Unidata Policy Committee

September 22-23, 2005

Washington, DC

Clifford A. Jacobs
National Science Foundation

Outline

- NSF's Plan for Cyberinfrastructure
- NAS Interim Report on ATM
- Re-balancing of GEO's Educational Portfolio

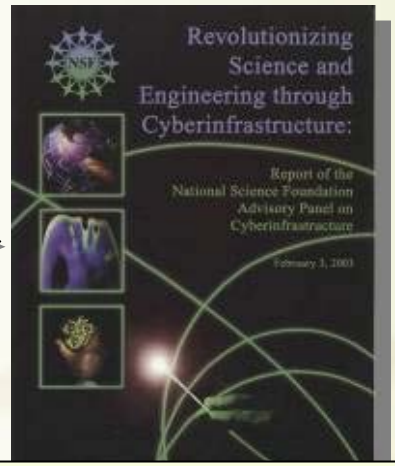
Recommendations for Government Investment

Lax report , 1982

- Increase access to regularly upgraded supercomputing facilities via high bandwidth networks.
- Increase research in computational mathematics, software, and algorithms.
- Train people in scientific computing
- Invest in research on new supercomputer systems

Calls for Government Investment

Atkins report , 2003



"NSF should establish and lead a large-scale, interagency, and internationally coordinated Advanced Cyberinfrastructure Program (ACP) to create, deploy, and apply cyberinfrastructure in ways that radically empower all scientific and engineering research and allied education"

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Cyberinfrastructure is "essential, not optional, to the aspirations of research communities."

Status Report on NSF's Cyberinfrastructure Planning

plus

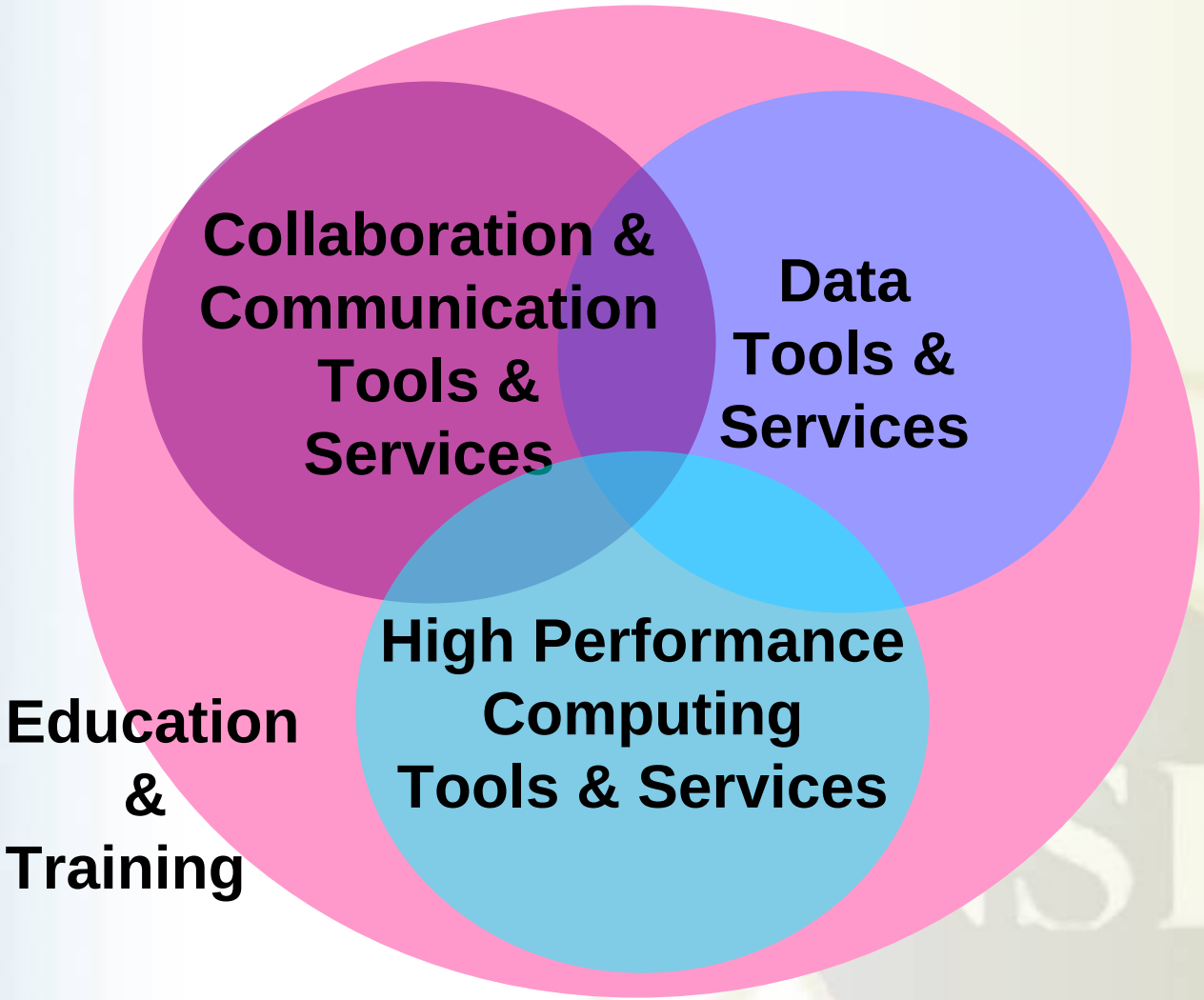
A Strategic Plan for High Performance Computing

Courtesy of: Deborah L. Crawford Acting Director, Office of Cyberinfrastructure

Planning Progress

• Active Planning by Senior Management	🗓 Early 2005
• Office of Cyberinfrastructure established	🗓 July 22
• CI Vision & HPC Strategic Plan v 2.0	🗓 Aug 1
• Search for Office Director – position posted	🗓 Aug 3
• External Advisory Committee for CI Charter	🗓 Aug 8

Cyberinfrastructure Components



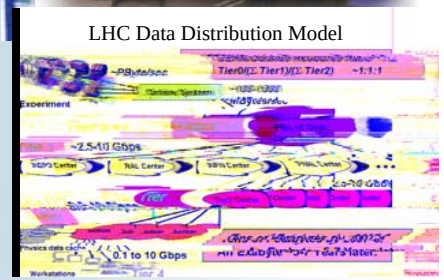
"Vision" Document

- A: Call to Action
- B: Strategic Plan for High Performance Computing (Aug. 1, 2005)
- C: Strategic Plan for Data (Nov. 15, 2005)
- D: Strategic Plan for Collaboration & Communication (Jan. 15, 2006)
- E: Strategic Plan for Education & Workforce Development (Jan. 15, 2006)

NSF Finalizes Cyberinfrastructure Vision Document March 31, 2006

Cyberinfrastructure Vision

NSF will lead the development and support of a comprehensive cyberinfrastructure essential to 21st century advances in science and engineering.



Strategic Guidance for NSF's Support of the Atmospheric Sciences: An Interim Report

September 21, 2005

John Armstrong
Susan Avery

Committee Membership

John A. Armstrong, (Chair) IBM Corporation (retired)
Susan K. Avery, University of Colorado
Howard B. Bluestein, University of Oklahoma
Elbert W. Friday, University of Oklahoma
Marvin A. Geller, Stony Brook University
Elisabeth A. Holland, National Center for Atmospheric Research
Charles E. Kolb, Aerodyne Research, Inc.
Margaret A. LeMone, National Center for Atmospheric Research
Ramon E. Lopez, Florida Institute of Technology
Kenneth Olden, National Institute of Environmental Health
Susan Solomon, National Oceanic and Atmospheric Administration
John M. Wallace, University of Washington
Robert A. Weller, Woods Hole Oceanographic Institution
Stephen E. Zebiak, Columbia University

Statement of Task

… provide guidance to ATM on its strategy for achieving its goals in the atmospheric sciences into the future

… in doing so, engage the broad atmospheric science community to the fullest extent possible

1. **What are the most effective activities and modes of support for achieving NSF's range of goals in the atmospheric sciences?**
2. **Is the balance among the activities appropriate and should it be adjusted? Is the balance among modes of support effective and should it be adjusted?**
3. **Are there any gaps in the activities supported by the Division and are there new mechanisms that should be considered in planning and facilitating these activities?**
4. **Are interdisciplinary, Foundation-wide, interagency, and international activities effectively implemented and are there new mechanisms that should be considered?**
5. **How can NSF ensure and encourage the broadest participation and involvement of atmospheric researchers at a variety of institutions?**

Statement of Task

Interim report: provide a preliminary sense of the committee's overarching conclusions

Black text: ***addressed in interim report***

Grey text: ***deferred to final report***

1. **What are the most effective activities and modes of support for achieving NSF's range of goals in the atmospheric sciences?**
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5. **How can NSF ensure and encourage the broadest participation and involvement of atmospheric researchers at a variety of institutions?**

Defining Terminology

- **Goals:** Overarching objectives of NSF in supporting the atmospheric sciences, including cutting-edge research, education and workforce development, service to society, computational and observational objectives, and data management.
- **Activities:** The pursuits taken to achieve the goals, including theoretical and laboratory research, field measurement programs, technology development, education and workforce programs, product development, and outreach.
- **Modes of support:** programmatic tools NSF employs to support the activities, including
  - Grants to individual and multiple principal investigators (PIs)
  - Small centers
  - Large national centers
  - Cooperative agreements to support facilities at universities and other locations
  - NSF-wide initiatives
  - Interagency programs
  - Field programs

Overview of Findings and Recommendations

- Value of diverse modes of support
- Strategic planning
- High-risk, potentially transformative research
- Cross-disciplinary research
- Interagency coordination
- International collaboration
- Longer-term field programs
- Field data archives, visualization tool development, and analysis
- Partnerships between university/private sector scientists and national centers

http://dels.nas.edu/basc/strat.shtml

Re-balancing of GEO's Educational Portfolio

- Divisional Activities will remain
  - Responsive to community needs and opportunities
- All DLESE awards will expire at end of FY 2006
- GEO is considering most effective way to have a Directorate-wide educational program(s)

Questions or Commnets