



The View from NSF

LSC Meeting – March 2005

Beverly K. Berger

- Introduction
- Budget for FY 2005, prospects for FY 2006
- Advanced LIGO
- Advice

G050105-00-0



Gravitational Physics Program

- Research related to gravitational waves
- Experiments to test gravitational theories
- Experiments to test particle physics and string theory via equivalence principle violations and deviations from $1/r^2$
- Theoretical research in classical and quantum gravity

Beverly Berger, Program Director, Gravitational Physics

Tom Lucatorto, Program Director, LIGO

Joe Dehmer, Division Director, Physics



Budget FY 2004

(\$M)

	NSF	MPS	PHY	Gravity
FY2003	5369	1041	224.5	44.47
FY2004	5652	1092	227.7	44.00
Δ	5.3%	4.9%	1.4%	-1.0%



Gravity in Detail for FY 2004

(\$M)

	Gravity	LIGO Lab	LSC + Other
FY2003	44.47	33.00	11.47
FY2004	44.00	33.00	11.00
Δ	-1.0%	0%	-4.1%



Budget FY 2005

(\$M)

	NSF	MPS	PHY	Gravity
FY2004	5652	1092	227.7	44.00
FY2005	5473	1070	224.9	42.96
Δ	-3.2%	-2.0%	-1.2%	-2.4%



Gravity in Detail for FY 2005

(\$M)

	Gravity	LIGO Lab	LSC + Other
FY2004	44.00	33.00	11.00
FY2005	42.96	32.00	10.96
Δ	-2.4%	-3.0%	-0.4%



President's Request FY 2006

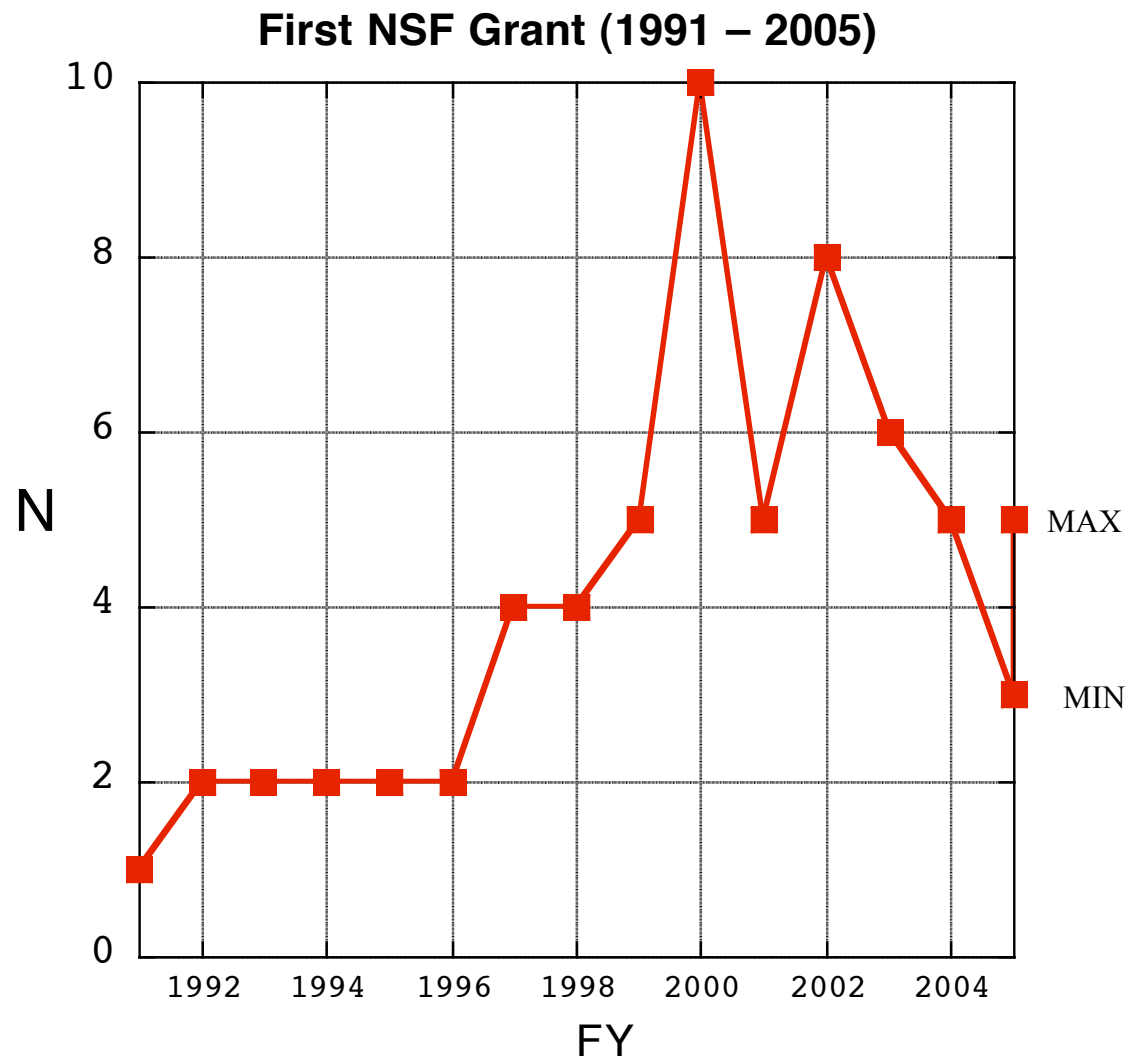
(\$M)

	NSF	MPS	PHY	LIGO
FY2005	5473	1070	224.9	32.00
FY2006	5605	1086	230.1	32.00
Δ	2.4%	1.5%	2.3%	0%

- For the latest information see NSF Office of Legislative and Public Affairs: <http://www.nsf.gov/about/congress/index.jsp> and AIP Science Policy News: <http://www.aip.org/fyi/> .
- HR 4664 passed in FY03 authorizes much larger increases.

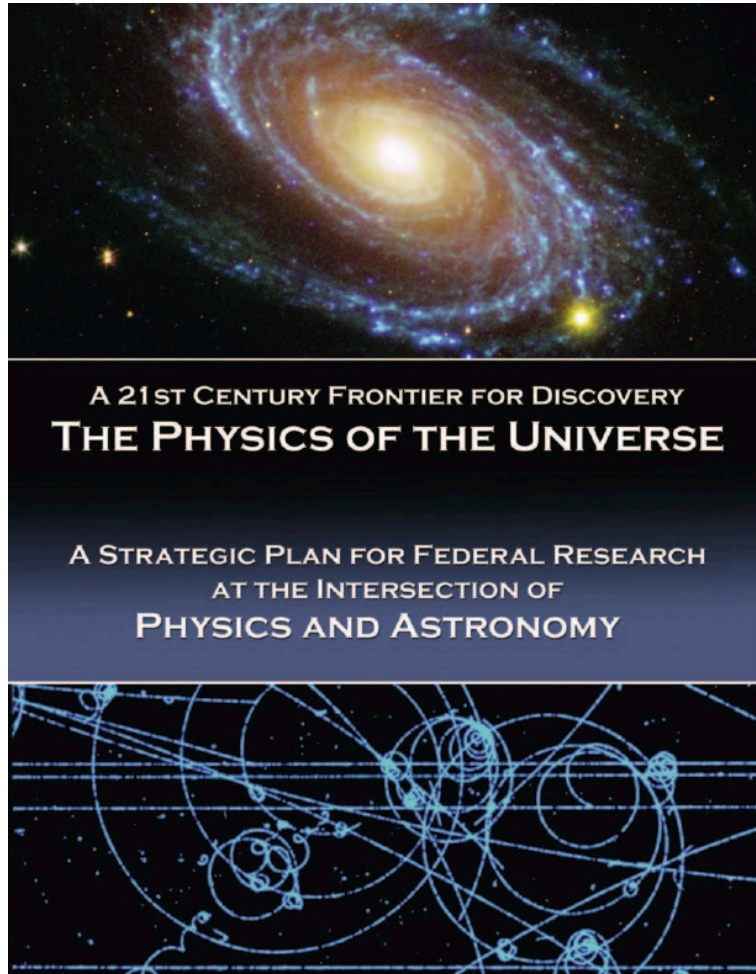


Growth of the program





Physics of the Universe



Gravity priorities:
Advanced LIGO
GW source simulation

Implementation:
POU funds in FY 05 Request and
to extent possible in FY 05 actual.
POU funds in FY 06 Request.

<http://www.ostp.gov/html/physicsoftheuniverse2.pdf>



Advanced LIGO

National Science Board Resolution:

The Board concurred that planning for Advanced LIGO is sufficiently advanced and the intellectual value of the project sufficiently well demonstrated to justify consideration by the Acting Director and the National Science Board for **funding in FY 2007 or a future NSF budget request**. The Board approved the resolution with the understanding that the **existing LIGO Program will collect at least a year's data of coincident operations at the science goal sensitivity before initiating facility upgrades** to the new Advanced LIGO technology.



Advanced LIGO

President's FY 2006 Budget Request:

NSF is requesting no new starts in FY 2006.

Two new starts are requested in FY 2007, and one new start is requested in FY 2008. In priority order, these are: Ocean Observatories in FY 2007; the Alaska Region Research Vessel in FY 2007; **Advanced LIGO in FY 2008.** ²

²...AdvLIGO received NSB approval for inclusion in a future Budget Request in October 2004 ... and is yet **unranked**.



Advice

- 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 very important, innovative research in any area of gravitational physics.
- Other priorities are relevance to LIGO*, important gravitational physics, broadening participation, and unusual educational or outreach broad impact.

*LIGO Lab review of submitted proposals helps provide information.



Other programs

- ITR program is over. Ongoing discussions related to possible future Computer Infrastructure program. Check the CISE web site <http://www.nsf.gov/dir/index.jsp?org=CISE> for possible funding opportunities.
- Physics Division had started program in Physics at the Information Frontier. This program will probably accept proposals next fall. **Check for Physics Division “Dear Colleague Letter.”**
- International Division has become the Office of International Science and Engineering (OISE). Check <http://www.nsf.gov/div/index.jsp?div=OISE> for possible funding opportunities.