tive grants to support mostly basic research, and urges a thorough shake-up of the ARS. No fundamental change in the structure of the system is contemplated, however.

The use of block grants to fund state-level agricultural research goes back to the Hatch Act of 1887. The funds are distributed among the states according to a formula based in part on the size of each state's rural population. They are supposed to provide a stable core of support, which is at least matched by state funds. Since these grants come without many strings, they are cherished by the experiment stations and state governments and enjoy strong support in Congress. In the omnibus farm bill approved last year, for example, Congress decreed that at least 25 percent of USDA's research funds should be in the form of block grants. (The proportion is now about 23 percent.)

The Winrock participants chose not to take this system on. "The political reality is that the formula funds won't be reduced, and that you start from there," says panel member Perry Adkisson, deputy chancellor for agriculture at Texas A & M. Indeed, the report notes that the block grants can constitute a valuable source of funds and should provide a basis for federal-state dialogues on research priorities and directions. The problem, however, is that the dialogue at present revolves around the bureaucratic details of administering the grants, and scientific discussion gets lost, the report claims. It therefore recommends that the block grants be passed on with the minimum of bureaucracy at the federal level.

As for the ARS, the report notes that "political interests have been responsible for the establishment and retention of a large number of field sites and major facilities, many not justifiable in terms of research need or efficient allocation of resources." It therefore recommends that USDA should thoroughly evaluate each facility and choose one of four options: retain as an ARS facility, turn over to the host state and phase out federal support, sell to private industry or to a university, or close. A central problem with any attempt to prune facilities, however, is that members of Congress tend to balk when institutions in their states are threatened, and pork-barrel politics takes over. (Indeed, about half of USDA's research facilities were established by congressional initiative.) The report thus politely asks Congress to let ARS determine the fate of facilities according to their merits.

In addition, the report recommends that ARS should concentrate on basic research and that its programs should be subjected to rigorous peer review.

Like every other group that has examined the agricultural research system, the Winrock participants have urged that a growing proportion of USDA's research funds be in the form of competitive, peer-reviewed grants. All real growth, above inflation, should come in this area, the report says. What happens, however, if there is no real growth? Should funds be shifted from other programs to expand competitive grants? "We ducked that one," says one participant.

USDA does have a competitive grants program, but it receives only about $16 million a year, a miniscule fraction of the department's research total. In part, the paucity of funds is the fault of Congress, which has failed to appropriate requested money. Congressional resistance reflects concern that the competitive grants program will eat into support of other USDA research, particularly block grants. The Winrock group's reluctance to tackle the problem of redistribution is therefore understandable.

Other groups have made similar criticisms and recommendations before, but this time, a combination of factors may ensure that changes are made. First, the report meshes with the Reagan Administration's proclaimed policy of freeing funds for innovative research by pruning dead wood from existing programs. "We are going to use the report as the basis for policy decisions we will be promoting," says OSTP assistant director Denis J. Prager, who convened the Winrock panel. Second, there is new leadership in USDA research programs. Bentley has just been appointed, and Kinney, who has been head of ARS for only 2 years, is regarded as receptive to proposals for reform. And third, the agricultural power block on Capitol Hill, which has resisted change in the past, is not as powerful as it once was. Representative George Brown (D–Calif.), a member of the Winrock panel, plans to hold hearings on the system next year with his agricultural research subcommittee, and is said to be willing to devote a lot of time to the issues.

But rapid and fundamental change should not be expected. "Do I think the USDA is going to close down all its field stations and become a National Institute of Agricultural Research? It's not going to happen soon," says panel member James B. Kendrick, Jr., vice president for agriculture and university services at the University of California. But, he adds, "I happen to think that's the way things should go."—COLIN NORMAN

Science Board Nominations

President Reagan has nominated three academic scientists and one industrial scientist to serve on the National Science Board. They are: Charles Hess, dean of the college of agricultural and environmental sciences at the University of California, Davis; John Moore, an associate director of the Hoover Institution; Norman Rasmussen, chairman of the department of nuclear engineering at the Massachusetts Institute of Technology; and Roland Schmitt, a vice president for research and development at the General Electric Co.

Four vacancies remain on the 24-member board. The nominees are subject to Senate approval and serve for 6 years.—***R. Jeffrey Smith***

A New Pot of Money for Plant Sciences

The McKnight Foundation, a wealthy philanthropic organization based in Minneapolis, is about to launch a major program to support basic research and graduate education in plant biology. The program, which will channel about $2 million a year into university research, has been developed at least in part because of concerns that the Department of Agriculture (USDA) is paying insufficient attention to basic science (see p. 1227).

Richard S. Caldecott, dean of biological sciences at the University of Minnesota, who has been helping the McKnight Foundation put the program together, says that "NIH [the National Institutes of Health] has brought about advances in animal science by paying attention to basic biology. USDA hasn't done that in the plant sciences, and they are seriously lagging behind." The McKnight Foundation is committed to supporting the program for 10 years, says the foundation's executive director, Russell Ewald.

The McKnight Foundation, which has assets of $350 million from the family estate of William McKnight, the longtime head of the 3M Corporation, is planning to support about half a dozen interdisciplinary research groups with grants of up to $300,000 a

year. The money will be spent on basic research in plant genetics. The bulk of each grant, according to Caldecott, is expected to support work by pre- and postdoctoral students.

In addition, the foundation will provide ten grants of $35,000 per year for 3 years to support individual scientists conducting basic research in plant biology related to agriculture. The aim is to provide some unrestricted supplemental funds for gifted scientists to extend their current research programs, and to attract scientists working in related areas to spend some time looking into agricultural problems.

The foundation expects to make its first awards next year. Applications for the interdisciplinary research grants close in mid-October and for the individual grants on 1 December.

—Colin Norman

Stephen Bechtel Appointed NAE Chairman

The Bechtel Group, Inc., a multinational engineering and construction firm, continues to expand its Washington power base. Last year, company officials Caspar Weinberger and W. Kenneth Davis were appointed to top posts at the Departments of Energy and Defense, respectively. This year, the company president, George Schultz, was appointed Secretary of State, and the company chairman, Stephen Bechtel, Jr., has now been selected as the first chairman of the National Academy of Engineering.

The academy advises the government on public policy through its membership in the National Research Council (NRC). In recent years, its members have avoided appointing a businessman to the top administrative post, for fear of creating potential conflicts of interest. Yet many apparently felt that some recognition of its predominately industrial membership was called for.

So, in June, they created Bechtel's unpaid new post. The charter permits him to chair meetings of the academy's governing council, which sets overall policy. But it leaves the administrative responsibility in the hands of the president, Courtland Perkins, who formerly taught at Princeton University. Perkins will continue to represent the academy at meetings of the NRC. Two years from now, when Bechtel's term expires, the new chairman will be selected by vote of the entire academy.—***R. Jeffrey Smith***

Cetus Cuts Projects, Lays Off 40 People

The Cetus Corporation, one of the largest and most ambitious of the new breed of biotechnology companies, has laid off 40 people and canceled almost half its research projects. The move is designed to focus the company's operations on projects likely to pay off in the relatively near term.

Unlike many of its smaller competitors, Cetus does not appear to be facing a financial crisis. It raised just over $100 million when it went public in March of last year, and reported a profit of $4.5 million in the fiscal year that ended on 30 June. Nevertheless, the company decided to pull in its horns to avoid financial difficulties in the coming year.

One potential problem is the recent decline in interest rates. Cetus earned $16.7 million in interest last year—more than half its income—by investing the proceeds of its stock offering, but with lower interest rates forecast, those earnings will be reduced. In addition, last May Standard Oil of California pulled out of an $8-million project it was sponsoring at Cetus to produce fructose.

"We took a look at where we should be spending our hard money and decided to concentrate more on unique, high-priced pharmaceuticals and agricultural products," says one senior executive. The company has thus dropped several projects aimed at using biotechnology in industrial processes and in energy production.

Instead, Cetus will focus on three chief areas: the development of diagnostic tests with monoclonal antibodies and DNA probes, the production of agents such as lymphokines that may have a role in cancer therapy, and agricultural biotechnology. The latter work will be carried out mostly at Cetus-Madison, a subsidiary established in Wisconsin in association with University of Wisconsin–Madison geneticist Winston Brill.

Peter Farley, the president of Cetus, has often said that what makes Cetus different from others in the biotechnology business is its focus on high-volume chemical markets. Now, however, Cetus, like others, is aiming more at the low-volume, high-priced pharmaceutical markets.

The 40 people laid off on 7 September included five Ph.D.'s. Fifty other people have also left the company this summer, 30 of them after a performance review in July. The company now employs about 455 people. Even with these staff reductions and slimmed-down research agenda, Cetus officials expect to do no more than break even this fiscal year.

—Colin Norman

Pesticide Data Released

"We've got heaps and heaps and heaps of microfiche data," says Lawrie Mott, a scientist with the Natural Resources Defense Council (NRDC). She was referring to a mass of studies on the environmental and health effects of some widely used pesticides, which have just been released by the chemical industry.

Prior to June, none of the data had been seen by nongovernment experts (*Science*, 6 August, p. 515). Even then, when Mott and others from the environmental community initially got a look at it, they were prevented from taking detailed notes or discussing what they saw with outsiders. Now all but three companies with data of interest to the environmentalists have withdrawn these restrictions too.

The consequence is that a 1978 law ordering the data released to the public has finally taken effect. The industry was able to delay its implementation for 4 years and is still hoping for amendments to the law this year. But in practical terms, only DuPont, Stauffer, and Union Carbide do not want the data on widely used pesticides made public. Twenty other large pesticide producers have given in.

Mott says that some of the data will be sent to academic scientists for peer review, which could lead to requests for regulatory action. Eventually, she says, it may be used to allege inadequacies in the requirements for testing of pesticides for adverse effects.—***R. Jeffrey Smith***

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