stock. "I don't see it as an overwhelming problem," he says, "but it may become one if companies withhold their products because they don't have a chimpanzee protection trial." Schultz argues that results from a chimpanzee protection trial will be just one of the factors federal health officials will consider when choosing which candidate vaccines to use in human efficacy trials. NIAID does not insist that companies interested in participating in future human trials conduct chimp challenge experiments, but Schultz admits that since such trials have traditionally been required in vaccine development, companies may feel easier about liability issues if they have done them.

Schultz says it is not clear at this point whether NIAID will be forced to delay the human efficacy trials it was hoping would kick off by the end of next year. Laboratory results, trials in other animal models, and experience from phase I trials already under way in humans will all go into deciding when to start efficacy trials, and which vaccine to use. For now, Schultz says, the idea is to prepare for all eventualities: "We want to have the [vaccine] syringe ready to go, and then see if we're going to fill it." Certainly the delay in creating the MN challenge stock is not going to make that decision any easier.

**–Joseph Palca**

PHYSICS FACILITIES

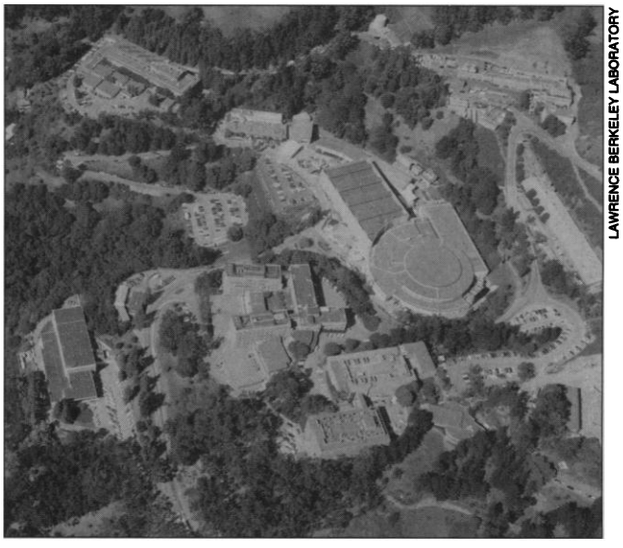
# NASA Researchers Protest DOE Turnoff

The Bush Administration has long championed an ambitious manned space program, including such projects as a lunar base and a manned mission to Mars by 2029. But researchers at the National Aeronautics and Space Administration (NASA) are now complaining that the Administration appears to be undercutting its commitment to multibillion dollar long-term space voyages—and some less splashy space research as well—in order to save a few million dollars in an apparently unrelated area: the nuclear physics program at the Department of Energy (DOE).

For more than 20 years, NASA researchers have conducted a series of important experiments on the Bevalac, an aging heavy ion accelerator that DOE supports at the Lawrence Berkeley Laboratory (LBL). Concerned by predictions of flat or declining research budgets over the next 5 years, however, DOE announced earlier this year that it will close the Bevalac by mid-1993. The move has prompted strong opposition from NASA scientists and officials, who warn that many agency programs, including one that calibrates the instruments for space probes, may grind to a halt without the Bevalac. Negotiations between NASA and DOE have so far failed to produce a plan either for keeping the Bevalac open or building a replacement, suggesting that without congressional intervention, U.S. scientists soon may have to do without the Bevalac's capabilities altogether.

While about three-quarters of the accelerator's operating time is devoted to basic nuclear physics research and cancer radiotherapy, NASA has a special interest in the facility because it is the only accelerator in the country able to simulate the galactic cosmic radiation background with energetic beams of heavy ions such as iron and uranium. Using the Bevalac, NASA life scientists have begun to explore the biological effects of heavy ion cosmic radiation, work of particular importance to planners of long-term manned space missions. "Our whole radiation program is dependent on high-energy ion beams at the Bevalac," says Walter Schimmerling, senior scientist for NASA's space radiation health program. "There's just no way to do our program without a U.S. capability in this area."

More than NASA's life science program is threatened by a Bevalac shutdown. Since the late 1960s, NASA has used the facility to calibrate the particle detectors aboard probes flown in space and aboard high-altitude balloons. "It's safe to say that every satellite program has been calibrated here," says Jose Alonzo, a deputy director at LBL with responsibility for Bevalac operations. "We are the only cosmic ray factory on this side of the Atlantic." Vernon Jones, NASA's chief scientist for cosmic and heliospheric physics, notes that while some facilities in Japan, Europe, and Russia might be able to carry on some of the same work now done at the Bevalac, all would require some upgrading—and all are currently oversubscribed. "[The Bevalac] is the only facility in existence that can provide the beams we now need," he says.



LAWRENCE BERKELEY LABORATORY

**Under the shadow of the ax.** Berkeley's Bevalac.

DOE has long had the Bevalac on the chopping block, but it only recently moved up the facility's execution to 1993. Last summer, DOE's Nuclear Science Advisory Committee recommended closing the accelerator by 1995 in order to keep a newer facility—the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory—on schedule for a 1997 completion. According to Schimmerling, that original timetable might have allowed NASA time to figure out some way to come up with at least a portion of the Bevalac's $18 million annual operating budget. Just last fall, however, another advisory panel on research priorities recommended shutting the facility in mid-1993, and DOE agreed. Negotiations have been under way since then, but no one seems optimistic about their progress. One reason for pessimism is a 5 May letter from DOE nuclear physics program director David Hendrie to a NASA official effectively stating that the Bevalac will be closed to outside users beginning this October.

As a result, Congress appears to be the researchers' only hope to keep the facility going in the short term. The House recently passed a bill authorizing NASA to spend $3 million on Bevalac operations in the next fiscal year, essentially as a stopgap aimed at keeping the program going until DOE can fully fund the facility. But the real decision for this year rests with the congressional appropriations committees, which are under the same fiscal pressures DOE now faces. "There are a lot of things the committee would like to do, but the availability of money is a real problem," says one House appropriations staffer.

As a long-term solution, researchers have begun planning an extension to an existing Brookhaven accelerator that will allow them to tap an ion beam equivalent to that of the Bevalac by late 1995 or early 1996. But DOE has given no indication that it would be willing to pay the estimated $30 million such a facility would cost. In the meantime, "We're sitting on the sidelines wringing our hands, waiting for the giants in Washington to settle our fate," says Alonzo.

**–David P. Hamilton**