ficulty in proving equivalence to an accepted method goes beyond the Draize test, says Fred Schramm, vice president of Advanced Tissue Sciences in La Jolla, California. His company championed its Skin^2 tissue-culture system as a substitute for corrosivity testing, but the market was evolving slowly and regulatory approval in Europe was "still a ways off"—so last month the company abandoned the test.

Regulators admit that there have been bottlenecks but say they are gearing up to fix them. The 2-year-old U.S. Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM), an ad hoc group of validation advocates from USDA, DOT, and other agencies, hopes to secure funding to become a permanent advisory body next year, and has already informed IVI that it will do an "interagency peer review" of Corrositex as a shakedown run. "Regulatory acceptance will remain the purview of the agencies, but we'll facilitate the review of new methods," explains co-chair Stokes.

ICCVAM and its counterparts in Europe have also begun to "harmonize" the international validation process, producing comparable validation criteria at recent workshops in the United States and Sweden. "We've been through a long learning phase, but now we're feeling more confident about the future," says Balls, who expects that the Utrecht meeting will spur the field of in vitro testing—one new research area that benefits animals as well as people.

–Wade Roush

SCIENCE IN FRANCE

New Research Strategy Draws Criticism

PARIS—To judge by two recent events, French scientists would seem to have plenty to cheer about. Late last month, research escaped relatively unscathed from brutal government cuts designed to make France's 1997 budget conform to the requirements of European monetary union (*Science*, 27 September, p. 1790). And last week, the government announced that it will create a major new gene sequencing center, marking France's long-awaited entry into the international effort to sequence the human genome. But just as researchers were breathing a sigh of relief at their reprieve from the ax, they learned that it comes with strings attached.

On 3 October, an interministerial committee chaired by Prime Minister Alain Juppé unveiled a sweeping panoply of measures designed to harness French science to serve the needs of France's ailing economy. The new strategy, which will take effect with the 1997 budget, will shift research funds into priority areas and push scientists to reorient their own priorities—for example, by including patent records as part of the evaluation of publicly funded researchers. Juppé's office declared in a statement that the pressures of international competition mean that France's "grand national research ambitions ... must be translated into economic development and the creation of new jobs." But the strategy could backfire: By laying such a heavy hand on the reins of French research, the government has provoked anxiety that basic research will be compromised. "The programs are very short-sighted," comments Harry Bernas, a physicist at the Orsay campus of the University of Paris.

The 23-member committee, which included the heads of all government ministries involved in or affected by research, set down seven "priority themes" for French science: electronics and information technology, transportation, industrial chemistry, food and agriculture, product innovation, medical research, and environmental technology. The committee also earmarked funds for specific projects in biotechnology, industrial chemistry, infectious diseases, and gene sequencing.

To make the new strategy stick, the government has mandated that France's public research agencies set aside a portion of their budgets for these priority programs. For example, in 1997, the Centre National de la Recherche Scientifique and the biomedical agency INSERM will be required to set aside 7% of their laboratory budgets (excluding salaries) for this purpose, a figure that will rise to 20% over the next several years. Moreover, publicly employed scientists will find that the number of patents they file will be taken into account along with their publication record when promotions are considered. And, to provide an extra incentive—and a sweetener—Juppé signed a decree on 2 October that allows individual researchers to reap 25% of the profits from any patentable discoveries they make.

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Taking the reins. Prime Minister Alain Juppé.

Even with this inducement, the plan drew mixed reactions from French researchers contacted by *Science*. Many expressed concern that it might upset the proper balance between basic and applied research. "We all want science to be useful," says Pierre Chambon, director of the Institute of Genetics and Molecular and Cellular Biology near Strasbourg. "But to tie it so tightly to industry is a mistake." For example, says Orsay's Bernas, "the interface between biology and physics, which is growing exponentially, is completely out of the scope of the programs being designed."

A more favorable but cautious view of the policy is expressed by André Capron, director of the Pasteur Institute of Lille in northern France, a largely self-supporting institute that has seen a 15% drop in its total income in recent years. "It is clear we will not survive if there isn't a strong approach toward applied research and industrial applications," Capron says, although he adds that researchers must "maintain their vigilance about the proper balance between basic research and private activities."

Capron also applauds the decision to allow researchers to share directly in the profits by patenting their own discoveries. In contrast, Chambon argues that profits should go to the laboratories rather than individual researchers. "This is not just," Chambon says. "You are going to favor people working in fields that are immediately applicable at the expense of people doing basic research." And the ultimate result, he adds, might turn out to be the opposite of that intended by the government's new strategy. "What is bad for basic research is bad for applied research," says Chambon.

While researchers were anything but unanimous in their response to the government's tilt toward economically important research, they did give widespread approval to another big announcement last week—the decision to create a human gene sequencing center with a research staff of 120 to 140 people. The center, which will be located in the Paris suburb of Evry, will be directed by Jean Weissenbach, an internationally known geneticist and currently head of the Généthon gene research center, also in Evry. It will have the capacity to sequence 20 million to 30 million DNA bases per year with an error rate of only one in 10,000 bases. The government, which is committed to supporting the project for 8 to 10 years, has allotted $11.5 million to the center for 1997 and up to $19.3 million for each subsequent year, placing it among a handful of such top centers in the world. The announcement provided at least some salve for the anxiety created by the government's new grand strategy for French research.

–Michael Balter