offers of collaboration, which can mean little more than working as a subcontractor.

"The advantage of starting at the research end is that it is relatively inexpensive, but it is also likely to raise the question: Is this another SDI-type program, where the United States is trying to buy all our ideas on the cheap," says Hartley. "I am not saying that is necessarily the case; but some people will certainly use that argument."

David Greenwood, director of the Center for Defense Studies at the University of Aberdeen in Scotland, warns that the Nunn initiative "is a potential distraction from intra-European cooperation" which, he argues, remains essential if Europe is to strengthen its own technological capabilities. "One way around this would be to add a clause to the amendment saying that the United States would not try to take a slice of any cooperative deal unless two or more European countries are already involved—even if the United States offer has acted as a catalyst," suggests Greenwood.

Nevertheless, Beard of NATO says "the mood is there." He suggests that, with broad political endorsement of the first six projects, "we have run the first 10 yards of a 100-yard race." With a firm deadline of September 1987 by which formal contracts must be negotiated in order to qualify for the Nunn amendment funding, and progress being closely monitored from Brussels, "there is going to be some banging of heads together" to get things to work, says Beard. ■ **DAVID DICKSON**

Briefing:

David Packard Tackles OMB on Indirect Costs

"The [Office of Management and Budget] did precisely what we recommended they not do," when it proposed a uniform cap of 26% on the administrative costs that universities recover on research grants, says David Packard, chairman of a panel of the White House Science Council. The Hewlett-Packard board chairman, whose panel is about to release its study of "The Health of U.S. Universities and Colleges," is one of the most influential persons to step into the very heated debate that is taking place between universities and OMB officials.

The forthcoming Science Council report will recommend a cap on administrative costs, which constitute about half of total indirect costs. But, by singling out this one recommendation, the OMB has distorted the intent of the report, in Packard's view. "The OMB lacks any understanding of what the problem is all about," according to Packard.

Placing emphasis on the report's recommendations as an "integrated package," Packard said, "In suggesting a fixed administrative overhead allowance, we also recommended important measures to inject reality into the way research costs are identified and paid for." For instance, the report, which was circulated in draft form in January (*Science*, 31 January, p. 447), recommends a shift to longer term grants (5 years), an end to the administratively burdensome reporting by faculty of how they spend their time, and a new formula for more rapid depreciation of buildings and scientific equipment.

Packard's comments were made during an interview with Spyros Andreopoulos, director of communications at Stanford Medical Center and were released by the university. D. Allan Bromley of Yale is vice chairman of the Science Council panel.

The rates charged for administrative costs vary from institution to institution, with most exceeding the 26% cap that OMB proposed earlier this year in a move that took university administrators by surprise. Robert Rosenzweig, president of the Association of American Universities, has called the OMB proposal "arbitrary and capricious" (*Science*, 7 March, p. 1059). Various estimates have been made of the total impact on academic research, were the cap to stick. Most recently, Stanford president Donald Kennedy put the figure at $300 million, with 40% concentrated in fewer than a dozen institutions.

OMB's original plan was to cap administrative charges at 26% as of 1 April, fewer than 6 weeks after the proposal was made public. However, strong opposition from universities, backed by pressure from members of Congress, forced OMB to grant a stay of execution until 1 July (*Science*, 4 April, p. 17). Now the budget office is considering comment from all quarters, including "scientific professionals who would have less opportunity to pursue research if overhead continues to climb."

At present, there is reason to speculate that implementation of the OMB cap may be delayed even further while the issue is more fully debated. In the House of Representatives, Sidney R. Yates (D–IL) has introduced an amendment to an important supplemental money bill that would mandate a delay. The congressman objected to the "arbitrariness" of OMB's action, which was taken without consulting the affected universities.

And Packard is talking to OMB to "see if we can get this thing turned around." ■

BARBARA J. CULLITON

NAS Signs New Pact with Soviet Academy

After a year of negotiation, the National Academy of Sciences (NAS) has reached agreement with the Academy of Sciences of the U.S.S.R. on a new program of scientific cooperation. The 2-year pact, signed on 1 April, will be the first formal arrangement between the academies since 1980, when the previous program was partially suspended by the NAS as a protest against the treatment of Andrei Sakharov.

In a telephone interview, NAS president Frank Press listed the principal features of the new program. "Both sides will have access to the scientists who are at the forefront of key fields," Press said. This will be accomplished, the agreement says, through exchanges of up to 20 scientists per year for visits of 2 weeks to 12 months, all of whom are "known by their scientific publications and by their participation in scientific meetings." Reflecting an NAS concern that past Soviet nominees for the exchange have not always been at the forefront, the agreement notes that "an important and significant portion" of the exchanges will occur by invitation of the other side.

In addition, the pact calls for up to two joint workshops per year in each country, involving roughly ten scientists, and an annual exchange of six members, specially designated as "Academy Scholars," who will consult and conduct public lectures for 2–4 weeks on problems of mutual interest. The entire arrangement will be reviewed at least once a year by the officers of the Academy, who are free to raise matters such as the "human rights environment," Press said.

A year ago, when the negotiations began, the NAS was sharply criticized by some of its members because Sakharov remained in exile (*Science*, 3 May 1985, p. 530). Richard Perle, an assistant secretary of defense for international security policy, also attacked the decision on the grounds that it could facilitate the transfer of sensitive U.S. technology.

The agreement addresses the latter criticism by specifying that the exchanges will be conducted only in "nonsensitive" or "open" fields. The NAS attempted to defuse the former argument by sending a telegram about Sakharov to members of the Soviet Academy several days after the new pact was announced. The telegram asks that Sakharov be allowed to resume his scientific work, and it was paired with an NAS press release listing similar appeals in the past.

A new approach is warranted, Press said, "because we had no channel of communication in the absence of an agreement. Our

telegrams went unanswered, and our contacts were much reduced in number. There were no workshops and symposia, no joint meetings. Through the resumption of these contacts, we will have an opportunity to plead not only Sakharov's case, but also that of refuseniks and so-called dissident scientists as well." ■ **R. JEFFREY SMITH**

USDA Biotechnology Review Criticized and Defended

The adequacy of federal procedures to review the safety of biotechnology products and their release into the environment has again come under question, this time by two separate groups. Activist Jeremy Rifkin, who opposes virtually all use of biotechnology, last week charged that the U.S. Department of Agriculture (USDA) had not properly reviewed an animal vaccine made from genetically altered live virus before it was approved for commercial sale. At the same time, the General Accounting Office (GAO) said that USDA needs to improve its process of assessing the safety of biotechnology products.

Rifkin asserts that the department skirted adequate review of the vaccine, which is a herpes virus modified to prevent pseudorabies. The disease commonly afflicts swine, cattle, and sheep, and causes rapid death and serious economic loss to farmers. The vaccine was licensed in January and is sold by Biologics Corporation in Omaha, Nebraska. Its use represents the first environmental release of a virus modified by recombinant DNA techniques.

Rifkin makes several assertions that he says illustrate that USDA is "not prepared to regulate biotechnology products." The department was not initially told that the vaccine was genetically engineered, he claims. When the department's regulatory arm did learn that the vaccine was engineered, USDA's biotechnology advisory committee was not informed that it was undergoing review. Also, authorities in several states where field tests were conducted were not told that the virus was genetically modified until after they approved the experiments. Rifkin plans to sue USDA on 9 April to revoke the marketing license, charging that the department did not follow administrative procedures during its review and failed to conduct an environmental assessment of the use of the vaccine.

But several scientists refute Rifkin's contentions. George Shibley, chief staff microbiologist in USDA's veterinary biologics branch, says that the company told the department when it originally applied for a license that the vaccine was made by recombinant DNA methods. The company did not initially disclose to the department the precise method it used to change the virus because the company's patent was still pending. Nevertheless, according to David Espeseth, senior staff veterinarian in the biologics branch, the company was asked for more information before field tests were conducted, including data on the stability of the mutation and the virus' ability to shed and spread. After the patent was issued, the company revealed the methods to the department.

State officials from Illinois and Minnesota said that the company told them from the beginning, when it applied for permission to field test, that the vaccine was genetically engineered. Paul Doby, superintendent of Illinois' division of meat, poultry, and livestock inspections, said that the company went out of its way to explain the vaccine to state authorities by holding a special seminar for them last summer.

USDA approved the new vaccine on the basis of experience with similar products already on the market. Three other modified live pseudovirus vaccines are commercially available, although they are not products of recombinant DNA techniques. These vaccines and the new one are derived from the same Bucharest virus. Espeseth said that the new vaccine may even be safer because the gene deletion prevents the virus from replicating.

Shibley said that although the proposal was not formally reviewed by the biotechnology committee, it was told about the vaccine and "no reservations were expressed."

The GAO report* said that, although USDA has a basic regulatory framework in place to review genetically engineered products, its specific procedures and programs need to be defined much more clearly. For example, USDA needs to clarify how it will handle requests to conduct outdoor experiments with genetically engineered products. The biotechnology committee, which is supposed to be USDA's main forum for discussing genetic engineering "lacks authority and direction."

In the absence of a stronger policy, the report says, regulators and researchers at the department have been engaged in a turf battle over who will have prime responsibility to regulate biotechnology. As a result, applications to conduct similar field tests of genetically engineered plants were reviewed by different branches of the department, which could lead to inconsistency. The report was requested by the House Committee on Science and Technology, whose chairman, Don Fuqua (D–FL), recently introduced legislation that would tighten the regulation of field tests with genetically engineered products. ■ **MARJORIE SUN**

*Biotechnology: Agriculture's Regulatory System Needs Clarification, March 1986.

Budget Squeeze May Stall Start-up of New Colliders

Operation of upgraded accelerators at Fermi National Accelerator Laboratory and the Stanford Linear Accelerator Laboratory (SLAC) may be stalled if budget recommendations of a House science subcomittee prevail in Congress. The proposed budget reductions also would extend to other general science, research, and technical analysis programs. The proposed cuts reduce program spending in fiscal year 1987 4.2% below 1986 expenditures.

Leon M. Lederman, director of Fermi, says the $25-million reduction in proposed funding could mean delaying operation of the proton-antiproton colliding beam facility or suspending operation of fixed-target experiments. Burton Richter, director of SLAC, says it may be virtually impossible to operate the upgraded electron-positron linear collider. Stanford's budget was slated to rise to $97 million from a FY 86 level of $77 million. Richter says that there is no easy way to reshuffle his budget considering the electricity, personnel, and maintenance costs of the facility.

Congressional aides and Administration officials do not hold out much hope for major changes in the funding scenario. Even informal Senate Budget Committee guidelines to committees, sources say, hold spending at or slightly above 1986 levels in many instances.

The House Science and Technology subcommittee on energy development and applications imposed cutbacks in response to instructions from House Budget Committee Chairman William Gray III (D–PA). Despite the fact that the House Budget Committee has yet to vote on actual budget marks, Gray has proceeded to negotiate a budget reduction for energy research. After first seeking a $500-million cut in outlays, congressional aides say, Gray settled with Science Committee Chairman Don Fuqua (D–FL) on a $100-million reduction in spending below FY 86 levels. The proposed cuts apply to energy research functions overseen by the Science Committee's four subcommittees. ■ **MARK CRAWFORD**