Topics of Interest

• Organizational Changes
• NAS Study
• Funding History
• Competition: NSF Context
Management Transition

• Dr. Arden L. Bement, Jr nominated as Director of NSF
  – Senate must confirm
• New POs
  – Kiran Alapaty, new Associate Program Director for CDP
  – Chris Cantrell returns to NCAR
  – Al Cooper returns to NCAR
  – Sarah Ruth, joins ULAFOS (DHS willing)
  – Two Science Assistance
    • Nick Anderson
    • Theresa Moretto

• Lower Atmospheric Research Section (LARS) re-organization
Realignment of the Lower Atmosphere Research Section
(Division of Atmospheric Sciences)
Total LARS staff unchanged

Previous

Atmospheric Chemistry
Climate Dynamics
Large-scale Dynamic Meteorology
Mesoscale Dynamic Meteorology
Physical Meteorology
Paleoclimate

New

Atmospheric Chemistry
Climate and Large-scale Dynamics
Physical and Dynamic Meteorology
Paleoclimate
NSB Nominations

- **Kathryn D. Sullivan**
  - president and chief executive officer of the Center of Science and Industry in Columbus, Ohio.
- **Alan I. Leshner**
  - CEO, American Association for the Advancement of Science
- **Dan Arvizu**
  - Chief Technology Officer for Industrial and Federal Businesses, CH2M Hill Companies, Ltd.; and Executive Director for Energy and Technologies at the University of Chicago
- **Steven C. Beering**
  - President Emeritus
  - Purdue University
  - West Lafayette, Indiana
- **Gerald Wayne Clough**
  - President,
  - Georgia Institute of Technology
- **Kelvin K. Droegemeier**
  - Regents’ Professor of Meteorology, School of Meteorology; Roger and Sherry Teigen Presidential Professor; Director, Center for Analysis and Prediction of Storms, University of Oklahoma
- **Louis J. Lanzerotti**
  - Distinguished Professor of Physics, Center for Solar Terrestrial Research, Department of Physics, New Jersey Institute of Technology
- **Jon C. Strauss**
  - President,
  - Harvey Mudd College
## Status of FY 2005 Budget

<table>
<thead>
<tr>
<th></th>
<th>FY 04 (000)</th>
<th>FY 05 Request (000)</th>
<th>House Mark (000)</th>
<th>Senate Mark (000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research and Related Activities</td>
<td>4,251,360</td>
<td>4,452,310</td>
<td>4,151,745</td>
<td>4,402,320</td>
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<tr>
<td>Major Research Equipment and Facilities Construction</td>
<td>154,982</td>
<td>213,270</td>
<td>208,200</td>
<td>130,420</td>
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<tr>
<td>Education and Human Resources</td>
<td>938,990</td>
<td>771,360</td>
<td>842,985</td>
<td>929,150</td>
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<tr>
<td>Salaries and Expenses</td>
<td>218,705</td>
<td>294,000</td>
<td>249,970</td>
<td>269,000</td>
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<tr>
<td>National Science Board</td>
<td>3,877</td>
<td>3,950</td>
<td>3,950</td>
<td>4,000</td>
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<tr>
<td>Inspector General</td>
<td>9,941</td>
<td>10,110</td>
<td>1,110</td>
<td>10,110</td>
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<tr>
<td>NSF Total</td>
<td>5,578,323</td>
<td>5,744,690</td>
<td>5,466,960</td>
<td>5,744,690</td>
</tr>
</tbody>
</table>
The National Academies, BASC
Strategic Guidance for NSF’s Support of Research in the Atmospheric Sciences

“the committee is asked to consider how ATM can best accomplish its mission of supporting the atmospheric sciences into the future. Specifically, this study will consider the following questions:
1. What are the most effective activities (e.g., research, facilities, technology development, education and workforce programs) & modes of support (e.g., individual principal investigators, university-based research centers, large centers) for achieving NSF’s range of goals in the atmospheric sciences?
2. Is the balance among the types of activities appropriate and should it be adjusted? Is the balance among modes of support for the atmospheric sciences 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?
## Schedule

<table>
<thead>
<tr>
<th>Date Range</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 19-20, 2004</td>
<td><strong>1st meeting (Washington, DC):</strong> Orientation to NRC process and required Composition and Balance discussion. Discuss statement of task and plan study strategy.</td>
</tr>
<tr>
<td>October 14-15, 2004</td>
<td><strong>2nd meeting (Boulder, CO):</strong> Information gathering. Presentations from outside speakers. Potential opportunities for community input.</td>
</tr>
<tr>
<td>December 13-17, 2004</td>
<td><strong>Town hall at AGU Fall Meeting (San Francisco, CA)</strong></td>
</tr>
<tr>
<td>January 9-13, 2005</td>
<td><strong>Town hall at AMS Annual Meeting (San Diego, CA)</strong></td>
</tr>
<tr>
<td>Spring, 2005</td>
<td><strong>3rd committee meeting (Washington, DC):</strong> Continued information gathering and presentations from outside speakers (in particular, regarding interagency and international activities).</td>
</tr>
<tr>
<td>June-July, 2005</td>
<td><strong>4th meeting (Beckman Center, Irvine, CA):</strong> Prepare interim report.</td>
</tr>
<tr>
<td>August, 2005</td>
<td><strong>Submit interim report for review</strong></td>
</tr>
<tr>
<td>October, 2005</td>
<td><strong>Deliver interim report</strong></td>
</tr>
<tr>
<td>November, 2005</td>
<td><strong>5th meeting (location, TBD)</strong></td>
</tr>
<tr>
<td>December, 2005</td>
<td><strong>Town hall at AGU Fall Meeting (San Francisco, CA)</strong></td>
</tr>
<tr>
<td>January, 2006</td>
<td><strong>Town hall at AMS Annual Meeting (Atlanta, GA)</strong></td>
</tr>
<tr>
<td>June, 2006</td>
<td><strong>Outside review:</strong> Report submitted for outside review (4 weeks).</td>
</tr>
<tr>
<td>September-December, 2006</td>
<td>Dissemination.</td>
</tr>
<tr>
<td>December, 2006</td>
<td>Published report available. Dissemination.</td>
</tr>
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</table>
ATM Budget History

A 30 year look and changes in focus and balance
Definitions

• ATM
  – Total Division Budget
• NCAR
  – Base funding including science and facilities
• Grants
  – Lower and Upper Atmospheric Grants Programs
• Other Facilities
  – Upper Atmospheric (e.g. incoherent radars), Lower Atmospheric (e.g. WY King Air, CHILL), Deployment Pool, Unidata
• Priority Areas
  – BE, ITR, Nano, Math, and HSD
30 Year ATM Budget (Actual $)
by Major Activity
(in millions of dollars)
30 Year ATM Budget (Constant $ 1996)
by Major Activity
(in millions of dollars)
30 Year ATM Budget (Constant $ 1996) by Major Activity (in millions of dollars)
30 Year ATM Budget (Constant $ 1996)
by Section/Priority
(in millions of dollars)
30 Year ATM Budget (Actual $)
by Science & Facilities
(in millions of dollars)

FY 74 ($35.7M)

FY 84 ($88.4M)

FY 94 ($133M)

FY 04 ($228M)
Changing Funding Distribution

FY 1974

FY 1984

FY 1994

FY 2004
The Competition of the Management of NCAR

NSF Context
Topics

• NSF Policy
• History of the implementation of the policy
• What is being competed?
• How will NSF proceed?
NSF Policy on Competition

The NSB…”Affirms its strong support for the principle that expiring awards are to be recompeted unless it is judged to be in the best interest of U.S. science and engineering not to do so. This position is based on the conviction that peer-reviewed competition and recompetition is the process most likely to assure the best use of NSF funds for supporting research and education.”

(NSB-97-224) November 1997
NSF Statement on Competition

• Acknowledges
  – Major facilities often include funding to support research by facilities staff and employ a substantial number of scientists and engineers
  – Allocation of resources for staff research should be governed by rigorous merit review based on NSF review criteria
  – Special Rules for FFRDCs (FAR, part 35)
    • Examination of the sponsor’s continuing technical needs
    • Consideration of alternative sources to meet those needs
    • Assessment of the efficiency and effectiveness of the FFRDC in meeting sponsor’s needs
    • Adequacy of the FFRDC management and
    • Determination that the criteria under which the FFRDC was established continue to be satisfied
  – Review must take place at least once every five years
Geo Bulletin on Competition

- GEO fully supports the NSB position
- Open competition unless..... AD for Geosciences determines exceptional circumstances exist such that open competition would not be in the best interest of GEO, NSF, or the scientific community
- Otherwise..no less than 18 months prior to expiration of facility award a memo is required from AD for Geosciences recommending recompetition, renewal, or termination of the ending award.
History of implementation of this policy

• Compete policy was being developed at the time of 1997-2002 renewal
  – GEO AD argued successfully that it was in the best interest “of U.S. science and engineering not to do so.”

• For current award, 2003-2008, GEO AD recommended renewal
2003 GEO Decision

• Recompetition was argued to be “not in the best interest of US atmospheric science”.....because
  – Director of NCAR hired only 18 mths earlier
  – New strategic plan features being developed
  – New initiative to increase diversity of scientific staff
  – Enhanced attention to the role of NCAR in supporting the academic community

Result:
  – NSF should give the new management and management initiatives an opportunity to develop
Reference to NSB/CPP-02-10

• as appropriate, NSF will conduct additional peer reviews of NCAR, including a detailed management review halfway through the award (March 2006). In accordance with the NSB policy (NSB 97-224), we expect to recompete the management of NCAR in FY2008.

• a competition for NCAR management shall be in accordance with
  – provisions for the review of FFRDC (FAR 35.017-4),
  – and best practices as carried out for competition of NSF FFRDC’s
What is being competed?

• Setting
  – NSF prohibited by its founding legislation from operating its own facilities.
  – Management organizations manage NSF’s National Centers.
  – University Cooperation for Atmospheric Sciences (UCAR) has managed the operation of NCAR for NSF since the NCAR’s founding in 1960
  – NCAR was designated an FFRDC by NSF in the early 1970’s
WHAT IS AN FFRDC?

• A federally funded research and development center (FFRDC) is a unique organization that assists the U.S. government with scientific research and analysis, systems development, and systems acquisition. FFRDCs bring together the expertise and outlook of government, industry, and academia to solve complex technical problems that cannot be solved by any one group alone.

• Working in the public interest, FFRDCs operate as strategic partners with their sponsoring government agencies.

• FFRDCs are organized as independent, not-for-profit entities, with limitations and restrictions on their activities. This special standing permits a degree of access and a long-term perspective not shared by commercial contractors.

• All FFRDCs are sponsored by government agencies, but they are privately administered by universities and other not-for-profit organizations.
General Guidelines

- Primary activities: basic research, applied research, development, or management of R&D;
- Constitute a separate organizational unit
- Performs actual R&D or R&D management either upon direct request of the Government or under a broad charter from the Government, but in either case under the direct monitorship of the Government.
- Receives its major financial support (70% or more) from the Federal Government, usually from one agency.
- Has or is expected to have a long-term relationship with its sponsoring agency (about five years or more), as evidenced by the specific obligations it and the agency assume.
- Most or all of the facilities are owned or funded for in the contract (or Cooperative Agreement) by the Government.
- Has an average annual budget (operating and capital equipment) of at least $500,000.
Modification by OMB (1984)

- The activity is operated managed and/or administered by either a university or consortium of universities, other nonprofit organization or industrial firm as an autonomous organization or as an identifiable separate operating unit of a parent organization.
- A long term relationship evidenced by specific agreement exists or is expected to exist between the operator, manager, or administrator of the activity and its primary sponsor.
- The activity (organization and/or facilities) is brought into existence at the initiative of a Government agency or bureau to meet some special research or development need which, at the time, cannot be met as effectively by existing in-house or contractor resources.
- Work from other than the sponsoring agency is undertaken only to the extent permitted by the sponsoring agency and in accordance with the procedures.
- The primary sponsor undertakes the responsibility to assure a reasonable continuity in the level of support to the activity consistent with the agency's need for the activity and the terms of the sponsoring agreement.
Federal Acquisition Regulations criteria (1990)

- Long-term relationships between the Government and FFRDC's are encouraged in order to provide the continuity that will attract high-quality personnel to the FFRDC.

- This relationship should be of a type to encourage the FFRDC to maintain currency in its field(s) of expertise, maintain its objectivity and independence, preserve its familiarity with the needs of its sponsor(s), and provide a quick response capability.
What is being competed?

• The management of NCAR, not NCAR
• NCAR will be reviewed on the basis of
  – Quality/Productivity of Science/Facilities
  – Service to Community
  – Management/Leadership
  – Responsiveness to community/ cross-divisional activities
  – Allocation of funds reflecting NSF merit review criteria
    • intellectual merit
    • broader impacts
• The competition will be for the management of NSF’s FFRDC and
  – Proposals will be evaluated on Quality and Effectiveness of the management of NCAR
How will NSF proceed?

**Current thinking**

- Review science, facilities, management of NCAR during current award
- Ask NCAR for an update of their strategic plan during the current award
- Issue announcement(s) – RFI? Solicitation? RFP?
- Conduct a review of management proposals
- Make an award for the management of NCAR (possibly before Sept 30, 2008).
Background Slides

From presentation to BASC
August 2004
FY 2004 Funding

- Mathematical and Physical Sciences
- Education and Human Resources
- Geosciences
- Computer and Information Science and Engineering
- Biological Sciences
- Engineering
- U.S. Polar Research & Support Programs
- Social, Behavioral and Economic Sciences
- Integrative Activities
- Office of International Science and Engineering
ATM Research Proposal
Statistics

- Submitted Proposals ~ 800
- Competitive awards: ~ 300
- Average annual award: $128,000
- Average duration: 3 years
The Changing Nature of ATM Research Grants

ATM Research Grants for Single Investigators (SIRPS) and Multiple PI Awards by Value of Grants [bars] and Number of Grants [lines]
Statistics for Modes of Research Support in ATM

Number of New Awards FY03 (280 Projects)

- SGER: 250
- Individual: 10
- Group (Collaborative): 1
- Center: 19

Distribution of Research Grant Support (FY03 $120 M)

- SGER: 78%
- Individual: 13%
- Group (Collaborative): 8%
- Center: 1%
Department of Defense (10)
Department of Energy (16)
Department of Health and Human Services (1)
National Aeronautics and Space Administration (1)
National Science Foundation (5)
Nuclear Regulatory Commission (1)
Department of Transportation (1)
Department of the Treasury (1)