the manufacturers, because of what Blattner calls his own "bumbling," proved an easy target. Among the errors Blattner is owning up to is that the "association" whose letterhead was used does not yet exist—the companies listed on the stationary, it seems, have only talked about forming one. So it is no surprise that officials at two of the five companies listed, Applied Biosystems Inc. and TEXTCO, were furious when they first learned about the letter—10 days after it was sent. Both immediately wrote Natcher over the weekend disavowing any responsibility for or knowledge of the letter. "It was naive, stupid, and not necessary," says Blattner about using the letterhead. "I apologize."

In any case, with the budget ax hanging over their heads, both sides eventually hammered out a policy statement that meets some, though not all, of the manufacturers' concerns. And perhaps more important than the specific concessions about the Medline licensing fee and staying away from fancy end-users software, NCBI agreed to keep the companies apprised of its plans and to set up an advisory group of manufacturers.

Both sides are claiming victory—Blattner and friends because they finally got Lipman's attention; Lipman because he apparently averted a near-fatal budget cut. (Exactly how NCBI's budget fared will not be known for a couple of weeks.) Indeed, both sides seem genuinely happy to have the affair behind them.

But is it? Although Obey did not introduce any specific language into the appropriation subcommittee's report, he reportedly told the committee that he was unhappy with what he perceived as NCBI's hardball tactics. The committee vowed to watch NCBI closely over the year, and at least some members believe that important issues about the proper division of labor between NLM and the private sector remain to be resolved. And it's a safe bet that when the manufacturers voice their gripes again, as they are sure to, not only NCBI but Capitol Hill will be paying careful attention.

–Leslie Roberts

SCIENCE FUNDING

Is the Wolf Finally at the Door?

For the past several years, researchers by and large have escaped the brunt of the budget ax that has chopped large chunks out of domestic spending. Certainly, as high-energy physicist and Nobel laureate Leon Lederman pointed out in his January 1991 report, *Science: The End of the Frontier?*, research budgets haven't grown as fast as scientists would like. But at least the federal government has provided modest overall increases for R&D—and substantial boosts in some selected areas. This year, however, researchers could be in for a nasty shock.

The first concrete sign of trouble came on 17 June, when the House voted to cancel the Superconducting Super Collider (SSC) amid warnings from several legislators that the nation cannot afford to support such costly and esoteric ventures. A week later, a key House appropriations subcommittee approved a bill that would hold the National Science Foundation's (NSF) budget virtually flat in fiscal year 1993 instead of increasing it by 18% as the Administration had requested (*Science*, 3 July, p. 19). The same subcommittee also voted to cut nearly $200 million from science programs at the National Aeronautics and Space Administration (NASA) while trimming the $2.25 billion requested for the space station down to $1.7 billion. And just last week, another appropriations subcommittee approved a bill that would give the National Institutes of Health (NIH) an increase of only about 3.3%, about $200,000 less than the Administration requested; in recent years, Congress has almost unfailingly added substantially to the request for NIH (see table).

While the actions taken so far are still preliminary—the full House hasn't yet voted on any spending bills except the one for the Department of Energy (DOE), and the Senate will get its own crack at them later this summer—the prevailing wisdom on Capitol Hill is that most research agencies are going to end up with budgets that won't even keep pace with inflation. Indeed, the main question now seems to be whether research funding's "charmed life," as one congressional aide puts it, has come to a permanent end. While some observers, such as House science committee chairman George Brown (D–CA), are predicting that 1993 will be science's most painful year, other analysts at the Congressional Budget Office (CBO) suggest that the worst may be yet to come.

RESEARCH BUDGET SQUEEZE

Agency	1992 Budget	1993 Request	1993 House Action
NSF	$1.9 billion	$ 2.2 billion	$ 1.9[1] billion
NIH	8.9	9.4	9.2[2]
NASA	2.7	3.0	2.7[1]
Space station	2.0	2.3	1.7[1]
DOE	2.6	2.9	2.5[3]
SSC	484 million	650 million	0[3]

[1] 25 June subcommittee markup [2] 3 July subcommittee markup
[3] Passed by House on 17 June

Dunce caps. Ask just about anyone familiar with the federal government's Byzantine budget process why science is faring badly this year, and they'll give you a three-word answer: the Budget Enforcement Act. Passed in 1990 as a compromise between the White House and Congress aimed at controlling growth in federal spending, the law set strict ceilings on several budget categories for the fiscal years 1991 through 1993 and forbade Congress to shift funds from one category to another.

For the past 2 years, these ceilings have sharply restricted legislators' flexibility to spend money in the "domestic discretionary" portion of the budget—a roughly $500 billion category that funds all civilian R&D and a variety of other government functions ranging from the criminal justice system to environmental protection to social welfare programs. Up to now, however, science has done surprisingly well under the budget caps. Last year, for instance, NSF received an 11% increase in its research budget, while NIH's funding was boosted by 8%, NASA's space science by 10%, and DOE's energy research by 10%.

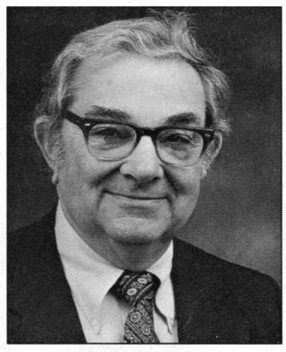
The problem this year, according to CBO analysts and congressional aides, is a domestic discretionary budget ceiling for fiscal 1993 so low that Congress would have to cut all domestic programs by 1.3% from their 1992 levels, or about $6.4 billion, just to satisfy the budget law. House budget committee analyst Michael Telson predicted last April that this budget pressure would create a massive game of "musical chairs" in which science funding would compete for budget increases against popular social programs such as education and housing (*Science*, 24 April, p. 439). "What that means is that when Congress divvied up the pot, it had to distribute the pain," one congressional aide says now. "Some programs are going to get more—priorities like education and health are going to get increases. Other programs are going to get screwed."

Trick or treat. Adding insult to injury, say some budget mavens on Capitol Hill, is the fact that many of the budgeteers' favorite accounting tricks seem to have outlived their usefulness, making it even harder to find "new money" this year. One popular method of evading the budget caps, for instance, has been to appropriate money for a program but to delay part or all of the actual spending, or "outlay," until the following

fiscal year. Several years of such tricks have created a "snowball" of delayed spending obligations that now consumes as much as 10% of the total money in some spending bills, congressional aides say. Large programs such as NASA's Earth Observing System further limit congressional flexibility by locking legislators into a programmed schedule of annual budget increases.

The priority-setting choices forced by such fiscal pressures are magnified in an election year, when the entire membership of the House faces the voters. Unsurprisingly, Congress is not eager to take the potentially unpopular step of increasing basic science funding while trimming domestic programs, especially when the economy is stagnant. For that reason, few legislators seem willing to accept the Bush Administration's proposed budget, which found the money for an overall 7% increase in civilian R&D by cutting social programs such as affordable housing support and mass transit subsidies. "It's clear the Administration is trying to maintain a very high priority in science funding," says California's Brown. "Of course, [majority] House Democrats will do anything to alter presidential priorities, particularly where support for nonscience programs is concerned.... In a situation where they're forced to make choices [between R&D and social programs], the historic support of Democrats for the poor and deprived tends to take the upper hand."

The budgetary crystal ball. Brown, however, doesn't believe that the research budgets under consideration in the House represent "a major falling off of support for science," and says he hopes to see healthy budgetary growth restored soon. His reason for optimism: Next year, the budget law drops the "fire walls" that have prevented legislators from funding domestic programs with money cut from the defense budget. "The good news is that this is probably the worst year we'll encounter," Brown says. "The budget walls come down next year, so we'll have some more slack."



Tough sell. Science committee chairman George Brown.

But the situation may not improve as much as Brown hopes. Although the fire walls will fall, a new, and lower, overall ceiling for all discretionary spending—domestic, military, and international—will drop into place at the same time. Under the new cap, says Jan Paul Acton, CBO's assistant director for natural resources and commerce, Congress would need to cut defense spending by roughly $70 billion over the 2 years of 1994 and 1995 just to maintain level funding for domestic and international programs. (A cut of that magnitude would amount to just under a quarter of the full defense budget.) "In 1994, there are going to be some really hairy choices," says a CBO analyst. How research funding will fare under such circumstances—which are potentially much worse than those faced today—is anyone's guess. But the scene is unlikely to be pretty.

–David P. Hamilton

With reporting by Joseph Palca.

FAMILY MATTERS

Are Chemists Girl Crazy?

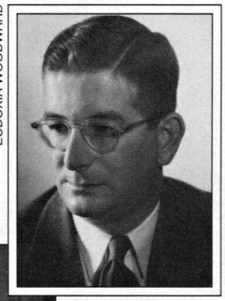
Chemists, and scientists generally, are quick to chastise the public for entertaining notions for which there's little more than anecdotal evidence, so surely there's plenty of data showing that chemists specialize in daughters.

You hadn't heard this one? For decades, members of the profession, when not exchanging or debating the latest research findings, have marveled over an apparent trend that they believe to be unique to their community: Chemists, some like to say, produce more girl babies than boy babies.

A girl thing. "I believe it," hazards University of California, Berkeley, polymer chemist Bruce Novak, a father of two daughters who first heard the idea when he was in graduate school. "Many people think this is true," concurs Brent Iverson, a bioorganic chemist at the University of Texas in Austin and the father of three girls. "When I was an undergraduate I worked for a guy who had four daughters, and my wife worked for someone [a chemist] with five daughters." Electrochemist Nate Lewis of the California Institute of Technology was so sure it was true that when his wife, also a chemist, became pregnant with their first child a year ago, "I was expecting a girl." It was a boy.

That won't change the mental chemistry of the true believers, even though some are considerably less global in their claims. For example, several theoretical chemists told *Science* that the tendency to have daughters shows up only among theoretical chemists. Then there were the NMR spectroscopists and x-ray crystallographers who claimed similar honors for their own specialties. "My version of the myth is that organic chemists have more girls," said Robert Bergman, father of two boys and an organic chemist at Berkeley. At least he used the word "myth," but before you biologists and physicists sneer out loud at this seemingly gullible group of reasoning beings, think about fighter pilots.

EUDOXIA WOODWARD



Father of the myth? Robert B. Woodward *(above)*, second wife Eudoxia, and three daughters.

A similar story had been circulating about the pilots when Bertis Little, assistant professor of obstetrics and gynecology at the University of Texas Health Science Center in Dallas, and his colleagues took off on a study of the intrepid breed. In the July 1987 *Aviation, Space, and Environmental Medicine*, Little *et al.* announced that, in a small survey of 62 pilots and astronauts exposed to high G forces, they found that about 60% of their offspring were girls. Because the bias didn't show up among 220 bomber pilots, transport pilots, and other personnel whose aeronautic routines involve far less fast and sharp maneuvering, Little and his colleagues suggested that exposure to high G forces might influence the survival of the sex-determining chromosomes.

But even the highest fliers in the chemistry community experience few G's in their daily lives—and no similar study has been done for chemists and their offspring. So what's the evidence? Hoping to remove any stain