"provide an environment where you can solve large and complex problems...where science makes a difference."

The labs do seem unrivalled in the depth and variety of skills they have on tap. An earth scientist at Livermore boasts that if you need an expert in isotope chemistry, or fluid dynamics, or bacteria, or lasers: "You can just get them off the shelf here," while at a university—even if you could locate such people—you might have trouble getting them to cooperate.

All three labs are offering themselves as centers where researchers from government, university, and industry can collaborate on new technology. Sandia's chief, Al Narath, an AT&T executive on loan, cites the lab's pragmatic outlook as an asset that will stand it well in the coming hard times. "Sandia is well positioned because of our industrial background" to move rapidly into partnerships with commercial firms, he says. The lab, in fact, recently established a consortium with 11 industrial partners to work on specialty metals processing.

Livermore, for its part, has had a major energy research program since the 1960s, now funded at more than $250 million, equal to the amount spent on nuclear weapons. It originated in the ill-fated "Project Plowshare," an attempt to apply nuclear explosives to the business of prospecting for oil and gas. Plowshare failed to catch on for predictable reasons. But Livermore moved into studies of recovery of oil from shale, solar power, and fusion—the last of these inspired in part by the desire to obtain data on thermonuclear events without setting off bombs. Livermore also has developed an entire $100-million laser isotope separation plant, a scale model that could become the worlds' most efficient commercial uranium refinery—if only the market could support it.

While the labs have shown that they can come up with stunning new technologies, they still haven't established that they are suited to serve as industry's brain bank. They have had some partnerships with industry, but even the successful ones have not yielded a distinct commercial advantage for the United States. It will take a few years before it will be possible to judge whether this experiment is working.

Reconfiguration politics

DOE chiefs, meanwhile, are already trying to decide which weapons test facilities to cut, and when. Livermore official William Shuler spoke recently about a potential DOE reconfiguration plan that would focus all the controversial weapons work—tritium and plutonium handling, as well as high explosives facilities—at Los Alamos. Livermore's own Representative in Congress, Pete Stark (D–CA), wants to go even further: He has suggested ending nuclear weapons R&D at Livermore entirely. A bill he introduced would create a commission to study consolidating its work at another lab.

Consolidation is only an option at this point, but pressure to relocate work with radioactive materials out of California is growing. University of California faculty groups continue to urge UC to cut its ties to Livermore each time the contract comes up for renewal. However, UC vice president for academic affairs William Frazer says that won't happen.

With so many question marks hanging over the labs, the special committee appointed by Admiral Watkins in November 1990 has a tough task—and a unique opportunity to put its stamp on the future of this huge R&D structure. This eight-member advisory panel, chaired by Edward Frieman, director of the Scripps Institute of Oceanography, was supposed to report back by now. But it is running late, despite the admiral's warning at a public meeting in July that "I can't wait much longer" to restructure the labs. Watkins was worried that Congress would cut the Pentagon's budget for strategic defense, and this in turn would eliminate hundreds of scientific jobs at the labs. "I can't lose those intellectual resources," he said.

This coming transition from the hidden world of weapons building to the open competition of the marketplace will clearly be a wrenching one. At Los Alamos, some of the old-timers fondly recall the early days when they could pursue their weapons research without the need to justify what they were doing or to compete for scarce funds. For some of them, it would be a relief if only they could raise the old gate across route 502 again. But that won't happen; there's no turning back now. ■ ELIOT MARSHALL

Now Dingell Probes the Academy!

Could the world renowned U.S. National Academy of Sciences (NAS) be sucked into the wake of Stanford University's yacht? Following their highly publicized investigation of Stanford's indirect cost rate, which led to the resignation of Stanford president Donald Kennedy, the staff gumshoes of powerful House subcommittee chairman John Dingell (D–MI) have focused their magnifying glasses on the books of none other than the august NAS.

Insiders at the academy don't seem especially worried—since NAS president Frank Press had already launched an internal audit last spring. And indeed, at least one subcommittee investigator, who asked that his name not be used, has told *Science* not to expect inside-the-Beltway equivalents of the Stanford yacht, flowers, and cedar closets, all charged off as overhead costs of research, that brought down Stanford's Kennedy. "I doubt that the national academy will be another Stanford," he said.

But that doesn't mean there won't be any embarrassing revelations. NAS spokesperson Stephen Push says that at a 6 November meeting between NAS accountants and subcommittee staffers, academy officials conceded accounting errors had been made and said they had agreed to pay back some money to the government. "The nature of the accounting errors were things such as a wrong account number put on vouchers or a lack of documentation," explains Push. Asked for examples, Push added that it would be inappropriate to discuss the errors in more detail until NAS completes the internal audit Press ordered, something the academy hopes to do before Dingell's next subcommittee hearing on indirect costs, scheduled for 12 December. But *Science* has learned that among the items questioned to date were entertainment billings, charges for the academy's study center at Woods Hole on Cape Cod, and an NAS condo at D.C.'s famed Watergate Hotel. Without addressing any of these specifically, academy insiders acknowledge that the NAS has already agreed to pay some money back to the government.

Meanwhile, Dingell staffers seem more impressed with the scope of academy federal funding and its charge-backs to the government than with specific errors they have uncovered so far. "I had no idea, nor did anyone else around here," said the Dingell staffer, that the NAS was "getting $150 million a year from the federal government with an overhead rate of 71%." By comparison, Stanford's pre-Dingell rate was 78%—a rate that dropped to 55% in the post-Dingell era. But NAS officials contend that because universities use different accounting procedures, the academy's comparable overhead rate should be viewed as only 47%. And where does the $150 million in federal funding come from? The National Science Foundation, NASA, the Post Office—and almost every other imaginable federal department. Indeed, government agencies now account for three-fourths of the funding NAS receives. ■ JON COHEN

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