Congress Looks Fondly on Science and Technology

With unaccustomed alacrity, Congress has completed work on budgets for most of the federal government's nondefense science agencies for fiscal year (FY) 1984. With a few notable exceptions, it has been even more generous than the Administration in its support for research and development—a reflection of the political appeal of high technology as a widely touted cure for economic ills.

On 29 June—a full 3 months before FY 1984 even begins—Congress sent President Reagan budget bills containing funds for the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), and the R & D programs of the Department of Energy (DOE) and the Environmental Protection Agency (EPA). Yet to come is the budget bill for the National Institutes of Health.

NSF has emerged from the process with a budget of $1.32 billion, a massive 21 percent increase over current spending levels. Congress went along with most of the Administration's proposals for major increases in NSF's research programs. It did, however, shave a little off the total proposed for physical sciences and engineering—disciplines that the Administration had singled out for an extra large dollop of money. The big change made by Congress was to double NSF's proposed expenditure on science education. The foundation will have $75 million to spend on education next year.

The final budget bill also sets terms for a temporary truce in a battle that has been taking place in the past few months over the division of NSF's research budget. Representatives of liberal arts colleges and other nongraduate institutions have been lobbying hard for a bigger share of NSF's riches, pointing out that their share of the foundation's budget has dropped from about 2 percent in 1968 to 1 percent today. They got a sympathetic reception in the House, where the spread-the-wealth argument has a lot of political appeal, since most members have a liberal arts college in their districts. The House Appropriations Committee decreed that 3 percent of NSF's research budget should go to non-Ph.D-granting institutions. For obvious reasons, the research universities opposed this set-aside, and the Senate refused to support it. The final version of the bill does not require NSF to set aside a portion of its funds, but it does "strongly urge" the foundation to reverse the trend of declining support for nongraduate colleges and directs NSF to produce a progress report by 31 March 1984.

A similar battle is also shaping up over NSF's education programs. Although the budget bill approved last week does not tell NSF how to spend its newfound education wealth, Congress is likely to pass legislation soon which will establish a detailed program. Some of the bills under consideration would divide up the funds according to the number of students in school districts. But the National Science Board, NSF's policy-making body, sees such an approach as undermining the foundation's traditional goal of supporting only the best projects. On 17 June, in an apparent attempt to head such legislation off at the pass, the board passed a resolution stating that NSF "should select projects and activities in precollege education on the basis of the principles of excellence and should not administer formula or other forms of grant programs that might preclude application of these principles."

As for NASA, it came away with a budget of $7.177 billion, an increase of some $71 million over the Administration's request. The chief additions to NASA's R & D budget were $45 million to help pay for cost overruns on the Space Telescope, which has been threatening to eat into other space science projects, and $20 million to provide extra support for research in physics, astronomy, and planetary sciences.

EPA has ended up with a research budget of $142.7 million, an increase of about 20 percent over current funding levels. Even this boost will not lift the agency back to the level it enjoyed before the Reagan Administration took office, however. The House had wanted to give EPA $165 million for R & D, but the Senate was not so eager to bust the budget, and stuck closely to the Administration's request. The compromise approved last week does, however, add funds for a few key research programs, including $7 million for R & D on hazardous wastes and $5 million for high-priority research to be funded at the direction of the administrator.

DOE's budget contains funds for several controversial programs, and it is something of a miracle that Congress managed to agree on a final bill. In what is rapidly becoming an established pattern, Congress has refused to go along with major reductions in funding for solar energy, approving $179 million for DOE's solar research, compared with $87 million proposed by the Administration.

As for high energy physics, Congress has stuck fairly close to the Administration's budget request, although it has shaved some money off the budget for the Stanford Linear Collider and added $5 million for Isabelle at Brookhaven, apparently in an attempt to keep a breath of life in the project.

A major casualty is the National Center for Advanced Materials (NCAM), a new facility to be built at the Lawrence Berkeley Laboratory. Congress approved only $3 million for the project instead of the $25.9 million requested by the Administration. The reduction was made on the grounds that the project has not been properly reviewed by DOE, but Congress says it may be willing to put up more funds for the facility next year. Two other unreviewed projects, the Vitreous State Laboratory at Catholic University and the National Center for Chemical Research at Columbia, were each given $5 million, although Congress told DOE to look at the proposals before dishing out the funds.

As for the Clinch River Breeder Reactor, the budget bill contains no funds at all. Congress will now only consider funding the plant if a financing plan can be worked out to bring more private money into the venture. In that case, the funding would have to be approved by Congress in a separate bill, where it would be extremely vulnerable.—**COLIN NORMAN**

A People's Medical Society

Robert Rodale, who publishes such magazines as *Prevention* and *Organic Gardening*, has launched a national citizens' group whose purpose is to fight rising medical costs and help citizens gain more control over individual health decisions.

"We are setting out to do nothing less than turn around the $300 billion a year medical/health establishment in the United States," he told a press conference in Washington.

The People's Medical Society, as it is called, is located at the Rodale Press headquarters in Emmaus, Pennsylvania. It intends to take a grass-roots approach, acting as a clearinghouse for information on other health organizations; advising members (12,000 so far) on state and national legislation; rooting out cases of medical incompetence, and promoting principles of disease prevention among both medical personnel and consumers.

Its first major project is to abet the development of local medical libraries for laypeople. According to the magazine *Nutrition Action*, this will not be another "doctor-bashing group."

—CONSTANCE HOLDEN

ESA Wants to Help Build a Space Station

If and when the National Aeronautics and Space Administration (NASA) builds its space station, the European Space Agency (ESA) would like to be a partner—if the Reagan Administration will only let it.

ESA has recently been looking at how Europe might use an American station, as well as at the ways European industry might participate in building it. Jacques Collet, who heads the ESA study group, recently explained to *Science* how these studies fit into ESA's broader plans.

"Spacelab and Ariane are coming to the end of their development phases," he says, "so the question is, Where do we go from here? It's clear that [communications satellites in] geosynchronous orbit will continue to be predominant for the next 10 years. But it's possible that space-based materials processing could take off, too. If so, we need to develop the systems to cope with a very significant new market. And we need the means to do it on our own."

Thus, he says, ESA is looking at new launch vehicles after Ariane, perhaps with the capability of bringing things back to Earth. It is also looking at "In-Orbit Infrastructure"—techniques for automated rendezvous and docking between unmanned payloads, for example, or automated assembly and servicing of payloads in geosynchronous orbit. And, of course, ESA is looking into cooperating with NASA on a manned space station.

The space station studies were accelerated last year to fit in with NASA's own study schedule. NASA says it likes the idea of international participation, says Collet. In fact the agency's original idea was for European, Japanese, and Canadian aerospace firms to work closely with American industry on mission definition studies.

That hope foundered last fall, however, when the U.S. State Department refused to grant the export agreements that would enable American firms working on the space station studies to exchange technology with the foreign firms.

ESA went ahead anyway with its own studies. But the irony of having the State Department take a hard-line stance on technology transfer to its own allies was lost on no one. In March, for example, the ESA team was not allowed to attend a major NASA conference on space station technology needs.

As Collet puts it diplomatically, "The United States is going to have to solve this technology transfer problem if it hopes to go to a cooperative endeavor on the space station."

—M. MITCHELL WALDROP

San Diego Picks Sodium Over the Stars

Astronomers lost a skirmish in their long battle against light pollution last week when the city council of San Diego, 60 miles south of the famous 5-meter (200-inch) telescope on Mount Palomar, voted to replace 17,000 aging mercury-vapor streetlamps with new, high-pressure sodium lamps—the kind with the warm, amber-pink glow that is disastrous for astronomical research. Also affected is San Diego State University's Mount Laguna Observatory.

"Spectroscopically, mercury is a line source and we can live with it," says Robert Brucato, assistant director of Palomar. "We just work between the lines. But high-pressure sodium is a continuum so broad you can't get around it."

If the decision stands, he adds, and if the surrounding communities follow San Diego's lead, then the growth rate in San Diego county is such that Palomar could be blinded within 10 years.

The irony is that Brucato and the many other scientists who testified before the council could point to a better way: *low*-pressure sodium lamps. Not only do the low-pressure lights emit virtually all their radiance in the yellow sodium doublet lines, which makes the astronomers happy, but they are both cheaper and brighter than the high-pressure variety. Indeed, in the past there has been a felicitous union of interests. Sites such as Tucson and Phoenix (near Kitt Peak National Observatory) and San Jose (near Lick Observatory) have willingly cooperated with their scientific neighbors by installing low-pressure sodium lights.

San Diego would now be getting ready to join them—in fact, the city council has voted to do so three times since last November—except for one hitch. The deep-yellow lights, alas, make things look funny. "Bug lights," snorted Councilman William Mitchell, who made it his cause to oppose them.

On 21 June, with his task made easier by massive turnover in the 9-member council, adverse reaction to a test program in his own district ("100 percent negative"), and some adroit parliamentary maneuvers of his own, Mitchell succeeded in getting a 4–3 vote against the low-pressure lights and for the high-pressure sodium lights.

However, Michael Gotch, the council's strongest supporter of low-pressure lights, is not ready to give up. "Mitchell's presentation [of the adverse public reaction] was orchestrated," he says. "I've had these lights in my district for years, and people are very satisfied."

Gotch hopes for a compromise, perhaps a buffer zone around Palomar. It is not a trivial matter for the city. "San Diego is being watched by a number of high-tech companies," he says. "They are waiting to see what kind of support we give to the academic and technical communities before they move here."

—M. MITCHELL WALDROP