looked at to go. But thanks to [former Congressman] Bob Walker's tenaciousness, science was retained, and for the last six years it has gone along and done nicely. So there is no longer any talk or any thought that the science committee should be abolished.

What I'm determined to do is not only assure people that they've made the right decision to continue it, but I want people to look to the science committee as one of the leading forces working in concert with the educational workforce, for example, on K–12 science education. I want the White House, when they're talking about education, to think in terms of the science committee, not just the education committee. On energy and environmental policy, I think we have a large role to play, and I'm determined that our committee will do so. We haven't been thought of much in these areas. We will be.

PT *What's the committee's role in developing an energy policy?*

BOEHLERT I think it's sinful that this nation doesn't have a coherent energy policy, and we're determined to contribute to that policy. But we're not going to deal with drilling in Alaska or things like that. We're going to deal with renewables, conservation, and energy efficiency. We're going to send a signal to one and all that we intend to be players.

PT *What role do you think nuclear power should play in a national energy policy?*

BOEHLERT I think, in many respects, [energy policy is] like a blank sheet of paper in which we've got to do something. We've got to determine what we're going to put on that sheet of paper, and I have not been unalterably opposed to nuclear energy. We're not going to rush pell-mell into it, but we're not going to summarily dismiss it.

PT *Physics is becoming increasingly dependent on big expensive machines that are operated cooperatively by several countries. What is your view of the increasingly international nature of physics?*

BOEHLERT Science is becoming increasingly international and that's what I argued when I supported the LHC and was opposed to the SSC. The LHC is a pretty good model. We're contributing substantially to the LHC, it's working, and it's truly international. The old idea of international was the United States paid for it and everybody else used it. But these big science projects are very costly and it's in the best interest of all concerned to truly internationalize them.

PT *The national labs, particularly the weapons labs, have had a rough time in Congress during the past couple of years on a host of issues, including security and management practices. How do your colleagues view the labs?*

BOEHLERT Most members don't even think in terms of the national labs unless they have a national lab in their district, or have a special interest for some reason, or they happen to be on the Intelligence Committee and have some inside information about some of the activities involving Wen Ho Lee and others. I think the national labs have a very important role to play for the nation. What that role is going to be, and how we define it, is not really clear to me yet. **JIM DAWSON**

Position Paper Ponders Planning for US High-Energy Physics

A new HEPAP White Paper urges adequate utilization of existing facilities and timely planning for new ones.

Until the Large Hadron Collider (LHC) at CERN, near Geneva, is completed in about 2006, the Tevatron at Fermilab, near Chicago, will be the highest-energy accelerator available to particle physicists. But what then? The High-Energy Physics Advisory Panel has recently published a "White Paper" on planning for particle physics in the US. HEPAP, currently chaired by Fred Gilman of Carnegie Mellon University, serves as an advisory body to both the Department of Energy (DOE) and NSF.

Updating the 1998 report of a HEPAP planning subpanel, the new White Paper (http://hepserve.fnal.gov:8080/doe-hep/home.html) offers a current assessment, in a worldwide context, of where things stand now and what needs to be done in the next few years. The document is intended to serve as input for this summer's Snowmass workshop (http://www.snowmass2001.org) on the future of high-energy physics, and for the 20-year plan that's being prepared by a new DOE/NSF panel headed by Barry Barish (Caltech) and Jonathan Bagger (Johns Hopkins University). The report of that long-range planning panel is expected next fall.

THE NEW MAIN INJECTOR (foreground ring) at Fermilab should increase the luminosity of the Tevatron collider (background ring) by an order of magnitude for the run that's just beginning.

Since the appearance of the 1998 subpanel report, there have been several important accomplishments: PEPII, the asymmetric B-factory at SLAC began running in 1999 and, by last fall, was already operating at its design luminosity. The Tevatron collider is just now getting under way again with greatly enhanced luminosity, after several years of shutdown to install its new "main injector" (see the photo) and a variety of other upgrades. At Cornell, the major upgrade of the CESR e^+e^- collider has also been completed. All these accomplishments, we are reminded, "were finished on schedule and on budget."

Adequate utilization

Although the White Paper cites good reasons to believe that these facilities "are guaranteed to produce frontier physics results," it expresses concern about funding for their use: "The shortfall of funds for operating the recently completed facilities will severely hamper their utilization." The White Paper regards adequate funding for their operation, and for the research groups striving to extract the physics, as "the highest priority need."

With regard to other large accelerators that will be needed, the White

Paper calls R&D "the lifeblood of our science." Arguing that current funding levels "are endangering the near- and far-term future of the field," it urges that R&D toward new accelerators "should be increased substantially."

The three leading options for accelerators with energies beyond the LHC and the LEP e^+e^- storage ring it is displacing are: an e^+e^- linear collider, a very large hadron collider (VLHC), and a muon collider. (See Maury Tigner's article in PHYSICS TODAY, January 2001, page 36.) Strong recent evidence for neutrino oscillation has focused attention on the notion that a useful first step toward a muon collider would be an intense neutrino source based on a muon storage ring.

The timeline for decisions by the international high-energy community will stretch over decades. "We expect that only one of each type of frontier facility will be built worldwide," says the White Paper, "and that they will be built in different regions."

'The most pressing issue'

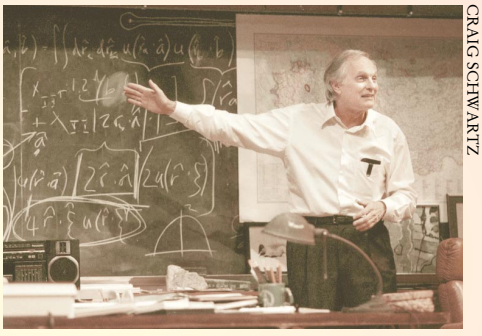
The e^+e^- linear collider concept is the most well developed, and the physics case for its construction is strong. Design work on various schemes for a collider in the 500-GeV regime is going on in the US, Europe, and Japan, and each of these regions is a potential host. The Germans, for example, are pushing for the superconducting design being developed at DESY in Hamburg. A decision is expected in two or three years. "The fundamental question is whether [the e^+e^-] machine is the desired candidate . . . that will restore the US to the energy frontier," says the White Paper. "Making this decision is thus the most pressing issue before our community."

A decision on the muon collider/neutrino source would come toward the end of the decade. Deciding about a VLHC will take longer. It will depend on what is discovered at the LHC. The feasibility of such a gargantuan machine, much bigger than the LHC, will also depend on R&D aimed at reducing the costs of both civil engineering and superconducting magnets. The White Paper foresees a decision early in the next decade.

At least one of these frontier accelerators should be built in the US, the White Paper argues. "The study of the fundamental issues bearing on the nature of matter . . . and the forces shaping the universe befits this nation. . . . Maintaining US leadership and training new generations [of high-energy physicists] demand an energy-frontier facility at home."

BERTRAM SCHWARZSCHILD

Alda Plays Feynman in *'QED'*


CRAIG SCHWARTZ

The scene is Richard Feynman's office at Caltech on a Saturday in 1986. Phone calls, office visits, and reminiscences weave a brisk, colorful tapestry of Feynman's life and personality—from the atomic bomb to quarks to picking locks to investigating the Challenger explosion, from playing bongo drums to sketching nudes to Tuva, and from his personal life to the analytical way in which he approached his own cancer.

In *"QED,"* Alan Alda plays Feynman. His portrayal "is uncanny—he's definitely got the spirit," says Tom Rutishauser, who used to drum with Feynman and is coaching Alda. In fact, it was Alda's fascination with Feynman that got things started, says playwright Peter Parnell. The play was inspired by Feynman's writings and Ralph Leighton's book *Tuva or Bust!*

"QED" premiered at the Mark Taper Forum in Los Angeles on 23 March, and is scheduled to run through 13 May. For more information, see http://www.Taper-Ahmanson.com.

TONI FEDER

Science Community Lobbies for Balance in Bush Budget

You can't increase one piece of science in America in research and leave other kinds of research in the doldrums," Senator Pete Domenici (R-NM), chairman of the Senate Budget Committee, said at a hearing on 6 March, about a week after President Bush released his budget blueprint for fiscal year 2002. With the exceptions of medical and military research, the picture the "blueprint for new beginnings" paints for the sciences isn't pretty. The uneven spread has members of Congress circulating letters and the science community lobbying hard for balanced funding increases across the sciences.

The blueprint, which was released on 28 February, would give the National Institutes of Health $23.1 billion for FY 2002, a 13% increase, on track for doubling its budget in five years, by 2003. And the Department of Defense would get $310.5 billion, a 4.8% increase, with $20 billion over five years for R&D, much of that for a national missile defense program.

Other funding agencies, however, would see flat or even falling budgets. The Department of Energy would get $19 billion—$700 million or 3% less than in FY 2001. And the blueprint specifies roughly $600 million in new spending, including a 5% increase for stockpile stewardship, for overseeing the country's nuclear weapons. That would mean cutting $1.3 billion from other existing DOE programs. "The administration hopes to protect the Office of Science at the expense of energy conservation and renewables, but Congress may not go along," says Mike Lubell, head of public affairs at the American Physical Society. "The ugly specter of lab closures could arise once again."

NSF and NASA would get tiny increases of 1.3% to $4.5 billion and 2% to $14.5 billion, respectively. Bush's blueprint proposes expanding NSF's math and science education programs, which, while welcomed by the agency, would nevertheless strain funding for other activities. Several NASA programs would be canceled, including the Solar Probe and an already threatened mission to Pluto that scientists had hoped to revive, and funds would be redirected to propulsion technology, the Mars program, and Earth sciences programs. The blueprint also calls for assessing, by 1 September, the possibility of moving ground-based astronomy from NSF's auspices to NASA's.

No science, no surplus

The budget back-and-forth is off to a late start this year, what with a new administration and delays caused by the election mess in Florida last fall, and it's too early to tell how funding will shake out for FY 2002, which starts on 1 October. A lot depends on what happens with Bush's proposed $1.6 trillion tax cut. The detailed