and "has accused the scientific community of engaging in fraud, and has admitted doing so himself." The motion prompted a flurry of media reports, and 2 days later, the *Los Angeles Times* reported that Mullis pled guilty in 1990 to domestic violence charges. Court documents show that the charges, which were filed by a girlfriend, were dismissed after Mullis agreed to see a therapist and attend Alcoholics Anonymous meetings.

At a 30 March hearing about the motion, Simpson attorney William C. Thompson, a professor of criminology at the University of California, Irvine, who specializes in DNA forensics, upbraided the prosecution for dragging Mullis's reputation through the mud. "This motion, with its disparaging comments about Mullis, is particularly disturbing to us, because we view it as part of a continuing course of conduct by Mr. Harmon designed to intimidate scientists," said Thompson. In spite of such complaints, Thompson himself wasn't above using similar language in describing Harmon to *Science* as "the snarling dog that protects the junkyard of forensic science."

But those who know Mullis don't think he's intimidated. In fact, they say, they think he would relish a confrontation with the prosecution in open court. "As a witness, he's going to love it," predicts Donald Thommen, a California defense attorney who hired Mullis last year in the double-murder case. "He'll really play it up if he gets on national TV. He's got a big ego. The jury's going to love it, too."

Indeed, although Mullis steered clear of discussing the specifics of the trial with *Science*, he minced no words about Harmon. "He thinks he knows something 'cause he's read some pamphlets about DNA or something," claimed Mullis. If Harmon delves into personal issues, vows Mullis, he'll bite back. "If they want to make it an issue, I'll be really feisty with them," said Mullis. "I certainly won't lie down and die for them. Harmon will have met his match." Harmon, who is well-known for his combative cross-examinations (*Science*, 7 August 1992, p. 733), assured in his motion that the confrontation would be "a lively event!"

And so it goes, as the "Trial of the Century" lurches into the realms of science—and character—with no end in sight.

–Jon Cohen

SCIENTIFIC EVALUATION

China Tightens Appraisal System

BEIJING—China has adopted a new system to evaluate scientific and technical achievements that is expected to reduce cronyism, improve the quality of the reviews, and give more weight to market forces in judging the commercial value of new technologies. The new procedures, enacted earlier this year by the State Science and Technology Commission (SSTC) and hailed by scientists, also give scientific journals, through their publication decisions, a larger role in determining what basic research is worthy of continued funding.

The key changes involve the operation of appraisal committees, which for decades have shaped the professional lives of Chinese scientists. Any work tied to a government plan—and in a socialist economy that has meant practically everything—had to be judged by a committee of half a dozen or so scientific experts, assembled by the relevant government body. Researchers could nominate their own reviewers, and it was not uncommon for prominent scientists to perform as many as 30 to 50 such appraisals a year. The reviews were intended to help the government decide what to fund, and the results also influenced salaries, promotions, and even housing allocations.

The system was also supposed to provide a seal of approval for technical achievements before they were put to use or offered to the public. Although China maintains a separate rate system for approval of new drugs and medical devices, a positive appraisal was something that companies could put into their advertising as additional proof of the quality of their product. In practice, however, it often produced exactly the opposite effect: Shoddy goods flooded the market accompanied by wildly inflated claims of efficacy, as appraisers were either too busy or too afraid of offending powerful colleagues to exercise proper scrutiny over the quality of the work.

In one case reported last year by the government-run *Science and Technology Daily*, a device to measure the sulfur dioxide content of industrial emissions, funded by the Chongqing Environmental Protection Bureau at a cost of $3.4 million, passed its expert appraisal but nevertheless failed to perform. The problem, according to the news account, was that an appraisal committee at the Nanjing Chemical Industry Research Institute used pure sulfur dioxide rather than actual boiler smoke to test the device. A report based on these meaningless results was sent to the environmental agency, and, despite the absence of signatures from any committee members, the device was approved.

Undue praise? Ads in Chinese publications tout the approval of appraisal committees.

China's market for health care products and medicines has been especially vulnerable to exaggerated, if not fraudulent, claims. Glowing appraisal reports have routinely been touted in advertisements in Chinese media for a wide range of bizarre concoctions and devices such as hair-growth preparations, health tonics, and herbal "health belts."

The new system is expected to reduce the number of appraisals, substituting "market competition and academic exchanges," explained Han Deqian, vice chair of the SSTC, at a Beijing press conference. He estimated that the number of appraisals conducted nationwide—33,000 last year—would drop by as much as 60%. Basic, theoretical, and social science research would no longer be required to undergo appraisals, he added, but appraisals will still be done in areas where, Han noted, "market mechanisms are not fully developed." For the rest, government agencies will accept the verdicts of journal editors as an objective measure of the quality of the research.

Officials at the SSTC say they hope that the changes, which also prohibit scientists from selecting their own appraisers and end mail reviews, will help end the endemic bribery and cronyism that plagued the old system. One prominent chemist at a Beijing research institute, who requested anonymity, says this widespread practice has become a major irritant for scientists. "It is very troubling when an old classmate or a close friend nominates you to appraise his research," he says. "You do not want to ruin a relationship by saying it is bad, but you cannot violate your integrity as a scientist by saying it is good when you know it really isn't." The only way out of this di-

lemma, he adds, is to file an appraisal that neither praises nor condemns the work.

Such ambiguous and anonymous appraisals were common under the old system. But the new rules make appraisers accountable for the verdicts they render. The consequences for knowingly giving a stamp of approval to substandard work will range from demotion to legal liability for resulting damages or losses.

Other changes in the procedures are expected to make the appraisals more rigorous. These include the requirement that scientists submitting research results for appraisal submit lab records. The SSTC says that a lighter workload should also allow appraisers to examine materials more critically and, thus, render more accurate judgments.

The change has been well received by scientists, who believe it was long overdue. "Most working scientists believe the whole appraisal system is nonsense," says one Shanghai-based physicist. "If you've got results, then you go ahead and commercialize them. If it sells in the marketplace, that means it's good work. If it doesn't, that means it isn't," he said.

–Ted Plakfer

Ted Plakfer is a free-lance writer in Beijing.

DEFENSE DEPARTMENT

Services Target Labs to Save Money

The Department of Energy's (DOE's) three big weapons labs have been in the spotlight in the past few years as they struggle to find a niche in the post–Cold War world. But an even bigger upheaval has been taking place largely out of the public eye in the complex of R&D centers run by the Department of Defense (DOD).

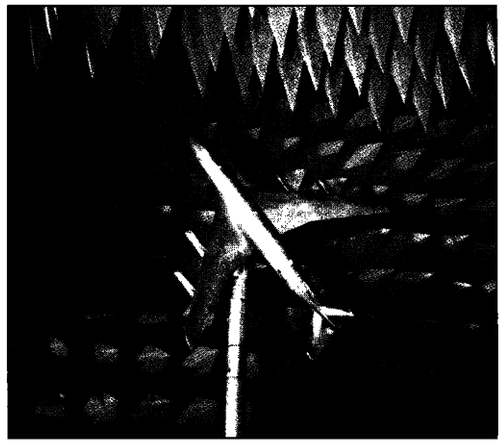
With more than 80 laboratories, DOD runs the government's largest R&D enterprise. But a shrinking defense budget will mean fewer military bases, and that, in turn, will result in the closure or consolidation of almost two dozen labs, say defense officials, who outlined their plans last week to the President's Committee of Advisers on Science and Technology (PCAST). Navy researchers will be hardest hit, facing the loss of about 3000 jobs in coming years.

The DOD laboratory shake-up is being orchestrated by the Base Closure and Realignment Commission, set up by Congress to make politically difficult choices about reducing the size of the military after the collapse of the Soviet Union. Its next round of formal recommendations—based largely on a recently completed DOD study—are scheduled to go to President Bill Clinton on 1 July. If Clinton accepts the commission's findings, the only way Congress can block them is to reject the entire package.

The defense labs, typically sited on military bases, perform mostly applied research and technology on weapons systems. The Army has 28 labs, the Air Force 23, and the Navy 30, in addition to five university labs (see p. 33). The Defense Department also operates 21 major range and test facilities and funds a dozen government-owned but privately operated labs. Under the base closure commission rules, DOD must begin closing bases within 2 years and complete the process within 6 years.

While DOD's plan may save money, some PCAST members are worried that the military's approach could lower the overall quality of the work force. "It's a recipe for disaster," says Shirley Malcom, director of education programs at the American Association for the Advancement of Science (which publishes *Science*). "You are going to lose your scientists but keep your bureaucrats," adds Dynamac Corp. Chair Diana MacArthur. DOD officials say they don't disagree, but they are stuck with a civil service system that favors workers with more tenure.

The heaviest blow is likely to fall on scientists and engineers working for the Navy, which has decided to close rather than consolidate lab work. Officials hope to save more than $2 billion in the next 2 decades. Under the current plan, the Naval Research Laboratory in Washington—the Navy's only formal, large-scale lab—would come through relatively unscathed, losing only the lab's underwater sound detachment in Orlando, Florida. But three parts of the Naval Air Warfare Center—in Indianapolis; Lakehurst, New Jersey; and Warminster, Pennsylvania—that conduct research will be shut down, along with the Surface Warfare Center in Annapolis and White Oak, Maryland, and in Louisville, Kentucky. The Navy also intends to complete closure of the Naval Undersea Warfare Center in New London, Connecticut. All three perform a wide range of naval research.



ROME LABORATORY

Final flight. Scientists at Rome Lab, facing consolidation, measure electromagnetic effects on air frames.

Also hard-hit will be medical research labs. Among those slated for closure are the Navy Medical Research Institute in Bethesda, Maryland; the Biodynamics Laboratory in New Orleans; and the Health Research Center and Personnel Research and Development Center in San Diego. The total number of personnel reductions in the Navy as a result of the closures should total about 3000, says Craig Dorman, deputy chief of the Pentagon's lab management office.

Army labs would take a relatively minor hit, according to Dorman. The service intends to close its Aviation and Troop Command in St. Louis, which conducts aeronautics research, and create a new Aviation and Missile Command at Redstone Arsenal in Huntsville, Alabama. That and other smaller consolidations will save up to $500 million over a 20-year period, he said.

The Air Force plans to close Brooks Air Force Base in San Antonio and transfer its Human Systems Center there to Wright-Patterson Air Force Base in Dayton, Ohio. The center conducts research into pilot selection and training, as well as the interface between humans and cockpit equipment. Almost half of the 3600 people at Brooks are scientists and engineers.

Rome Laboratory at Griffiss Air Force Base in Utica, New York, would be transferred to Hanscom Air Force Base in New Bedford, Massachusetts, and Fort Monmouth, New Jersey, Army Base. The 825-person lab, two thirds of whom are scientists and engineers, performs a variety of command, control, communications, and intelligence work, and less than a quarter of the staff is likely to gain a transfer, says Rome spokesperson Francis Crumb. The Air Force estimates that the consolidations will save $200 million over 20 years, according to Dorman.

In the meantime, the Office of Science and Technology Policy (OSTP) is hoping this month to give the president a summary of individual reviews of the network of labs run by DOD, DOE, and the National Aeronautics and Space Administration. Kitty Gilman, the OSTP official handling the effort, declined to provide details of her report but said last week that all the reviewers share a belief that "the lab systems are oversized." And Dorman said the current consolidation plan is not likely to be the final blow. "I think we'll have to go through this kind of thing again," he said.

–Andrew Lawler