RANDOM SAMPLES

edited by CONSTANCE HOLDEN

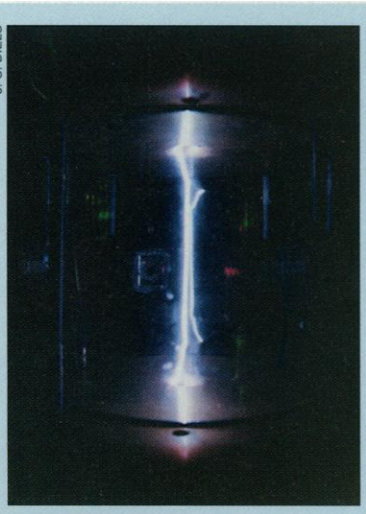
Clinton's New Policy: More Is Less

Only in Washington could an attempt to streamline federal science policy wind up creating more and larger committees to formulate that policy. On 23 November President Clinton signed two executive orders that carry out a highly significant reorganization of the government's approach to managing science (*Science*, 24 September, p. 1668). The arrangement will link federal science agencies more closely to Administration research priorities than they have ever been before. But the changes won't reduce the bureaucracy. The orders created nine new inter-governmental committees to replace six existing panels with similar functions, and a more extensive outside advisory board. A presidential statement claims "we are streamlining White House operations with this move."

The first order creates a National Science and Technology Council (NSTC) to oversee the activities of nine newly established R&D coordinating committees for the government's $76 billion annual investment in science and technology.* NSTC replaces a structure known as FCCSET, whose six panels oversaw only a sixth of the federal R&D effort. (The rest of the research budget was handled in the traditional fashion, by individual agencies.)

The second order establishes the President's Committee of Advisors on Science and Technology (PCAST), which is very like President Bush's PCAST, only much bigger. Besides being a committee rather than a council, the new PCAST will have 15 instead of 12 members and will do most of its work through subcommittees, adding several dozen outside experts to the policy broth.

* The R&D committees cover: health, safety, and food; fundamental science and engineering; information and communication; environment and natural resources; civilian industrial technology; education and training; transportation; national security; and international science and engineering.



J.-C. DIELS

Taming heaven's spark. Lightning hugs laser beam in lab experiment.

Lighting a Path For Lightning

Lightning strikes have always been an emblem of blind chance, but Jean-Claude Diels and Xin Miao Zhao would like to make them more predictable. These University of New Mexico physicists, in fact, would like to evoke lightning strokes from a thunder cloud exactly where and when it suits them. That ability could be useful both for basic research on lightning and for diverting the bolts from communications antennae and other sensitive equipment. Their strategy: Light a path for the lightning with a laser beam.

The idea is to create a conductive path that, in effect, coaxes lightning from the cloud. Other researchers have managed to trigger lightning with small rockets that tow a steel wire up toward a thunder cloud. The intense light of a laser should produce a similar effect by jarring electrons free from air molecules along a long, narrow path up to an altitude of about 200 meters. "It's like putting a needle in the sky—but a needle made of free electrons," says Diels.

The concept is not new: Over the past two decades, groups in the United States and Japan have tried to use high-powered infrared lasers to blaze a trail toward a cloud. Such efforts, which continue in Japan, have run into trouble because these lasers ionize the air so completely as to make it opaque, blocking the beam. Diels and Zhao are exploring a new approach, which they describe in the November issue of *Laser Focus World*. It relies on a short-pulse ultraviolet laser, which should create a more tenuous—and longer—ionization trail.

So far, Diels and Zhao have been limited by the power of their laser to tests in the laboratory. To trigger real lighting, they figure they'll need a laser hundreds of times more powerful. And when they do go out in the field, the researchers will face a new challenge: preventing the lightning from following the beam to its source and destroying the laser—and anybody tending it. Right now Diels and Zhao's plan is to trick the lightning, perhaps by firing the laser horizontally at a mirror located a safe distance away, which would then deflect the beam toward the sky.

Utah Puts Fusion Out In the Cold

Four years, 8 months, and 9 days after it all started, the University of Utah is out of the cold fusion business. And Utah taxpayers are out of the business of paying for it. On 2 December, the university announced that after 9 months of negotiating, it had licensed the patent rights to the famous non-invention that had promised unlimited, inexpensive, pollution-free energy.

The new defenders of cold fusion will be a Salt Lake City-based company called ENECO, which among other things will take over the job of paying lawyers to keep the patent rights alive. Paying legal fees has been the primary focus of the university's involvement since the cold fusion bubble burst 4 years ago, and it's cost them about $700,000. ENECO, which does research on alternative energy sources, paid in the "low six figures" for the exclusive cold fusion licensing rights, and will pay the university royalties on any profits that might accrue from future uses of the patented process. The agreement specifies that the company will "try to exploit any commercial value that they may believe the technology has," says Richard Koehn, vice president of research at Utah.

ENECO's president, Fred Jaeger, says the company is optimistic on that score: They hope that now, with the university out of the loop, they'll be able to work closely with cold fusion inventors Stan Pons and Martin Fleischmann—both of whom are now in France, reportedly doing cold fusion research for a Toyota-owned company, Technova. Their relationship with the university has been severely strained since 1990. But now, says Jaeger, "We can reunite the inventors with the invention."

Silly Science Goes Online

Researchers are probing cattle-human relationships—and publishing their findings alongside studies that show a marked trend toward shorter names for American politicians, and that a new wristwatch can gauge the strength of coffee. If this is all news to you, then you haven't been reading the *Journal of Irreproducible Results* (*JIR*), a 38-year-old publication that keeps tabs on "overly stimulating" research and other things humorous. Maybe you're embarrassed to let other people see it in your mailbox. But now you can read a scaled-down version of the *JIR* on the privacy of your computer, courtesy of the Internet. To get on the cyber mailing list of mini-*JIR*, post an e-mail message to listserv@mitvma.mit.edu. You can also try jir@mit.edu to contact editor Marc Abrahams.