SCIENCESCOPE

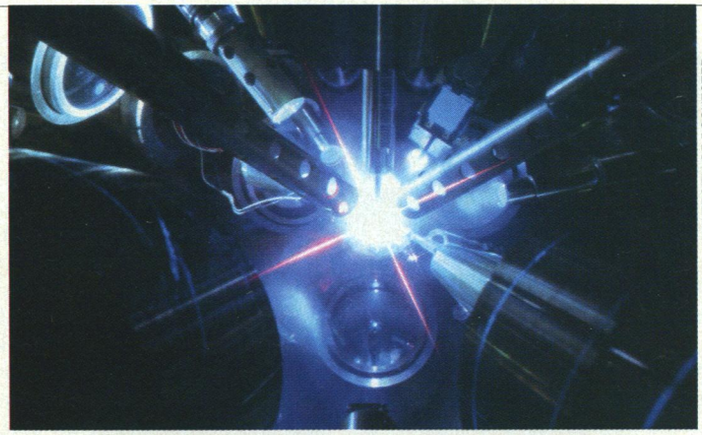
edited by RICHARD STONE

NIST: Firing Up U.S. Industry

Expect a big budget increase this year for a little outfit called the National Institute of Standards and Technology (NIST). For years, Congress has been trying to stuff money in NIST's pockets, hoping the agency would invigorate the flagging U.S. manufacturing sector much as the Defense Advanced Research Projects Agency (DARPA) did for the semiconductor industry 30 years ago. But the Reagan and Bush Administrations resisted until last year, when Congress managed to endow NIST with $384 million, a whopping 55% increase over its 1992 budget. Now, with President-elect Bill Clinton calling for greater investment in civilian high tech, it appears that NIST can anticipate an equally bountiful 1993.

NIST is responding by beefing up its 2-year-old Advanced Technology Program (ATP), which provides incentives for firms to come up with profitable, innovative technology. Even though its $68 million budget hardly qualifies it as a civilian DARPA, ATP already is earning accolades from its beneficiaries. It's a "God send," says James Daughton, president of Plymouth, Minnesota-based Nonvolatile Electronics Inc. ATP invested $1.2 million in Daughton's firm, which is researching new ways of manufacturing computer memory media. ATP expects to fund about 40 projects in 1993, in such research realms as neural networks, thermal insulators, and plastic recycling methods.

Can NIST provide the spark that will ignite a high-tech fire in the United States? To many analysts, the agency, with a fraction of the cash DARPA has, is still at the stage of rubbing two sticks together. In the 1980s, U.S. industry was "decimated by the Japanese because we weren't organized," says one technology analyst. NIST needs to step up the pace of technology transfer to help U.S. industry get back on its feet, he says.



UNIVERSITY OF ROCHESTER

Peace dividend? DOE scientists want to upgrade fusion-laser program.

Will Peace Give Laser Fusion a Chance?

This week, Sciencescope scouts out emerging trends at four federal agencies that may help to guide their research in 1993.

A big challenge in 1993 for Secretary of Energy-nominee Hazel R. O'Leary will be to chart a course for the Department of Energy's (DOE) weapons labs. Finding them a peacetime mission won't be easy. But O'Leary, chief lobbyist for Northern States Power Co., a Minneapolis-based utility, will be glad to know that there's at least one lab research area—laser fusion—that might make a smooth transition.

Otherwise known as inertial confinement fusion, laser fusion has struggled in the shadow of the tokamaks of the magnetic confinement fusion program. But it has also kept one foot in the weapons door: Aiming a laser at a deuterium-tritium pellet can generate a lot of potentially useful energy, but it also acts like a scale model of an H-bomb blast.

Laser fusion research has been looking better ever since President George Bush agreed in October to take steps toward a 1996 test ban. Because laser fusion can model the explosions the weapons labs may no longer be able to conduct, scientists at Lawrence Livermore National Laboratory see the looming ban as an opportunity to upgrade their Nova laser project. They've been advocating this for years, but DOE has balked at the $500 million price tag.

Now, it looks as if DOE is ready to go along. One official told *Science* that there's a good chance DOE will request $45 million this year for the design stage of the Nova upgrade. So is the cold war over for the fusion laser? Not quite. Erik Storm, director of the Livermore project, says the Nova project will keep bomb researchers around and active for that day when their weapons skills may be in need again.

Year of Change for Women's Health Issues

Pundits dubbed 1992 the "year of the woman," but 1993 is already starting to vie for the title—at least in federal health care and biomedicine. Early signs indicate that policy changes advocated by women's groups may remain controversial but are likely to meet little resistance at the new Department of Health and Human Services (HHS), headed by former University of Wisconsin chancellor Donna Shalala. Nor is Congress expected to thwart these changes.

The Women's Caucus on Capitol Hill predicts rapid turnabouts on such issues as the ban on federal funding of transplantation studies using tissue from elective abortions, and the gag rule that prohibits clinics from giving abortion advice. "It'll be a piece of cake" to get these policies reversed on a 50% vote in Congress, says one lobbyist.

The prospects are changing because activists in the women's caucus have moved into some key posts. For example, five women now sit on the House appropriations committee, and three have joined a subcommittee that oversees the National Institutes of Health budget. The Kentucky gentleman who chairs the panel, William Natcher (D–KY), will now have to collaborate with women's rights proponents Nancy Pelosi (D–CA), Nita Lowey (D–NY), and Rosa DeLauro (D–CT). And once Bill Clinton moves into the White House, activists say, the new Congress need not worry about a veto.

New Face Bodes Changes in EPA Science

This year, expect the Environmental Protection Agency (EPA) to try to shed its reputation for regulating more on public opinion than on science. Fueled by a review last year from a panel of outside experts that criticized EPA for its "uneven" science, William Raub, EPA's new chief science adviser, has sprung to action.

Raub, former deputy director of the National Institutes of Health, has already begun to implement some of the review's recommendations. To start, he convened a meeting of EPA's 15 new science advisers in which they laid out a plan for improving links between agency researchers and regulators. He has also urged the offices to finalize by the end of the month a policy on peer review that they've been sitting on for months. The policy would ensure a more frequent and systematic use of peer review for EPA research, Raub says.

If Raub, who was appointed by the Bush Administration in November, can survive the change of guard, he will have a mixed mandate from the scientific community. Some observers don't think Raub is up to the task of remaking the agency's scientific look. "The EPA doesn't even know enough science to get a good science adviser," says one top scientist, who cites Raub's inexperience with environmental issues. Others are more optimistic. "I'm ecstatic," says Bernard Goldstein, a Rutgers environmental scientist and a coauthor of the review. "Bill Raub will be able to identify uncertainties in the science," he says.