

Indeed, most researchers say the outright ban on research using transgenic animals would be devastating. "If this initiative were to become law, I would have to stop my research in Switzerland," warns Denis Duboule, a professor of embryology at the University of Geneva who uses genetically altered mice to mimic human syndromes. Charles Weissmann, a prominent researcher at the University of Zurich's Institute for Molecular Biology, says he "would be forced to shut down my operation and seek refuge elsewhere with my transgenic mice." And Bernard Mach, head of the University of Geneva's Department of Genetics and Microbiology, says he and other Geneva university officials have discussed "transferring all of our transgenic research across the border to France" if the initiative is approved.

Opposition mobilizes. While they may have gotten off to a slow start, many Swiss scientists believe that they can convince voters to reject the initiative. They already have some key political support: The Swiss parliament and Interior Minister Ruth Dreifuss, who is responsible for science, have expressed opposition to the measure. "The quest for knowledge should not be allowed to be stopped by general prohibitions," Dreifuss said recently at the Swiss Federal Institute of Technology.

A meeting of key researchers is planned for this spring in Geneva to discuss the issues

and develop a strategy. And Switzerland's powerful pharmaceutical industry—led by giants Hoffmann-La Roche and Novartis (formed last year by the merger of Sandoz and Ciba-Geigy)—is committed to using its resources to help defeat the initiative. "So far, the scientists' campaign has been low-key," says Mach. "But we take this very seriously. The supporters of the initiative have a big budget, and they use simplified slogans and advertisements. We, too, may have to turn to the help of professionals."

"We are trying very hard to communicate with the general public," says Richard Braun, a microbiology professor at Bern University who also chairs the Gen Suisse foundation in Bern, which aims "to promote public understanding of biotechnology" with the support of big pharmaceutical companies. Braun says he is confident that Swiss voters will eventually come down on the side of science. Although Switzerland already has some of the world's strictest laws governing the use of laboratory animals, the nation's voters in 1993 rejected an initiative—by a 72% to 28% margin—that would have banned the use of animals for research. A previous animal-rights initiative was also rejected.

One factor working in favor of the scientists is the number of jobs that depend on the pharmaceutical industry, which employs tens of thousands of Swiss workers in the area around Basel. "Major parts of biotechnologi-

cal research in industry would have to be relocated to other countries," says Thomas B. Cueni, secretary-general of Interpharma, the Swiss pharmaceutical industry association. Cueni says about 2200 pharmaceutical-industry scientists are involved in basic research in Switzerland.

The threat to academic jobs is also sparking an organized response. Peter Mani, chief of biosafety at the Swiss Institute of Virology and Immunoprophylaxis near Bern, is coordinating an effort by researchers at Swiss universities to help defeat the initiative, which is supported by the Union of Swiss Organizations for Experimental Biology, the Swiss Society of Microbiology, and the Swiss Academy of Medical Science. He says a preliminary survey found that about 880 scientists, 350 postgraduate students, and 230 technicians would have to find other work if the use of transgenic animals is forbidden.

Mach says that next year, Swiss voters should remember the Austrian monk, Gregor Mendel, whose 19th century experiments with cross-pollination formed the basis for the science of genetics. "After all, Mendel released what you might call genetically modified organisms into the environment," Mach says. "Today, some people in Switzerland might want to throw him in jail for that."

—Robert Koenig

Robert Koenig is a writer in Berlin.

RESEARCH FUNDING

Senate Bills Back Huge Increases

Barely a month ago, research lobbyists began pushing for a 6.5% increase next year in the \$12.75 billion budget of the National Institutes of Health (NIH). They assumed that was as much as they could expect from a penny-pinching Congress intent on curbing federal spending. And their recommendation that the National Science Foundation's (NSF's) \$3.27 billion budget be increased by 7.1% seemed so unrealistic as to trigger speculation about what its advocates had been imbibing. Maybe someone should have checked the water fountain in the Senate anteroom instead.

Last week, Senate Republicans were falling all over themselves with promises to do more for basic research than the lobbyists had dreamed possible. One day after the swearing-in of President Clinton, Senator Connie Mack (R-FL) introduced a resolution to double the NIH budget over 5 years, and Senator Phil Gramm (R-TX) proposed a bill calling for a doubling over 10 years of the research budgets of a dozen federal agencies and programs. Speaking in support of Mack's resolution, Senator Arlen Specter (R-PA), chair of the panel that controls NIH's purse strings, pledged to fight for a 7.5% increase—

a boost of nearly a billion dollars—in NIH's 1998 budget.

The gush of kind words for basic research is, so far, exactly that—kind words. "I'm not counting the money yet, that's for sure," says one NSF official. Even if adopted, the proposals from Mack (S.R. 15) and Gramm (S. 124) are authorization measures that would allow Congress to spend more—but do not force it to spend an extra penny. Binding spending decisions will come later this year, as appropriations panels like the one headed by Specter do their work.

Still, the fact that legislators are even discussing big increases at a time when most agencies are looking at flat or shrinking budgets warms the hearts of research advocates. "I think [members of Congress] see it as a win-win proposition, as a way of doing something that the public wants," says John Suttie, a biochemist at the University of Wisconsin and president of the Federation of American Societies for Experimental Biology (FASEB).

The first concrete indication of the depth of this newfound love for science on Capitol Hill will come this spring, when Congress



adopts a budget resolution that will guide the work of the spending panels. Aides to Mack and Gramm say they will try to beef up the relevant research accounts in that resolution. Any increases for science, however, will require cuts in other programs—something on which the Mack and Gramm measures are silent.

One legislator who has spelled out trade-offs for science is Representative George Brown (D-CA), the veteran ranking member on the House Science Committee. Brown's plan, reissued last week after its first appearance last fall, would boost R&D spending by 5% a year by cutting various entitlement programs and postponing any tax cuts. But it stands little chance of passage in a body controlled by the other party.

In the meantime, organizations like FASEB are rethinking their earlier lobbying goals in light of the new spending figures now being bandied about. Suttie says it's "too early" to discuss precise numbers, but something more than NIH's own target of a 9% increase seems likely. In the meantime, he says, "you take what you can get—and this is a great place to start."

—Jeffrey Mervis