NSF Fiscal Year 2007 Budget Request

This article is the 34th in a series of annual reports outlining the president's request to Congress for the budget of the National Science Foundation. Last year's report appeared in the June/July 2005 issue of the *Notices*, pages 637–41.

The fiscal year 2007 budget request for the National Science Foundation (NSF) is a big disappointment for mathematics. Despite a substantial increase for the NSF, as well as for the Mathematical and Physical Sciences directorate, the Division of Mathematical Sciences (DMS) is slated for an increase of only about 3%, a little bit above the expected inflation rate. What is more, the NSF's "Mathematical Sciences Priority Area", which has boosted the DMS budget over the last several years, is scheduled to end in 2007.

The Bush Administration sent its fiscal year 2007 budget request to Congress in February 2006. One component of the request is the "American Competitiveness Initiative", consisting of substantial increases for the Department of Energy's Office of Science, for the National Institute of Standards and Technology, and for the NSF. The initiative calls for a 7.9% increase for the NSF, to just over US$6 billion. This increase represents a marked shift from FY2006, when the Bush Administration sought only a 2.4% rise for the NSF. The final Congressional appropriation for fiscal 2006 brought the NSF budget up just 2.0% above the fiscal 2005 level.

A preliminary analysis by the American Association for the Advancement of Science finds that, under the terms of the FY2007 request, overall federal funding for research and development would climb by about US$2.6 billion. Even more than that amount would be absorbed as increases for weapons development and space exploration technologies, "leaving declining funding for the remainder of the [research and development] portfolio," the analysis notes. In his State of the Union address, President Bush set out the goal of doubling

Table 1: National Science Foundation (Millions of Dollars)

	2003 Actual	Change	2004 Actual	Change	2005 Actual	Change	2006 Plan	Change	2007 Request
(1) Mathematical Sciences Research Support	$ 178.8	12.0%	$ 200.3	0.0%	$ 200.2	-0.4%	$ 199.3	3.2%	$ 205.7
(2) Other Research Support (Note a)	4054.7	5.5%	4277.0	-1.8%	4199.7	2.9%	4323.1	8.7%	4700.7
(3) Education and Human Resources (Note b)	934.9	1.0%	944.1	-10.7%	843.5	-5.5%	796.7	2.4%	816.2
(4) Salaries and Expenses (Note c)	201.0	14.7%	230.6	2.9%	237.3	10.4%	262.1	13.5%	297.6
(5) Totals	$5369.3	5.3%	$5652.0	-3.0%	$5480.8	1.8%	$5581.2	7.9%	$6020.2
(6) (1) as a % of the sum of (1) and (2)	4.22%		4.47%		4.55%		4.41%		4.19%
(7) (1) as a % of (5)	3.33%		3.54%		3.65%		3.57%		3.42%

Tables prepared by Notices *staff. Totals may not add up due to rounding.* **Note a:** Support for research and related activities in areas other than the mathematical sciences. Includes scientific research facilities and instrumentation. **Note b:** Support for education in all fields, including the mathematical sciences. **Note c:** Administrative expenses of operating the NSF, including the National Science Board and the Office of the Inspector General.

funding for "critical basic research programs in the physical sciences over the next 10 years". The emphasis on the physical sciences is reflected in the proposed budget for the National Institutes of Health, which under the terms of the request would be flat for the second year in a row.

It appears that the Bush Administration's interpretation of the term "physical sciences" does not include mathematics, as the DMS is slated for only a 3.2% increase. And outside of the NSF, there is less and less grant money available for mathematics research, due in large part to declining budgets in those agencies of the Department of Defense that have mathematics programs. Indeed, nowadays the DMS provides 77% of all federal funding for academic research in the mathematical sciences, up from about 50% a dozen years ago. By contrast, according to Samuel M. Rankin III, director of the AMS Washington Office, the NSF is currently the source of just 40% of the funding for academic research in the physical sciences.

The DMS budget was flat in fiscal 2005 and declined slightly in fiscal 2006, so the modest proposed increase for fiscal 2007 would leave the division with less, in constant dollar terms, than it had three years earlier. The requested increase for the DMS is the lowest among the six divisions within the Mathematical and Physical Sciences (MPS) directorate, which overall has a requested increase of 6.0%. "It looks to me as if the NSF or MPS is intent on bringing DMS back to its historical position, as far as funding goes—that is, the lowest-funded division within MPS," Rankin remarked. "To me this is not recognizing current reality—the many contributions the mathematical sciences makes toward technological innovation and competitiveness. This is surprising, given that innovation and competitiveness are on the minds of Congress and the Administration."

The NSF's "Mathematical Sciences Priority Area" (MSPA), which officially began in fiscal year 2003, has had an effect: Between 2002 and the current fiscal year of 2006, the DMS budget rose by

Table 2: Directorate for Mathematical and Physical Sciences (Millions of Dollars)

	2003		2004		2005		2006		2007	
	Actual	% of Total	Actual	% of Total	Actual	% of Total	Plan	% of Total	Request	% of Total
(1) Mathematical Sciences	$ 178.8	17.2%	$ 200.3	18.3%	$ 200.2	18.7%	$ 199.3	18.4%	$ 205.7	17.9%
(2) Astronomical Sciences	187.1	18.0%	196.6	18.0%	195.1	18.2%	199.6	18.4%	215.1	18.7%
(3) Physics	224.5	21.6%	227.8	20.9%	224.9	21.0%	233.1	21.5%	248.5	21.6%
(4) Chemistry	181.6	17.4%	185.1	17.0%	179.3	16.8%	180.8	16.7%	191.1	16.6%
(5) Materials Research	241.4	23.2%	250.6	23.0%	240.1	22.4%	242.9	22.4%	257.4	22.4%
(6) Office of Multidisciplinary Activities	27.3	2.6%	31.1	2.8%	29.8	2.8%	29.7	2.7%	32.4	2.8%
(7) Totals	$1040.7	100.0%	$1091.6	100.0%	$1069.4	100.0%	$1085.4	100.0%	$1150.3	100.0%

Table 3: Compilation of NSF Budget, 2001–2007 (Millions of Dollars)

	2001 Actual	2002 Actual	2003 Actual	2004 Actual	2005 Actual	2006 Plan	2007 Request	2001–2005 Change	2001–2007 Change
(1) Mathematical Sciences Research Support	$ 121.4	$ 151.5	$ 178.8	$ 200.3	$ 200.2	$ 199.3	$ 205.7	64.9%	69.4%
Constant Dollars	*68.5*	*84.2*	*97.2*	*106.0*	*102.5*			*49.6%*	
(2) Other Research Support (Note a)	3370.2	3579.8	4054.7	4277.0	4199.7	4323.1	4700.7	24.6%	39.5%
Constant Dollars	*1903.0*	*1989.9*	*2203.6*	*2264.2*	*2150.4*			*13.0%*	
(3) Education and Human Resources (Note b)	795.4	866.1	934.9	944.1	843.5	796.7	816.2	6.0%	2.6%
Constant Dollars	*449.1*	*481.4*	*508.1*	*499.8*	*431.9*			*-3.8%*	
(4) Salaries and Expenses (Note c)	172.9	176.6	201.0	230.6	237.3	262.1	297.6	37.2%	72.1%
Constant Dollars	*97.6*	*98.2*	*109.2*	*122.1*	*121.5*			*24.5%*	
(5) Totals	$4459.9	$4774.1	$5369.3	$5652.0	$5480.8	$5581.2	$6020.2	22.9%	35.0%
Constant Dollars	*2518.3*	*2653.8*	*2918.1*	*2992.0*	*2806.3*			*11.4%*	

Current dollars are converted to constant dollars using the Consumer Price Index (based on prices during 1982–84).
For Notes a, b, and c, see Table 1.

almost one-third. In fact, one of the original aims of the MSPA was to double the DMS budget. Although the doubling will not have been achieved, the budget request calls for the MSPA to end in FY2007. The NSF budget request document speaks of "mainstreaming" interdisciplinary research projects that were funded through the MSPA. "Investments in formal interdisciplinary partnerships through the MSPA will be redirected to unsolicited proposals and the fundamental mathematical sciences component of the MSPA," the document states. It also says that in fiscal 2007 the DMS intends to increase by about US$5 million its support for core research in order to maintain its proposal success rate of 32% (in 2005, the DMS received 2,172 proposals and funded 687). In addition, the DMS will increase funding for Research Experiences for Undergraduates and for Enhancing the Mathematical Sciences Workforce in the 21st Century (each has a requested increase of US$500,000).

Each year in the spring, the AMS Committee on Science Policy (CSP) meets in Washington, DC. At its last meeting in 2005, the CSP decided to dispense with the customary format for its meeting, which featured a succession of presentations about federal science policy and funding. Instead, the format for the spring 2006 meeting has CSP members fanning out across Capitol Hill to meet with congressional representatives, senators, and staffers to discuss funding for research. The meetings will be arranged by the AMS Washington Office, under Rankin's direction. In its dealings with Congress, the Washington Office has generally pursued a strategy of banding together with other science organizations to speak in a unified voice for strong federal support for NSF overall, rather than seeking favored treatment for the DMS specifically. "However, we will be advocating for a better increase to the DMS budget this year," says Rankin.

—Allyn Jackson