

# Lab Officials Squabble Over X-ray laser

*Edward Teller lobbies for \$100 million in new research funds, but others say it isn't warranted*

Although he retains only the title of a "senior research fellow" at Lawrence Livermore National Laboratory, Edward Teller remains a powerful figure in the weapons community. When he comes to Washington, roughly a dozen times a year, he often meets with staff or members of the armed services committees and stops off at the White House, where he might have a brief conversation with President Reagan or one of his aides.

At such a meeting last spring, Teller, 77, apparently persuaded the President that the x-ray laser program at Livermore needed a substantial infusion of cash: \$100 million to be exact, a doubling of the existing effort. The purpose was largely to conduct more and more complicated bomb-pumped x-ray tests in Nevada, which can cost up to \$50 million apiece; the rationale was largely that researchers in the Soviet Union had stepped up their own program.

In conversations with Pentagon officials, Teller said that the President had "promised" him the extra funds for his favorite nuclear weapons program, and no one doubted him. As one official says, "Do you really want to challenge someone who says he's talked to the President? Do you really want to risk your status by asking Reagan if that's what he really said?"

As a result, although there has been no formal proposal to Congress as yet, the Pentagon and the Defense Department recently agreed to reprogram \$100 million, extracting the funds from other "Star Wars" research and putting most of them into the nuclear directed-energy program. This decision, among several others in which Teller's influence was strongly felt, is said by several scientists to have contributed to the decision of Roy Woodruff, Livermore's associate director for defense systems, to resign on 31 October.

Woodruff, 45, had been at the laboratory since 1968, working on thermonuclear design and directing the physics experiments conducted at the Nevada test site. Since February 1984, he had been responsible for all research, development, and testing, as well as systems analysis, weapons engineering, and arms control. The picture that emerges from conversations with his colleagues is of a hard-driving, well-liked official who be-

came intensely frustrated by his relative lack of control over a costly, high-profile scientific investigation.

In part, "Roy just basically felt that it was not worth the grief" of continually battling with Teller and his protégé, Lowell Wood, who helps direct the x-ray laser effort, says a close friend. "He quit on principle, and not too many do that." Woodruff welcomed the infusion of new funds from Washington, the friend explains, but he questioned the wisdom of expending it all on one slice of the laboratory's "Star Wars" research. "It was a question of balance and effectiveness. Our total weapons R&D budget is only \$300 million." The reallocation of money was not the only thing at issue, he adds. "It was a combination of several fac-

---

**"Roy and I both agreed that the pace of the program should be sharply picked up," Wood says.**

---

tors," some involving the research priorities of the overall "Star Wars" program.

Teller declines any comment and Woodruff scrupulously declines to confirm or deny these reports. "For reasons that I am unable to go into at this time, I cannot comment," he told *Science*. He refers reporters to a statement issued on 1 November by Roger Batzel, the laboratory's director, which states that Woodruff plans to return to research and that there was no connection between the resignation and an article in *Science* (8 November, p. 646) on the x-ray laser program that appeared the same day. "The Laboratory is pleased with the status and rate of development of the x-ray laser technology," Batzel said. "Mr. Woodruff's contributions to the x-ray laser program and to nuclear weapons research and development have been enormous."

Wood denies that he and Teller disagreed with Woodruff about the program's direction, as others at the lab have said. "Obviously we did not have the same point of view on every dot and piddle, but on all the basic issues of the program our views were essentially iden-

tical," Wood told *Science*. "Roy and I both agreed that the pace of the program should be sharply picked up." Anyone who prints contrary information "is being misinformed and used," he adds.

But friends of Woodruff say that he has repeatedly complained about the laboratory management's reluctance to exercise control over Wood and Teller. And on occasion, he has declined to meet with reporters who interviewed Wood, reportedly out of concern that laboratory disagreements would then find their way into print.

Concern about Teller and Wood's glowing descriptions of their program, as well as their depiction of the Soviet threat, has also been voiced by others. An official with the Strategic Defense Initiative office in Washington characterizes Teller's claims about Soviet research, for example, as "5 percent information and 95 percent conjecture," but says the implications are disturbing anyway and that "there is now broad agreement that more effort seems warranted." Officials from Los Alamos disagreed with Teller about the magnitude of the budget increase, and successfully lobbied for authority to divide \$40 million of the \$100 million total between themselves and Sandia, for research on other directed-energy programs.

Several Livermore scientists suggest that Wood and Teller's extreme optimism about the x-ray laser program has embarrassed the lab. But there is still widespread admiration for Teller's technical and political ingenuity, as well as Wood's ability to invest other scientists in the x-ray laser group with considerable enthusiasm.

One mystery is what role, if any, Presidential science adviser George Keyworth has played in the x-ray laser dispute. Bruce Abell, Keyworth's press aide, declines to say whether Keyworth has been present during Teller's scientific discussions with the President. "If I were to claim that [Teller] and I had a special relationship, that would be only half true," Keyworth told an audience of Livermore scientists in January 1983. "It is special for me. But Edward has acted as mentor and colleague for so many of us that he may not even recognize the unique quality that characterizes so many of his interactions with other scientists." —R. JEFFREY SMITH