



The View from NSF

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- Gravity Program Overview
- Other NSF support for Gravity
- Funding Trends
- Proposal Advice

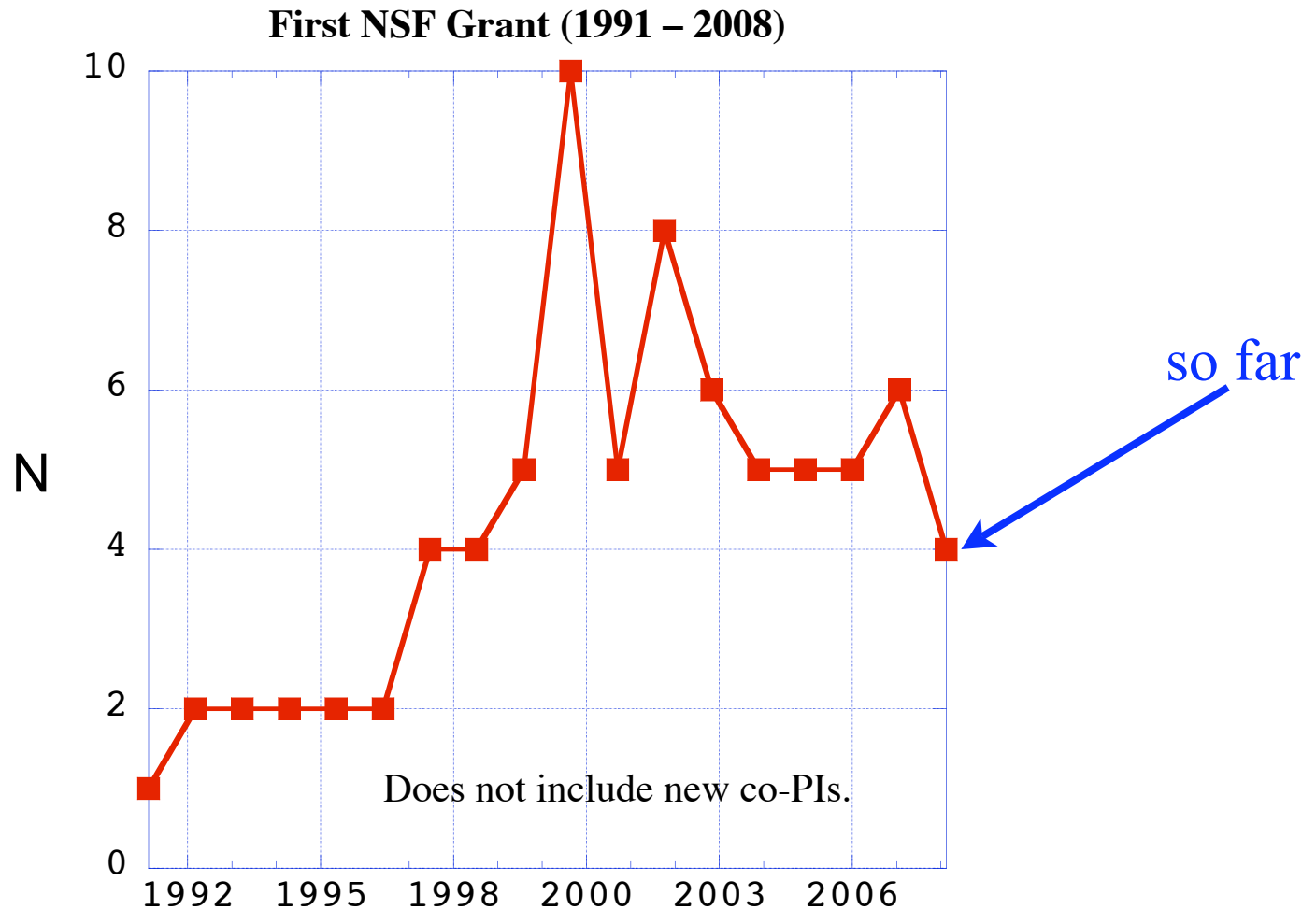


Gravitational Physics

- Sub-programs
 - LIGO Laboratory
 - Gravitational Theory
 - Gravitational Experiments
 - LIGO Research Support (LSC) New name!!
- Topics
 - Gravitational Wave Research
 - Tests of Fundamental Physics
 - Cosmology
 - Classical and Quantum Gravity Theory



New Investigator Trends





Other gravity support at NSF

- Physics Division
 - Particle & Nuclear Astrophysics + Theory
 - Physics at the Information Frontier (PIF)
 - Physics Frontier Centers (?): Review in progress
- Astronomy Division
- Mathematical Sciences Division
- Office of International Science & Engineering
- Office of Cyberinfrastructure



Other programs at NSF

- Major research instrumentation (MRI)
- Focused Research Groups in Mathematics and Science
- International collaborations
- International graduate fellowships
- Communicating research to public audiences
- Cyber-enabled Discovery & Innovation (CDI)



CAREER Program

Faculty Early Career Development Program: NSF's most prestigious awards in support of the early career-development activities of those **teacher-scholars who most effectively integrate research and education** within the context of the mission of their organization.

Eligibility: Must be tenure track Asst. Prof. by 1 Oct 2008

Deadline (approx): July 2008

Duration: 5 years

Minimum total budget: \$400 K

PHY CAREER: Division wide competition, 10 – 15% success rate

Note: A **new CAREER solicitation** should be released in May. If you are interested in this program, read solicitation carefully for changes in eligibility, budget, and criteria and for actual deadline date.



Status of Advanced LIGO

From the President's FY 2009 Budget Request:

“A request for MREFC funding for AdvLIGO construction to begin April 1, 2008, is being submitted to the National Science Board for final approval at the March 2008 meeting.”

The referenced meeting is 26–27 March 2008.



Status of Advanced LIGO

From the President's FY 2009 Budget Request:

Major Research Equipment and Facilities Construction

Total Obligations for AdvLIGO (Dollars in Millions)

	Prior FY 2007 Years	FY 2007 Actual	FY 2008 Estimate	FY 2009 Request	ESTIMATES				
					FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
<i>R&RA Obligations:</i>									
Concept & Development	34.50	6.24	-						
Management and Operations	-	33.00	29.50	28.50	28.50	29.00	31.00	33.00	36.00
Subtotal, R&RA Obligations	\$34.50	\$39.24	\$29.50	\$28.50	\$28.50	\$29.00	\$31.00	\$33.00	\$36.00
<i>MREFC Obligations:</i>									
Construction	-	-	32.75	51.43	46.30	15.21	23.73	15.50	19.78
Subtotal, MREFC Obligations	-	-	\$32.75	\$51.43	\$46.30	\$15.21	\$23.73	\$15.50	\$19.78
Total: AdvLIGO Obligations	\$34.50	\$39.24	\$62.25	\$79.93	\$74.80	\$44.21	\$54.73	\$48.50	\$55.78



Budget FY 2008

(\$M)

	NSF	MPS	PHY
FY2007	5917	1151	248.5
FY2008	6032	1167	250.5
Δ	1.9%	1.4%	0.8%



Gravity for FY 2008

(\$M)

	LIGO Lab	Core PI	AdvLIGO
FY2007	33.00	12.68	0
FY2008	29.50	11.88*	32.75
Δ	†	-6.3%**	†

*Does NOT include \$1.1 M FY 08 increase for LIGO Data Grid.

† Not meaningful due to AdvLIGO start.

**Not yet final.



Gravity Program Priorities

In a growing field with flat or declining Gravity Program budgets, only “high priority” proposals have a good chance for support.

- Highest priorities are LIGO / AdvLIGO critical path and / or research in any area of gravitational physics with the potential to influence the direction of the field.
- Other priorities are relevance to LIGO, important gravitational physics, broadening participation, and unusual educational or outreach broader impact.



Gravity Program Priorities

R&D beyond Advanced LIGO:

Value: To advance GW science + Advanced LIGO risk reduction

Priority 1: Envisioned as part of “enhanced” AdvLIGO

Priority 2: Use not envisioned now but could be put into LIGO facility

Priority 3: Would require a new facility (e.g. European 3rd generation detector, DUSEL,)

Is it time for a reference design for Ultimate LIGO?

AMERICAN COMPETITIVENESS INITIATIVE

LEADING THE WORLD IN INNOVATION

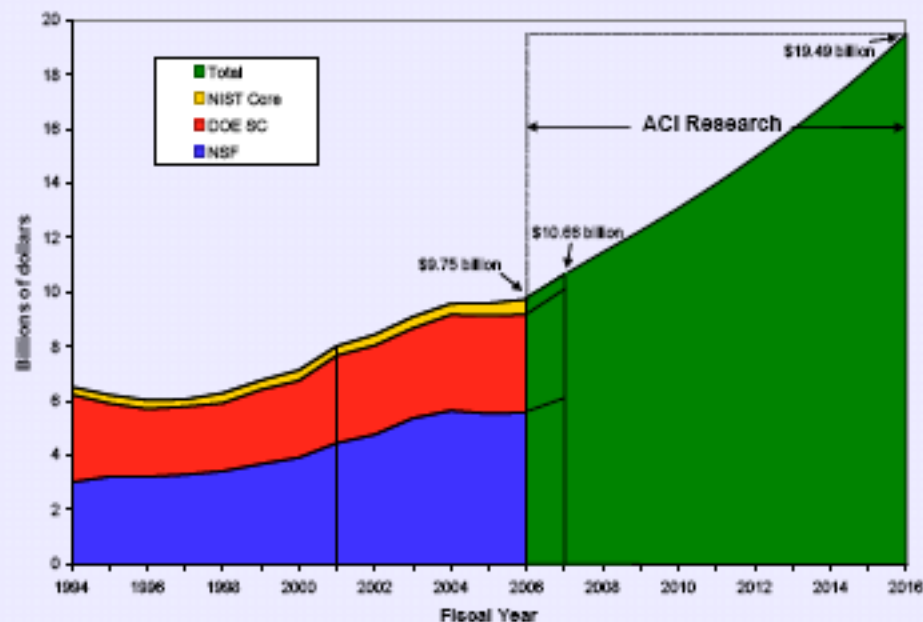


DOMESTIC POLICY COUNCIL
OFFICE OF SCIENCE AND TECHNOLOGY POLICY

FEBRUARY 2006

Figure 1: ACI Research Funding, 2007-2016.

American Competitiveness Initiative Research: FY 2007 - FY 2016



	FY 2006 Funding	ACI Research FY 2007		ACI Research FY 2016	
	(billions of dollars)	(billions of dollars)	% increase	(billions of dollars)	% increase over FY06
NSF	\$5.58	\$6.02	7.8	\$11.16 ¹	100.0
DoE SC	\$3.60	\$4.10	14.0	\$7.19 ¹	100.0
NIST Core ²	\$0.57 ³	\$0.54	-5.8 ⁴	\$1.14 ¹	100.0
TOTAL	\$9.75	\$10.66	9.3	\$19.49	100.0

¹ ACI doubles total research fund; individual agency allocations remain to be determined.

² NIST core consists of NIST lab research and construction accounts.

³ The 2006 enacted level for NIST core includes \$137 million in earmarks.

⁴ Represents a 24 percent increase after accounting for earmarks.



President's request FY 2009

(\$M)

	NSF	MPS	PHY	LIGO	AdvLIGO
FY2008	6032	1167	250.5	29.50	32.75
FY2009	6854	1403	297.7	28.50	51.43
Δ	13.6%	20.2%	18.8%	†	†



Proposal Advice

**TARGET DATE:
SEPTEMBER 24, 2008**

No late proposals accepted without prior permission.

SUBMIT TO **LIGO RESEARCH SUPPORT.**

Submit to “Dear Colleague Letter (**NSF 08-TBD**)” or “Program Description (**PD 06-1244**)” if at all possible. **DO NOT SUBMIT TO GPG** unless absolutely necessary.

If this is your first proposal or a previous proposal was declined or criticized as poorly written, seek mentoring. **If you are an experienced grantee, offer mentoring.**



Proposal Review

Step 1: With PI permission, proposal is sent to the LIGO Lab for review: (1) importance to LIGO/AdvLIGO; (2) quality of gravitational wave science; (3) track record of PI and/or group in LSC; (4) impact, if any, on LIGO Lab resources.

Step 2: Normal NSF review by panel: (1) intellectual merit; (2) broader impact. Usually, they will have access to the LIGO Lab review.

NSF panelists are unlikely to be GW scientists: (1) include a general introduction in proposal; (2) clearly explain relevance of proposed activities to LIGO/AdvLIGO; (3) What will YOU do? (4) include copy of most recent MOU with LIGO Lab if available; (5) include pointers to any relevant LSC white papers.