



NSF OVERVIEW

University of Texas at Dallas

September 15, 2005

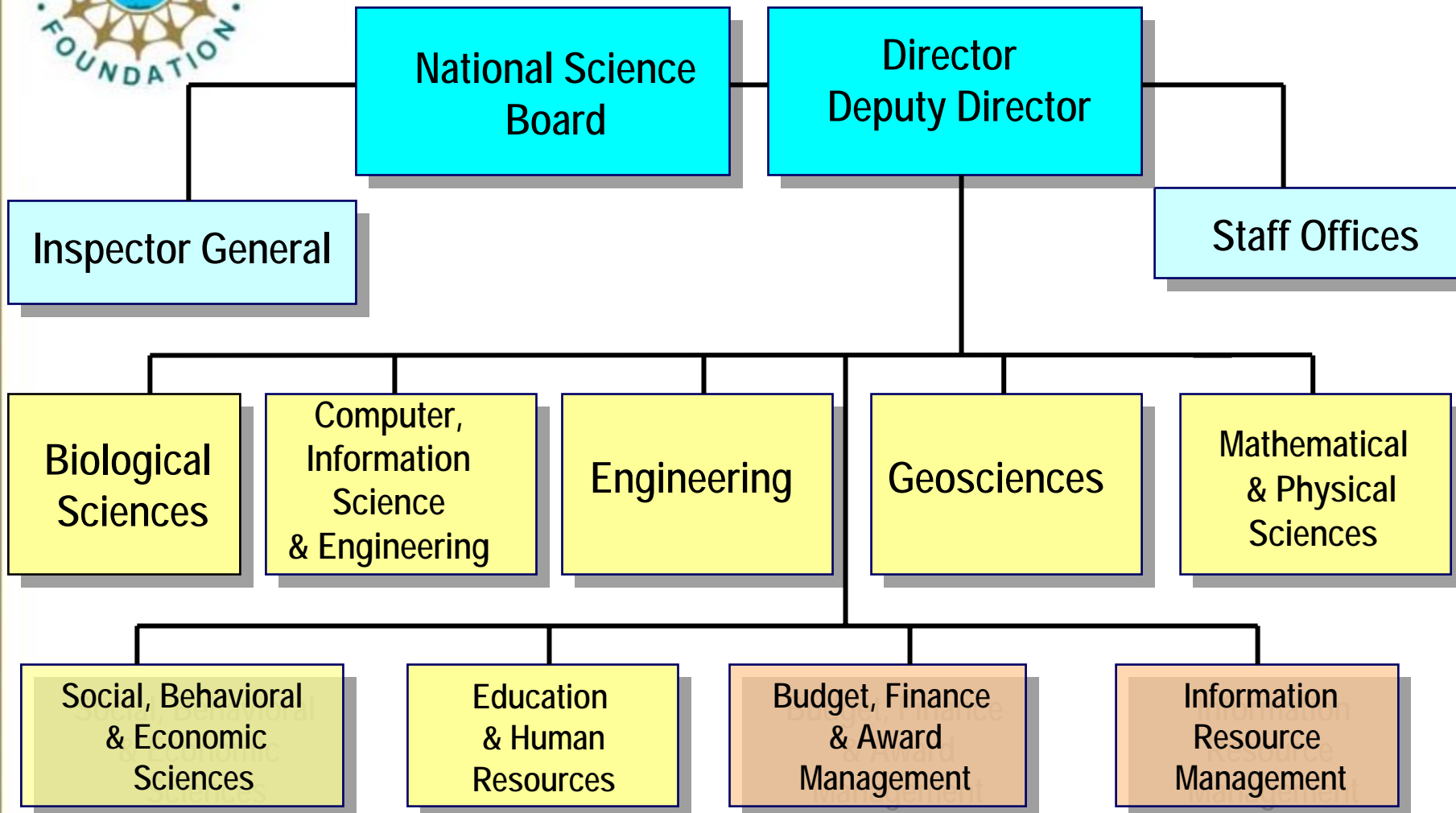


NSF IN A NUTSHELL

- Independent Agency
- Supports basic research & education
- Uses grant mechanism
- Low overhead; highly automated
- Discipline-based structure
- Cross-disciplinary mechanisms
- Use of Rotators/IPAs
- National Science Board



NATIONAL SCIENCE FOUNDATION





OTHER NSF OFFICES

- EPSCoR
- Equal Opportunity
- General Council
- Integrative Affairs
- International S&E
- Legislative & Public Affairs
- Multidisciplinary Activities
- Overseas (Paris/Tokyo)
- Polar Programs
- SBIR/STTR



NSF's ORIGIN, MISSION & GOAL

- Established in 1950 by NSF Act
- Only Agency Authorized to Provide Funding for Research Across All S&E Disciplines
- "To Promote Progress of Science" and "Advance National Health, Prosperity & Welfare by Supporting Research & Education in S&E"
- NSF's Goal of Funding Best S&E Proposals



NSF PROPOSAL SUBMISSION ELIGIBILITY*

- U.S. Universities and Colleges
- U.S. Nonprofit, Nonacademic Organizations
- U.S. For-Profit Organizations
- State/Local Educational Organizations
- Unaffiliated U.S. Scientists, Engineers, Educators, & Citizens
- NSF Rarely Supports Foreign Organizations or Other Federal Agencies

* Program Solicitations may establish more restrictive eligibility



NSF STRATEGIC INVESTMENT GOALS

- **People** - Developing "a diverse, internationally competitive and globally engaged workforce of scientists, engineers, and well-prepared citizens."
- **Ideas** - Enabling "discoveries across the frontier of science and engineering, connected to learning, innovation, and service to society."
- **Tools** - Providing "broadly accessible, state-of-the-art shared research and education tools."
- **Organizational Excellence** – Operating an agile, innovative organization with leadership and sound business practices

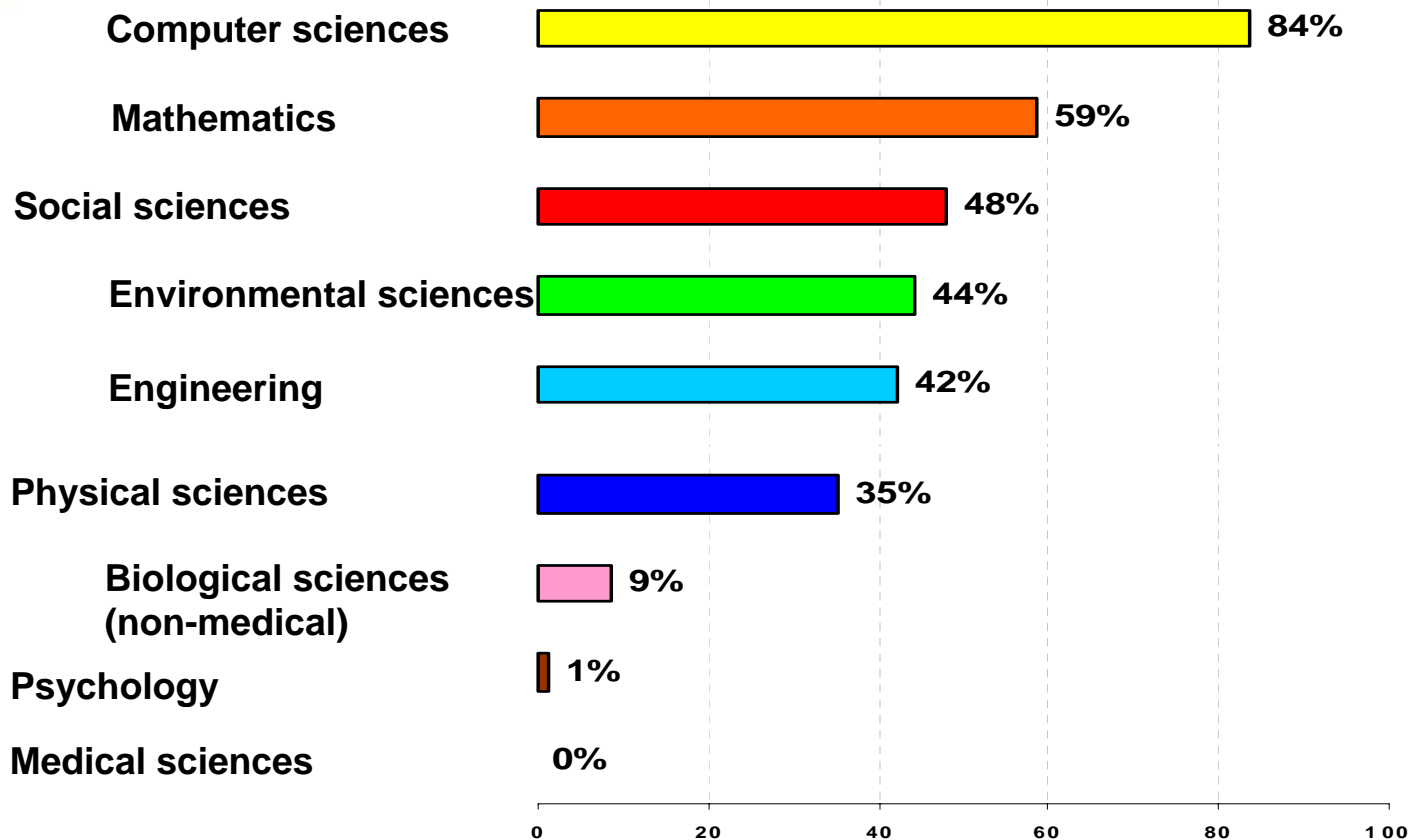


NSF BUDGETS (In BILLIONS) BY STRATEGIC GOAL

	FY-04	FY-05	FY-06(Req.)
People	1.146	1.029	0.979
Ideas	2.822	2.749	2.757
Tools	1.403	1.404	1553
Organizational Excellence	0.279	0.289	0.335
TOTAL	\$5.652	\$5.742	\$5.605

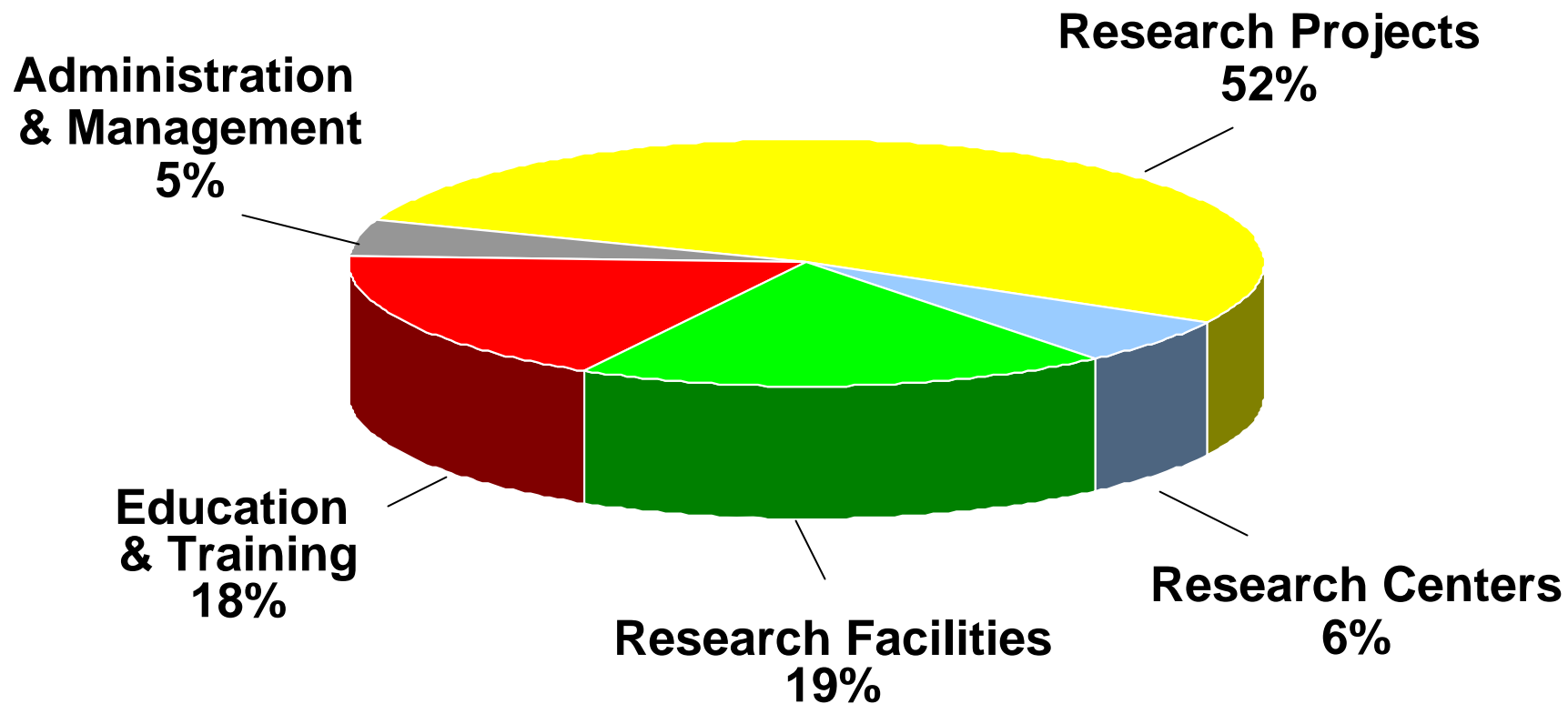


NSF SHARE OF TOTAL FEDERAL SUPPORT FOR BASIC RESEARCH AT ACADEMIC INSTITUTIONS





NSF PROJECT FUNDING PROFILE



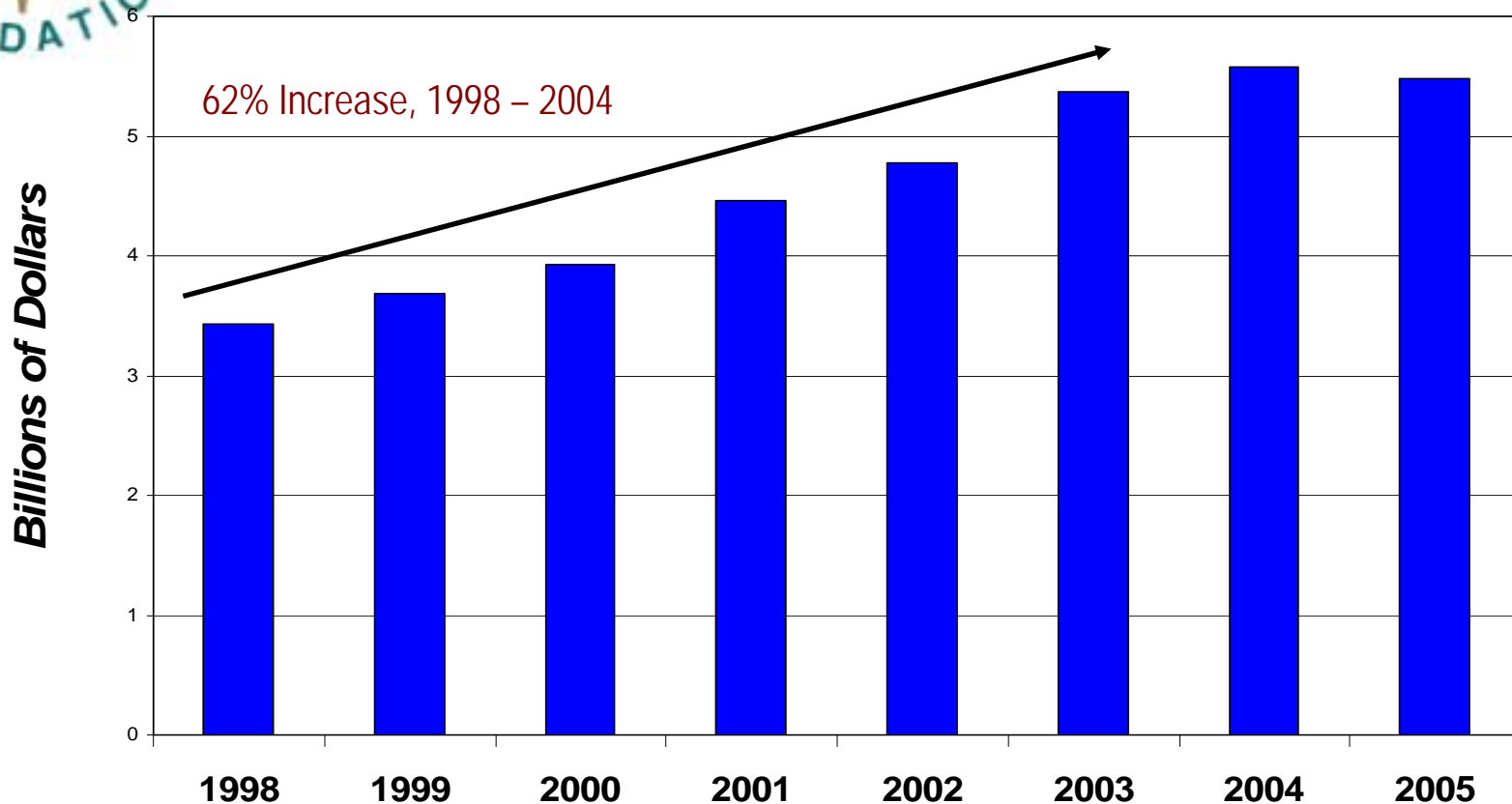


Number of People Involved in NSF Activities

	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate
Senior Researchers	32960	32360	32060
Other Professionals	14190	12190	11850
Postdoctoral Associates	6000	5790	5750
Graduate Students	27230	27130	27470
Undergraduate Students	34530	32670	27150
K-12 Students	14320	10820	7320
K-12 Teachers	86120	73680	56280
Total Number of People	215350	194640	167880



APPROPRIATIONS FOR NFS FY 1998 - 2005





Fiscal 2006 Appropriations

	FY 05	FY 06	House	Senate
(\$000)	Current	Request	Mark	Mark
	Plan		FY 06	FY 06
Research and Related Activities	4,220,550	4,333,490	4,377,520	4,345,213
MREFC	173,650	250,010	193,350	193,350
Education and Human Resources	841,420	737,000	807,000	747,000
Salaries and Expenses	223,200	223,200	250,000	229,896
National Science Board	3,970	4,000	4,000	4,000
Inspector General	10,030	11,500	11,500	11,500
NSF Total:	5,472,820	5,605,000	5,643,370	5,530,959



NSF PROPOSAL STATISTICS (FY 2004)

- 43,851 proposal actions
- 214,585 reviews
- 58,000 reviewers
- 10,380 awards
- 24.0% funding rate



NSF RESEARCH GRANT PROFILE (FY 2004)

- Competitive awards: 10,380
- Average annual award: \$145,783
- Median annual award: \$96,311
- Average duration: 2.54 years



NSF Considers Research Proposals In All Fields of Science and Engineering

SCIENCES

- Astronomy
- Atmospheric Sciences
- Biological Sciences
- Behavioral Sciences
- Physical Sciences
- Computer Science
- Earth Sciences
- Materials Research
- Mathematical Sciences

- Oceanography
- Research on Learning
- Social Sciences

ENGINEERING

- Chemical
- Aeronautical
- Civil
- Electrical
- Etc.



NSF Priority Areas

National Science Foundation Response to Katrina

- NSF pledges strong and continued support and continuing sponsorship of research and education in the areas affected by the storm and its aftermath.
- Existing awards scheduled to expire before October 1, 2005, will be extended.
- Assist in transfer of awards for faculty and students who temporarily change institutions.

It is vital that each affected investigator contact their program officer as soon as feasible.

Contact: 800-381-1532 or katrina@nsf.gov



Biocomplexity in the Environment

Fiscal year 2006 priorities include:

- Earth Systems, Cycles, and Pathways: Biogeochemical, chemical, and physical pathways linking the atmosphere, ocean, and solid earth.
- Dynamics of Coupled Natural and Human Systems
- Materials Use: Science, Engineering and Society
- Microbial Genome Sequencing
- Ecology of Infectious Diseases



Biocomplexity in the Environment Cross-Directorate Funding

	FY 2006 Request
Biological Sciences	\$30,430,000
Computer & Information Science & Engineering	\$3,000,000
Engineering	\$6,000,000
Geosciences	\$37,220,000
Mathematic & Physical Sciences	\$3,360,000
Social, Behavioral & Economic Sciences	\$2,000,000
International Science & Engineering.	\$250,000
Polar Programs	\$1,550,000



Human & Social Dynamics

Fiscal Year 2006 priorities include:

- **Agents of change** – focusing on large-scale changes in humanity and society in areas such as industrial globalization and disease epidemics, and how we influence technological change
- **Dynamics of human behavior** – applying state-of-the-art methods and cross-disciplinary approaches to better understand the dynamics that influence human behavior and action
- **Decision-making and risk** – improving decision-making in an uncertain world by studying risk perception and response to stimuli such as hazards and extreme events and the role of educational systems in that response



Mathematical Sciences

Fiscal Year 2006 priorities include:

- Mathematical and statistical challenges posed by large data sets.
- Managing and modeling uncertainty
- Modeling complex nonlinear systems



Nanoscale Science & Engineering

Fiscal Year 2006 priorities include:

- Fundamental nanoscale phenomena and processes
- Nanomaterials
- Nanoscale devices and systems
- Instrumentation research for nano technology
- Nanomanufacturing
- Major research facilities and infrastructure acquisition
- Societal Dimensions



NSF Priority Areas FY 2006 Request

Dollars (000)	FY 2005	FY 2006 Request
Biocomplexity in the Environment	99.16	83.81
Human and Social Dynamics	38.25	39.45
Mathematical Sciences	89.13	88.63
Nanoscale Science and Engineering	296.55	243.04
Total, Priority Areas	\$523.09	\$454.93



OSTP/OMB 2006 RESEARCH PRIORITIES*

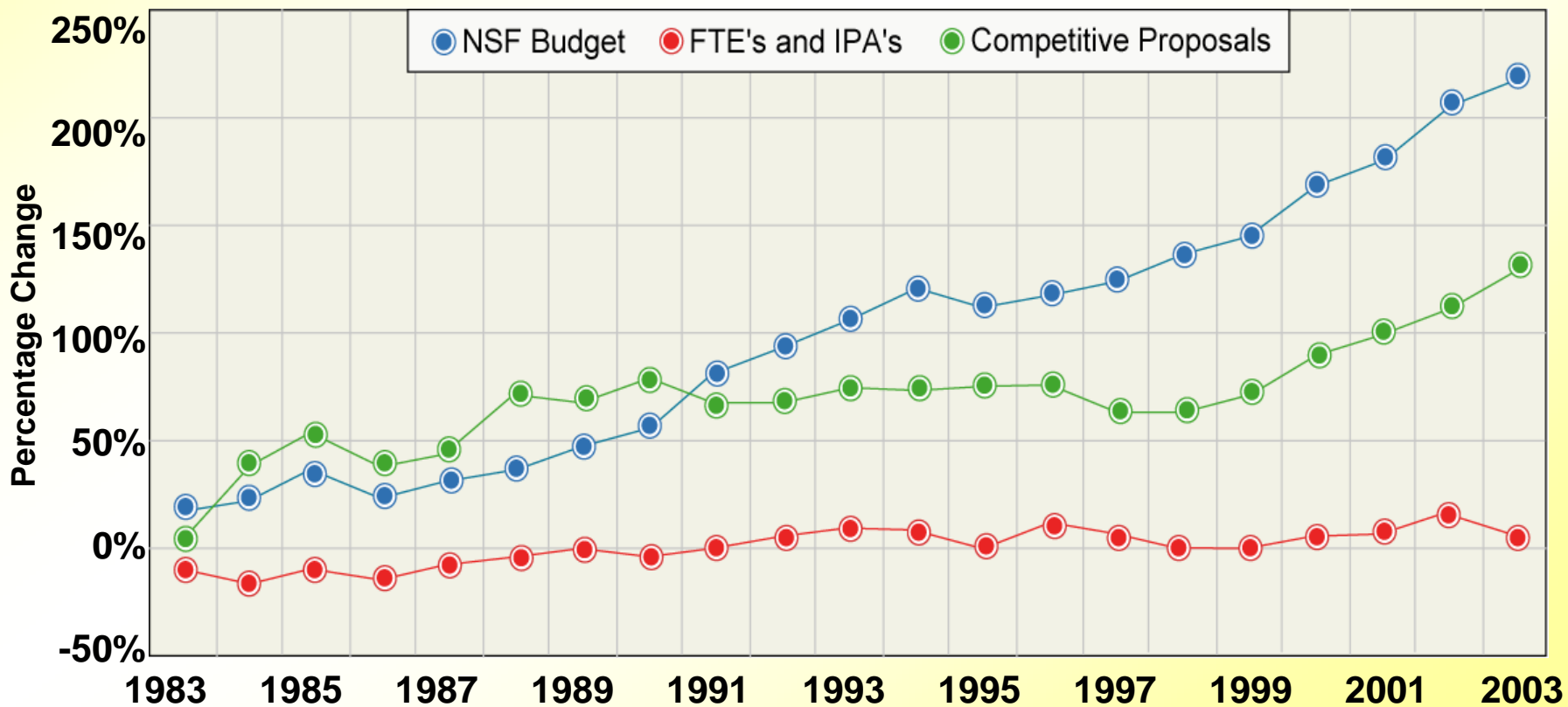
- **Homeland Security**
 - Prevention, Detection, & Remediation of NCB Threats
 - Medical Countermeasures and Biosurveillance Networks
- **Networking & IT**
 - Supercomputing & Cyberinfrastructure
- **Nanotechnology via NNI**
- **Priorities of Physical Sciences**
 - Fundamental Understanding of Phenomena
 - Instruments and/or Facilities
- **Biology of Complex Systems**
- **Climate, Water, Hydrogen R&D**

*See www.ostp.gov/html/m04-23.pdf

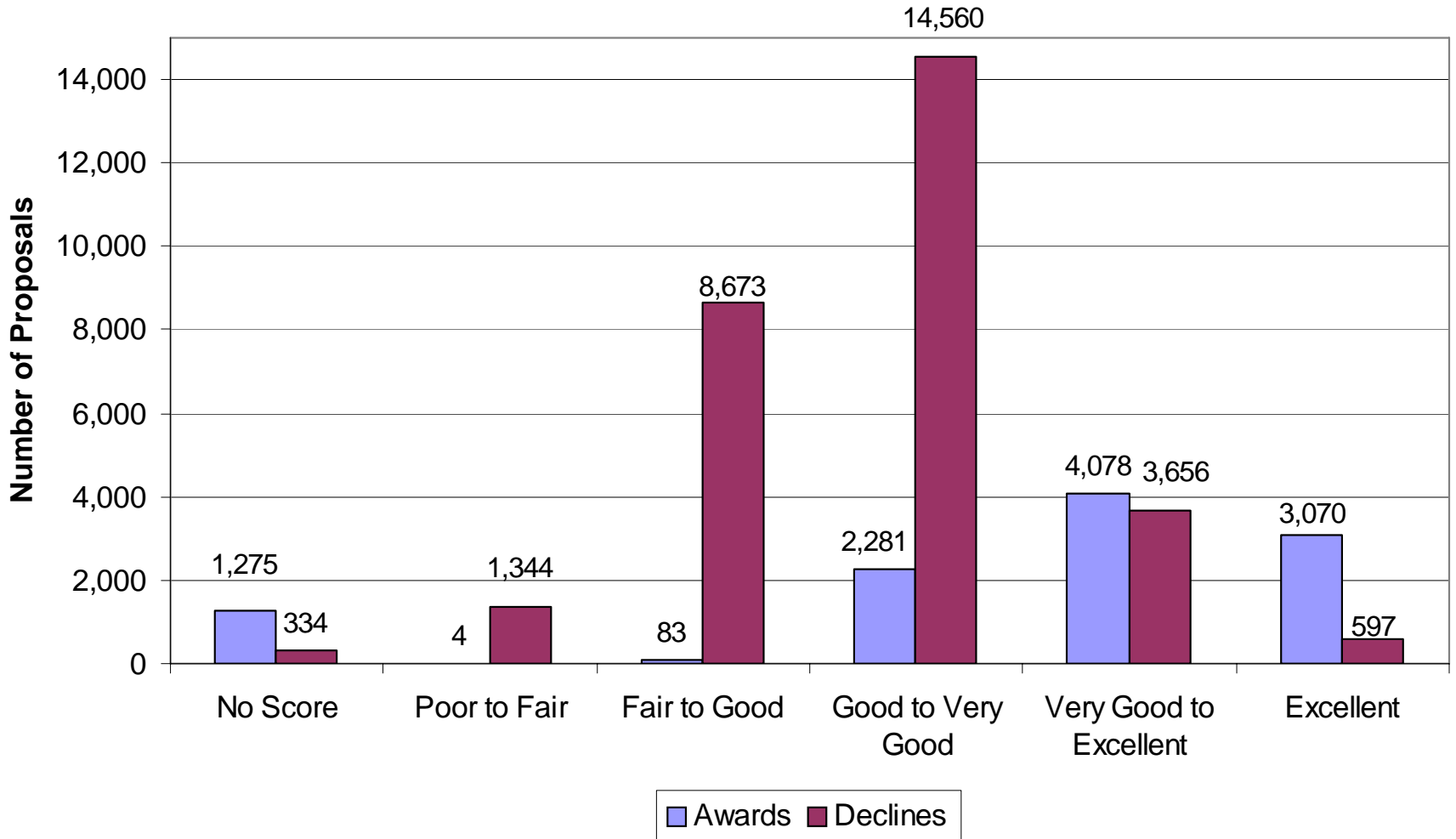


Current Proposal, Award and Funding Trends

COMPARISON OF NSF BUDGET, STAFF, AND COMPETITIVE PROPOSAL SUBMISSION

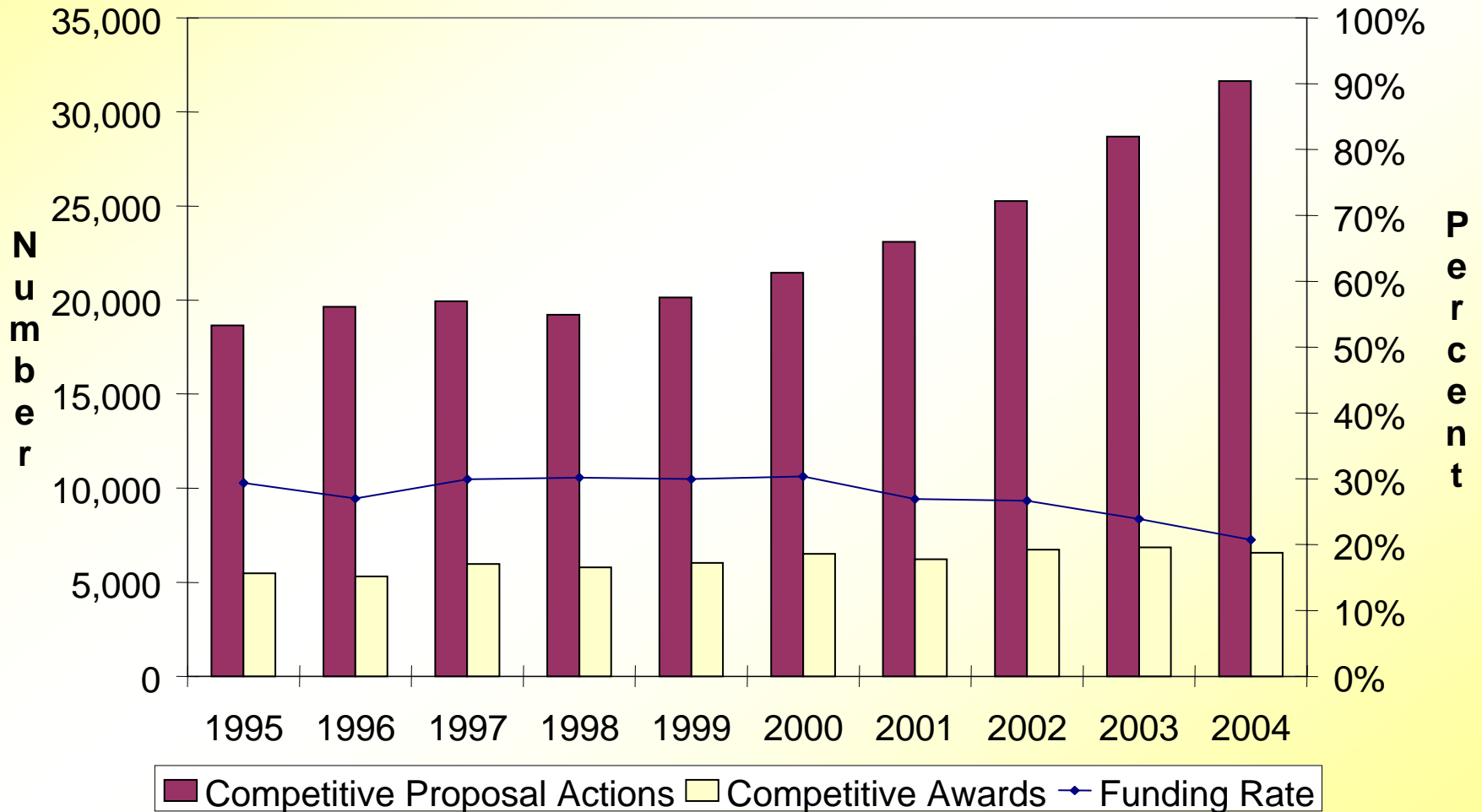


Distribution of Average Reviewer Ratings

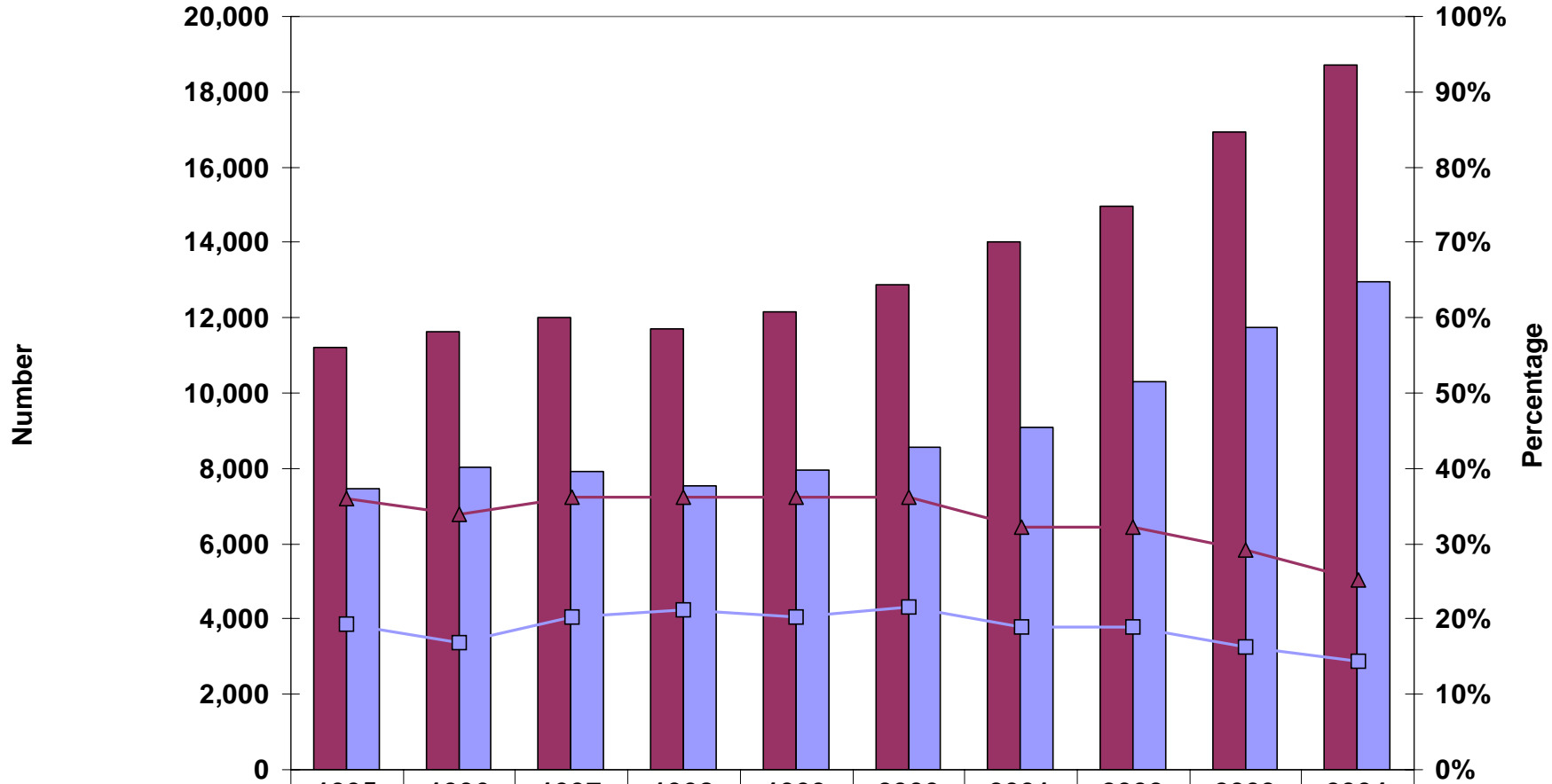


Number of FY 2003 Proposals – 29,164 Declines, 10,791 Awards

NSF Funding Rate for Competitive Awards - Competitive Research Grants

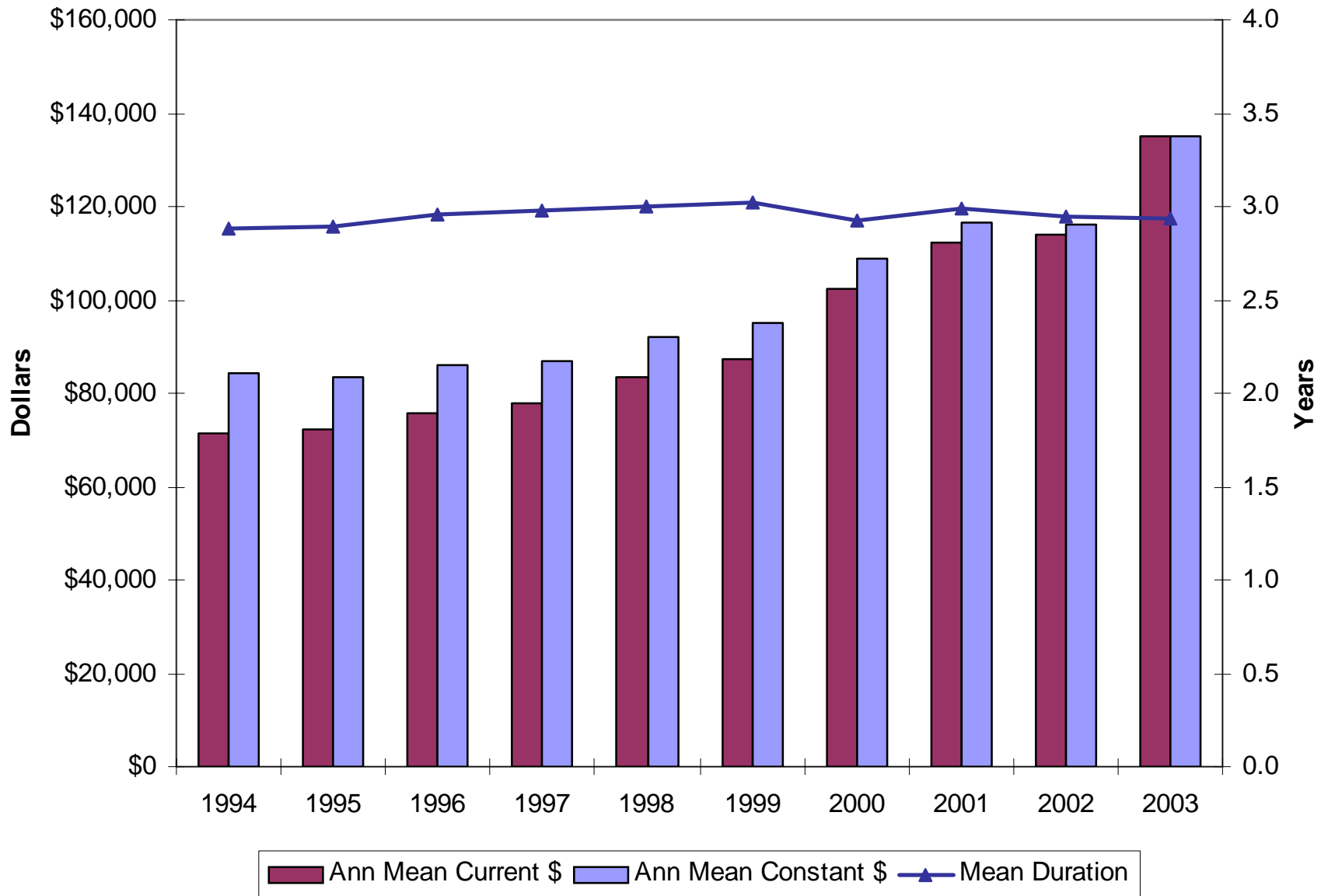


Research Grant Proposals by PI Type



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
■ Proposals - Prior PI	11,203	11,635	12,026	11,693	12,172	12,885	14,013	14,965	16,944	18,700
■ Proposals - New PI	7,446	8,013	7,910	7,526	7,951	8,561	9,084	10,286	11,752	12,941
▲ Funding Rate - Prior PI	36%	34%	36%	36%	36%	36%	32%	32%	29%	25%
■ Funding Rate - New PI	19%	17%	20%	21%	20%	22%	19%	19%	16%	14%

NSF Competitive Award Size and Duration - Research Grants



*Based on estimated 2002-2003 GDP Deflators