tients." No serious safety problems were encountered.

These results are in line with what private physicians were reporting 5 years ago, when the technique was spreading in the United States. "PERK corroborates our data," Bores said in an interview. All along, the private physicians have maintained that they had sufficient data from clinical experience to go ahead with the technique. By the time Bores introduced radial keratotomy into the United States, Fyodorov had nearly 5 years' experience with it, and both Bores and Schachar argue that the reports submitted to the National Radial Keratotomy Study Group and the Keratorefractive Society showed the procedure to be safe and effective. Waring and other investigators in PERK have argued, however, that these data do not constitute a proper clinical trial.

"The basic issue here is how should surgical procedures be brought into the health care delivery system," notes one defendant who asked not to be identified. Both Bores and Schachar regard the PERK study and the efforts to discourage widespread use of radial keratotomy as an attempt by academic physicians to regulate the practice of ophthalmology. They argued in separate interviews that decisions on surgical procedures should be left to individual surgeons and that medical ethics instilled during training should be sufficient to guard against abuses. "You don't regulate at the procedural level, you do it at the training level," argues Bores.

"There's an art and a science to medicine," says Schachar. Regulation, he argues, "is like controlling Leonardo's hand. If you make him use a stencil, you won't have a Leonardo."

Clinical trials are, however, widely regarded as important for evaluating new techniques and practices. "If [the PERK] study and similar studies were to be discontinued—by discouraging voluntary participation by private physicians by lawsuits or for any other reason—the public would suffer, with potentially dangerous consequences," said Carl Kupfer, the director of the National Eye Institute, in a deposition in the Atlanta case.

James Rowsey, an Oklahoma ophthalmologist who is a defendant in the suit, added in a brief filed last year, "Insofar as this action may have a chilling effect on any physician speaking out in good conscience concerning the possible ramifications of a new procedure, the interests of the public and society in general have been severely damaged."

—COLIN NORMAN

NSF Selects Supercomputer Centers

The National Science Foundation (NSF) has announced the winners in the competition to host the agency's four new supercomputer centers. They are:

- Cornell University. The new Center for Theory and Simulation in Science and Engineering will be managed by Nobel Laurate Kenneth G. Wilson, one of the most vocal proponents of a federal supercomputer program.
- The University of Illinois in Urbana-Champaign. This facility will be directed by Larry L. Smarr, also a major advocate of the supercomputer initiative. It will work closely with the university's new Center for Supercomputer Research and Development, which is jointly funded by NSF and the Department of Energy.
- The San Diego supercomputer center. Supported by a consortium of 18 universities around the country, the center will be located on the campus of the University of California, San Diego, and managed by GA Technologies. The project director is Sidney Karin.
- The John Von Neumann Center at Princeton. The center will be managed by the Consortium for Scientific Computing, a collection of 12 universities. The director is Steven A. Orszag.

The new facilities will receive a total of $200 million from the NSF over the next 5 years. Further contributions from the host states, the host institutions, and industry will approximately double that figure.

NSF officials and the winners alike were understandably ebullient at the announcement. "We now have four Fermilabs for computing!" said John W. D. Connolly, director of the foundation's new Office of Advanced Scientific Computing. Indeed, the supercomputer initiative is a response to a widely perceived problem: a decline in academic computing analogous to the much discussed decline in academic instrumentation. Massive numerical simulation has become critical in fields ranging from astrophysics to climatology, yet university researchers have mostly had to beg, borrow, or steal time on supercomputers at the national laboratories.

The idea of the new centers is to provide the research community at large with access to supercomputers, in much the same way that the NSF's national observatories provide the astronomical community with access to telescopes. (As a temporary expedient, the NSF has already begun buying time for researchers on existing supercomputers; on most such machines that cost is around $2000 per hour.) A key component of the system will be a nationwide, high-speed data network that will allow researchers to communicate with the supercomputers from their desktop terminals without ever having to visit the centers personally.

One obvious concern in all this is that the program not be terminated after the first round of machines are in place. There is historical precedent: one reason for the poor state of academic computing in the 1970's was that the Nixon Administration terminated the NSF's support for campus computer centers in 1972. However, NSF director Erich Bloch is adamant that such will not be the case this time: "Technology is undergoing such rapid changes that present-day supercomputers will be obsolete in a couple of years," he says. "We have a commitment to maintaining the state of the art at these centers. This is not going to be a one shot deal."

—M. MITCHELL WALDROP

AID Tightens Antiabortion Measures

Proposed regulations to implement the Administration's antiabortion policy abroad could result in a loss of $50 to $80 million for family-planning programs, according to the Population Crisis Committee (PCC).

The regulations, which would apply to all grants to nongovernmental organizations (NGO's), represent the government's interpretation of the executive proscription against population aid to organizations that "actively promote" abortion.

They would require that all recipients of population money agree not to furnish funds to programs that include abortion services. Both recipients and "sub-recipients" would have to keep records to demonstrate adherence to