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

the regulation. The rules apply to all abortions other than those to save the life of the mother. The active promotion of abortion would include abortion counseling and public education campaigns.

The PCC and the Alan Guttmacher Institute say the policy "threatens the bulk of family planning services overseas." In a lengthy letter to the Agency for International Development (AID) they point out that the regulations "threaten the credibility of NGO's as independent organizations"; pose an affront to the authority of governments that permit abortion; and promote a type of censorship that in this country would be unconstitutional.

AID has already withheld $12 million from the International Planned Parenthood Federation, which would not agree to deny funds to programs that include abortion services. More recently, a hold was placed on this year's $47 million donation to the United Nations Fund for Population Activities because of concern over the excesses in China's population program. The UN fund does not fund family-planning programs but has provided China with money for training and demographic studies.

—CONSTANCE HOLDEN

Keyworth Attacks the Press

Presidential science adviser George A. Keyworth, II, has some harsh things to say about the way the American press covers issues in science and technology. In an interview to be published in the forthcoming January–February issue of *SIPIscope*, the newsletter of the Scientists' Institute for Public Information, Keyworth attacks the press for its negative reporting and claims that many reporters are not interested in getting the facts. Keyworth, who generally has good relations with Washington reporters, has not previously been so outspoken on this subject.

Excerpts from *SIPIscope* follow.

SIPI: In a talk you gave at the Annenberg School of Communications at the University of Pennsylvania in October, you criticized mass media coverage of science and technology, accusing most journalists of deliberately distorting the facts. Would you elaborate on that?

Keyworth: Let me be candid. I look back on the last few years and I see a tremendous number of positive things, more than I expected. The strong university-industry relationship that has developed is something that I would never have predicted.

But if I look at the negatives I see the American press—a press that is not responsible enough to do their job carefully or learn. The press is highly skewed in two senses: It is skewed in a manner that is not consistent with trends in the United States today, and it is skewed toward an apparent joy in attacking anything that resembles the "establishment."

This country is looking toward things like investment in the future, education, respecting people who work hard and well. We have a pragmatic view of the world's competitiveness, not some artificial, ideal world where, for example, foreign policy is dominated by human rights.

The American press as a whole is inconsistent with these trends. At a time where public attention is moving away from emphasis on divorces and moving toward the importance of the family, the American press is absolutely out of step.

And the American press as a whole, especially here in the East, has done an irresponsible job of discussing important technical issues that are not easy for the public to understand—the role of biotechnology, for example. They cover hearings on the Hill on the hazards of biotechnology, but how much effort in the press has there been to discuss the positive things biotechnology can do for America? Some, but very, very little.

SIPI: You said that many or most reporters deliberately distort the facts Why do you think they do that?

Keyworth: We're trying to build up America, and the press is trying to tear down America.

SIPI: Why?

Keyworth: There are several reasons. Number one, for some reason that I just do not understand, much of the press seems to be drawn from a relatively narrow fringe element on the far left of our society. Number two, there's an arrogance that has to do with the power of the press. This arrogance feeds itself by achieving the maximum amount of power. It's easier to tear down a building than it is to build one; it's easier to achieve power by being negative and tearing at foundations.

Yet for all his criticism, Keyworth told *SIPIscope* that he does not feel "personally abused" by the press. "I have relative luxury," he said. "Most of the people who actually take the time to come see me are relatively thoughtful people."

—BARBARA J. CULLITON

Hollywood Takes on Genetic Engineering

Sensitive that a new technology can be easily misunderstood, members of the biotechnology community have been talking more and more about the need to counter fears about potential hazards of the new biology with more public education about its benefits. They have yet to come up with concrete plans. Hollywood, however, may force their hand.

A new science fiction movie called *Warning Sign* will focus on a gene-splicing experiment that goes awry. Twentieth Century–Fox publicist Ted Hollis says the film is scheduled for release next fall and describes it as "a high-tech thriller." It deals with "the raw emotions of scientists and technicians, who suddenly find themselves sealed in their fortress-like lab with an experiment that has gotten out of control." The movie stars Sam Waterston (currently the lead in *The Killing Fields*) and Kathleen Quinlan. The film is directed by Hal Barwood, and produced by Jim Bloom, who has previously worked on sci-fi films including *Invasion of the Body Snatchers*.

Asked what kind of experiment the film depicts, Hollis said, "Remember back to high school biology, and discussion about *mutants*!" Pressed a bit more, he said that scientists are experimenting with plants and then somehow a "mutant human being" is created. The film, he said, "is a consciousness raiser, like *China Syndrome*," a movie that depicted mayhem at a nuclear power plant.

The film was originally entitled *Biohazards*, a switch that the biotechnology community may consider a small blessing.—MARJORIE SUN