critical part played by the American scientific community" in backing the LHC. Maiani, along with Gibbons and Peña, heaped praise on Sidney Drell, deputy director of SLAC, for his work in leading DOE's High Energy Physics Advisory Panel to shift its allegiance to the LHC after the SSC debacle. The agreement, Maiani noted, "represents how scientific progress is made through international efforts."

"It sets an excellent precedent," observed Christopher Llewellyn Smith, CERN's director general. Not only is the cost of such projects "increasingly beyond the means of most countries," he said, but the geographical location of such facilities is "increasingly irrelevant. . . . Science knows no national borders or continental boundaries. Knowledge belongs to nobody and to everybody. Given this universality of science, it is only natural that we should enter this collaboration."

In fact, said Llewellyn Smith, "it's conceivable that the LHC could be run from a control room at Fermilab or Brookhaven." Given that the accelerator will still be operating well into the 21st century, he figured, "it's possible that the last graduate student who will take part in experiments on ATLAS or CMS has not yet been born."

At a press conference after the signing, Llewellyn Smith was self-assured in responding to questions on the cost and schedule of LHC construction. "We have a lot of experience in building such facilities," he said. "It's going to come in on time and on cost, and it's going to work." If it doesn't, he declared, with a hint of exasperation, "we will go back to our countries. That is not [the US] responsibility." Peña added: "From the US perspective, our contribution is capped."

"For about 10% of the entire cost," Peña told news reporters, "our contribution will enable about 25% of the US high-energy experimental physics community to take advantage" of the LHC's resources. For its part, CERN, said Llewellyn Smith, not only will get extensive access to American technical expertise, but enough of a financial commitment to "allow for much better experiments than would otherwise be possible" and to complete the machine three years earlier than would have been possible without the funds.

Asked about lessons learned from this experience, Peña answered that "the next time we do this, we'll be sure that we make contact with political leaders in Congress and that the project makes sense for US taxpayers." For Llewellyn Smith, whose five-year term as CERN's chief ends at the end of 1998, "it's been a crash course in the American political system. At times, it has seemed more complex than particle physics." **IRWIN GOODWIN**

DOE Chooses SUNY at Stony Brook and Battelle to Operate Troubled Brookhaven Laboratory

Six months into the management crisis at Brookhaven National Laboratory, the Department of Energy (DOE) selected a new contractor to operate the besieged facility. The choice went to a partnership of the State University of New York (SUNY) at Stony Brook and Battelle Memorial Institute, which takes oversight control of the lab in January. The new team, called Brookhaven Science Associates (BSA), takes over from Associated Universities Inc (AUI), which had functioned like a board of trustees since the lab's founding in 1947. AUI's contract was terminated by Energy Secretary Federico Peña last May following startling revelations of a long-standing tritium leak at the High Flux Beam Reactor (HFBR) and accusations that AUI didn't maintain proper vigil on environmental safety at the lab (PHYSICS TODAY, June 1997, page 65).

In the subsequent competition for the Brookhaven contract, Stony Brook and Battelle beat out another group led by IIT Research Institute of Chicago and Westinghouse. Another group, headed by Renssalaer Polytechnic Institute in upstate New York, had shown some interest in becoming a rival, but didn't enter the contest.

DOE's decision combines one of Long Island's most highly regarded educational institutions with one of the area's most troubled organizations. Stony Brook's close cultural and scientific relationship with the laboratory has helped raise its reputation as a research university in recent years.

NEW DIRECTOR OF BROOKHAVEN: John Marburger

The other half of the team, Battelle, a nonprofit foundation in Columbus, Ohio, has close ties with DOE. It manages the department's Pacific Northwest National Laboratory in Richland, Washington, adjacent to the polluted Hanford site, where radioactive wastes from nuclear weapons production are stored. Battelle also runs environmental and safety activities at DOE's Pantex nuclear weapons plant, located near Amarillo, Texas.

"I will look to [BSA] to fully integrate safety and environmental protection into scientific research, to accelerate and intensify recent efforts to rebuild community trust and to achieve overall excellence," said Energy Secretary Federico Peña in making the announcement on 25 November. Incorporated into BSA are six universities: Columbia, Cornell, Harvard, Princeton, Stony Brook and Yale.

Reflecting the added cost of cleaning up Brookhaven and making sure it is environmentally sound, the new five-year contract provides a higher annual fixed fee—$1 million more than the $4.2 million that DOE paid to AUI last year. "We expect to get more for our money" from the new contractor, says Martha A. Krebs, director of DOE's Office of Energy Research.

Also on 25 November, BSA, with DOE's approval, named the laboratory's new director: John Marburger, who was president of Stony Brook for 14 years and continues to be highly regarded in the Long Island surrounds. Marburger promises to make major changes to clean up environmental problems and to ease the concerns of the local population. "Job one is to establish contact with the community," he said at a press conference when Peña announced the award of the BSA contract. Marburger is a physicist who once headed another DOE contractor,

Universities Research Association Inc, a consortium of 60 universities that operates Fermilab. He also pledged to make "major reassignments" within the 3200-member staff to ensure that Brookhaven abides by environmental regulations while continuing to produce exemplary science.

Among the most important issues confronting DOE, BSA and Marburger is the fate of HFBR, which has been closed since late 1996. The decision on reopening the reactor, where the leaking fuel rod holding pool led to the search for a new contractor (see PHYSICS TODAY, May 1997, page 45), will be put off until at least February 1999. That is about the time when Brookhaven's newest facility, the Relativistic Heavy Ion Collider, should come on line.

HFBR began operating in 1965, first at 40 MW and was then upgraded to 60 MW. It was later authorized to run at no higher than 30 MW. Many scientists are now eager for it to be restarted as soon as possible and to attain 60 MW rapidly to produce intense beams of neutrons for today's experiments in nuclear and solid-state physics, materials science, biology and chemistry. But two New York politicians, Senator Alfonse D'Amato and Representative Michael Forbes, contend that the aging reactor is an environmental and health hazard that should be shut down permanently.

Secretary Peña says he will not make a decision about HFBR until he has the results of an environmental impact statement procedure that is scheduled to be completed late this year. He met with BSA members on 10 December, and they endorsed his intention to allow additional time for public comments on HFBR from Long Islanders. Peña's timetable also will allow him to hold off until after the election in November, when D'Amato and Forbes go to the voters with their complaints about HFBR and Brookhaven.

Considering all the problems he faces, Marburger told reporters at his first press conference as Brookhaven's director-in-waiting that he was prepared for some rough times. "I don't have any illusions," he said. "The next year will be difficult." **IRWIN GOODWIN**

In Literally the Last Act for Fiscal 1998, Congress Increases R&D Funds for NIST and NOAA

After a sputtering of six continuing resolutions made necessary by fitful arguments over whether to allow the Census Bureau to use sampling techniques in the year 2000, Congress passed the last of the 13 appropriations bills for fiscal 1998. The vote came late on the night of 13 November and both houses then recessed for the year. The legislation covered funding for the Departments of Commerce, Justice and State, including the Census Bureau and two major R&D agencies—the National Institute of Standards and Technology (NIST) and the National Oceanographic and Atmospheric Administration (NOAA). NIST and NOAA emerged from the funding whirligig better than had been expected, considering that many Republicans had placed the Commerce Department on their hit list to abolish when they took control of the House in January 1995.

The bill provided a total of $677.9 million for NIST, which represented a boost of 17% over fiscal 1997. Much of the increase is the result of a $95 million appropriation to renovate NIST's R&D facilities in Colorado and Maryland. The agency had requested funds for the past few years to upgrade aging facilities and to build a new advanced measurements lab, but Congress had been reluctant to commit any money without detailed plans and even rescinded unspent funds from appropriations made in previous years. In the fiscal 1998 budget cycle, Congress changed its mind and funded much more than the Clinton Administration's request of $17 million; even so, actually spending the other $78 million is contingent on NIST submitting a building plan that is acceptable to Congress.

Additional Bottom Lines: Physics-Related R&D Budgets for Fiscal 1998

	FY 97 actual	FY 98 request	FY 98 enacted	Percentage gain (loss) 1997–1998
	(millions of dollars)			
National Institute of Standards and Technology	581.0	692.5	677.9	16.7
Scientific and technical research and services	268.0	276.9	271.9	1.5
Advanced Technology Program	224.9	275.6	192.5	(14.4)
Manufacturing Extension Partnership Program	95.0	123.4	113.5	19.5
Construction of facilities	0.0	16.7	95.0	—
National Oceanographic and Atmospheric Administration	1910.8	1989.6	2002.1	4.8
Oceanic and atmospheric research	253.2	248.1	277.7	9.7
Climate and air quality, including global change	109.9	118.8	114.8	4.5
Atmospheric program, including solar research	43.5	43.5	47.5	9.2
Sea Grant Program	54.3	50.2	56.0	3.1
Undersea Research Program	12.0	5.4	15.5	29.2

Among the agency's programs, the Manufacturing Extension Partnership fared best, with a 19.5% increase. NIST's traditional scientific, measurement and research services got a 3.3% rise—on paper at least. In fact, though, the core laboratory program got no increase because of the venerable practice of earmarking. For instance, the House–Senate conference agreement directed NIST to spend $3.8 million for wind engineering research conducted at Texas Tech University and $5 million for a cooperative agreement with Montana State University for research on building technologies that apply natural resources and environmentally sound procedures. After signing the appropriations bill on 26 November, President Clinton used his line-item veto to strike the Montana State allocation. By doing this, Clinton reduced the core research line from $276.9 million to $271.9 million—leaving a paltry 1.5% increase this year.

Funding for the controversial Advanced Technology Program, which has been labeled "corporate welfare" by some in Congress, is down 14.4%, to $192.5 million. The Administration sought to increase ATP funding by 22%, to $275.5 million. While most of this year's appropriation is designated for continued support of awards made in prior years, $82 million is for new awards. NIST officials hailed two Maryland politicians, Senator Barbara Mikulski, a Democrat, and Representative Connie Morella, a Republican, for pushing for the new awards.

Within the same bill, NOAA is given a total of $2 billion, an increase of 4.8% over last year. All of the agency's programs went up. The biggest winner is the Undersea Research Program, which got a 29.2% hike. The Sea Grant program fared least well, with an increase of 3.1%, a tad more than the rate of inflation. **IRWIN GOODWIN**