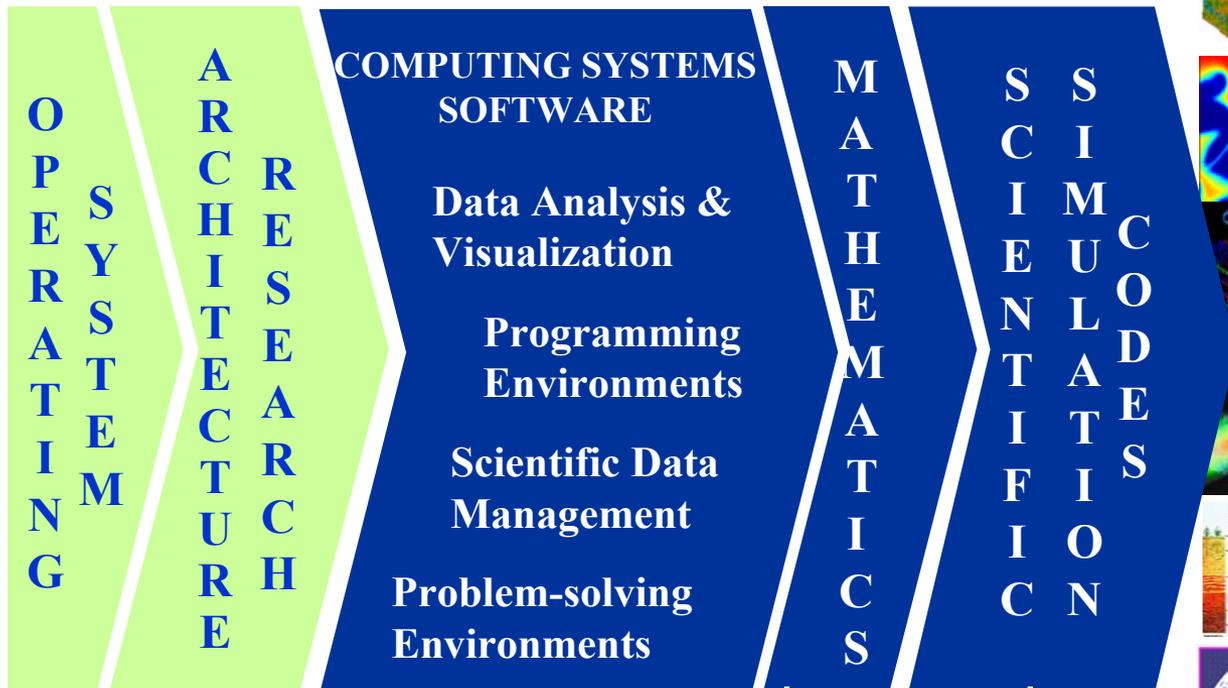
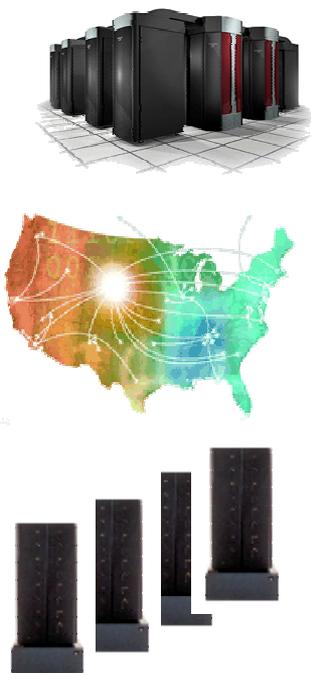
Scientific Discovery Through Advanced Computation (SciDAC)

Brings the power of terascale computing to science

Office of Science

Hardware Infrastructure

Software Infrastructure



State-of-the-art electronic collaboration tools will facilitate access to these tools to bring simulation to a level of parity with theory and experiment in the scientific enterprise.