care and health care delivery and the responsibility of the scientific community in these areas, saying it had neither the mandate nor the competence to join these issues. Those are the very issues that people on Capitol Hill and in the Administration hoped they would tackle. But, for whatever reason, this was not written into the committee's mandate.

The panel's position on the role or proper mission of NIH is a good example of what they did and did not do. After what can probably be fairly described as a careful analysis of the strengths and weaknesses of NIH, the panel concluded that NIH ought to stick with what it knows best—research—and not get bogged down in the health care delivery business. The panel expressed concern that NIH is already too far into health care delivery in its so-called "demonstration" programs that are gobbling up money at a prodigious rate. With respect to what it called "knowledge application and dissemination activities," which means making the results of research available to patients, the panel recommended that each institute of NIH and ADAMHA should organize a formal structure for these "activities" without spelling out how it should be done. And then, after declaring that research and health care delivery should be kept separate, the panel failed to answer the next crucial question. If NIH should not have federal responsibility for health care delivery (which it probably should not), who should?

Here, the panel is silent, or almost so. As Murphy told *Science*, "I encouraged the panel to stay away from suggesting what a new instrument for health care delivery should be because we have no evidence to support any recommendation." Panelist Paul Marks said, in an interview with *Science*, that the instruments for health care delivery already exist, but we do not use them effectively.

Marks, who as vice president for health sciences at Columbia University's mammoth medical center is daily aware of the problems of the delivery system, believes that delivery should be the province of agencies that reach out at the community level, which NIH does not. "There is no way you can have leverage on the system unless you can control reimbursement," he noted, speaking as an individual to the economics the panel chose to eschew. The country already has the Center for Disease Control, the Health Services Administration, ADAMHA, which is primarily a service and not a research agency, and others. "The critical question," Marks says, "is how these agencies relate to each other, and to Medicare and Medicaid. We suggested in the report, in boldface, that 'Coordination of these federal efforts' is a critical function of the Secretary of Health, Education, and Welfare." However, he conceded that it was not exactly a forceful or lucid way of saying what he had in mind. As for NIH, Marks says, "It is an injustice to the magnitude of the problem to think you can approach problems of health care delivery through NIH. Our report is the best possible assessment of NIH. If it falls short of what some people expected, it may be because NIH isn't the place to solve these greater problems."

Kennedy Plans Hearings

To date, reaction to the panel report largely has been confined to private comment. Public assessment of how the panel did its job is expected to come soon, probably at the end of this month, when Senator Edward M. Kennedy (D–Mass.), who was behind the panel's creation, holds hearings on the report. (The hearings will be the second in a year-long series the senator is planning on the role of NIH. The first, held in early May, dealt with breast cancer therapy.)

Although it is impossible to predict what tack the hearings on the panel report will take, Kennedy staffers say the tone will be set by a speech he delivered on 23 April at Tufts University School of Medicine in Boston. In that address, Kennedy continued the hard line he has been espousing for the past year (*Science*, 20 June 1975).

"I believe we have learned that there is and must always be 'basic research'," he said, ". . . But not all our research is *basic*. . . . Indeed, we may not be able to afford to regard all publicly supported medical research as basic—and to invest along the entire front of expanding medical science—not knowing or trying to intelligently judge where the new important discovery will turn up. I don't believe we have the resources for that—and I don't believe the public has the will to be that generous or the patience to wait that long trusting only in the researchers' faith that all diseases are conquerable in time." (It is almost as though Kennedy were responding to the panel's assertion that, if we spend enough and are patient enough, all disease will be conquered.) "I believe," Kennedy said, "the research community and the public investment in it have reached the point where a careful examination of basic principles is in order."

To the extent that the panel examined basic principles, it found the traditional view to be sound. But it is not certain that the Congress will completely agree.

—BARBARA J. CULLITON

Agricultural Research: Committee Approves Big Boost

A bill that would authorize a $106 million boost in funding for agricultural research and make much of that money available to a broader array of institutions and scientists than ever before has been approved by the House Committee on Agriculture.

The legislation—known as H.R. 11743 or the "Wampler bill," after its chief sponsor, Representative William C. Wampler (R–Va.)—holds the potential for initiating major changes in the structure of the agricultural research establishment. Among its provisions is one that would admit new interest groups to the highest policy-making councils for agricultural research. The bill also seeks to upgrade the importance of agricultural research, a field whose practitioners have felt neglected and ignored in recent years.

Many of the bill's provisions were adapted from a report issued late last year by the National Academy of Sciences' Board on Agriculture and Renewable Resources, chaired by Sylvan H. Wittwer, director of the Michigan State Agricultural Experiment Station. Wittwer met with Wampler and his staff to discuss the framing of the bill, and he testified in support of it at hearings on 17

February. Subsequently the bill was watered down a bit in order to gain approval by the full committee. Although Wittwer had not seen the final version when queried by *Science*, he said it still seems to represent "a very well-balanced program" and is "somewhat beyond my expectations—it goes in the right direction."

Wampler, the ranking Republican on the agriculture committee, represents a district that includes many farmers and a land-grant school, the Virginia Polytechnic Institute (VPI). According to his legislative assistant, Wampler became concerned over budget figures he received in early November which indicated that, over a 9-year period, the Department of Agriculture's expenditures for the food stamp program and other "welfare functions" have been soaring upward while spending for agricultural research has not kept pace with inflation. Then, a few days later, the Academy issued the report of Wittwer's board calling for a major upgrading and reorganization of agricultural research to help avert a world food crisis. That report struck a responsive chord in Wampler. After a long talk with Wittwer, the congressman and his staff drafted a bill, presented it to a large meeting at VPI, revised it somewhat, and then introduced it into the House legislative hopper on 19 December.

The initial version of the bill was sent for comment to all deans of agriculture in the country and to numerous others concerned with agricultural research. The bill was modified and reintroduced on 5 February, by which time Wampler had rounded up 29 cosponsors, including Representative Thomas S. Foley (D–Wash.), chairman of the Agriculture Committee, 26 other members of that committee, and Representative Olin E. Teague (D–Tex.), chairman of the House Science and Technology Committee, which had also held hearings on agricultural research. The bill thus had a broad base of support in both parties and in the agricultural research community.

At 2 days of hearings in February, most witnesses endorsed the legislation, some recommended changes aimed at giving their particular constituency a bigger piece of the action, and only the Department of Agriculture opposed it. The chief grounds for opposition were that the funding levels proposed were too high (they've since been lowered) and that many of the provisions were either unnecessary or would restrict administrative flexibility.

The chief provisions of the bill include:

• Creation of a new National Agricultural Research Policy Advisory Board to advise the Secretary of Agriculture on priorities and strategies for research and education. The board would consist of 22 members drawn from a variety of governmental agencies and private organiza-

House Appropriations Subcommittee Cuts $50 Million

Prospects for significantly increased funding of basic research in the coming fiscal year took a sharp knock when a House Appropriations subcommittee decided on 30 April to cut more than $50 million from the total $802 million requested for the National Science Foundation in President Ford's budget (*Science*, 6 February). Basic research funds would bear the full brunt of the reduction.

Official action by the Appropriations Committee will not come until the full committee takes up the bill containing the NSF appropriation in early June, but the committee generally follows the recommendations of its subcommittees. Indications are that the subcommittee, chaired by Representative Edward P. Boland (D–Mass.), made cuts which, in amount and distribution, were roughly comparable to additions to the NSF budget made by President Ford late in the Administration's budget-making process.

If the subcommittee's figures are sustained through the appropriations process, NSF will get a total of $750 million next year compared with an estimated $731.6 million for the current fiscal year. This would amount roughly to a 2.5 percent increase, far from enough to match the pace of inflation. And it would certainly not give basic research a restorative charge, as the Administration proposed in its budget.

The totals for basic research are $610 million in the Administration request and $554 million in the subcommittee bill.*

Until final action is taken, House Appropriations Committee members and staff are traditionally closemouthed—markup sessions in which final sums are agreed on are still closed to the public, in contrast to the general practice in other committees. The subcommittee's rationale for the drastic cuts will, therefore, not be put on the record until the panel's report is published in June. Observers feel that a combination of factors accounted for the action. The 19 percent boost in basic research funds recommended for NSF may, for example, have appeared to be out of line in a tight budget year, despite the limits to growth on basic research funds in recent years. And some conservative members of the committee may have reacted to the criticism of NSF's education directorate in the past year.

Some observers suggest that the House subcommittee's frugality may have been reinforced this year by consciousness of the new congressional budget process, which requires that Congress set spending limits and stick to them. To some extent, the existence of budget committees in both houses poses competitive threats to the appropriations committees, and the impulse to keep a tight rein on spending may be strongest with readily controlled expenditures such as those for research. In addition, Congress seems more disposed to increase military spending this year than in recent years, and civilian science may suffer in the struggle to keep the deficit down.

The new congressional budget act may have contributed at least indirectly to the NSF cutbacks by the subcommittee. The new law requires that Executive agencies provide full documentation of the budget process on request to Congress and NSF was asked to send the committee not only its final budget submissions but earlier correspondence with the Office of Management and Budget (OMB).

This is significant because NSF, like all federal agencies, went through a budget-squeezing exercise last year to comply with orders by President Ford that the agencies cut funding requests to keep the total federal budget under $395 billion. NSF came up with a slimmed-down request for a total of $768.3 million. President Ford, in the final stages of budget-making, concurred with advice from OMB

*Reportedly, in the three main basic research categories, the figures are as follows: mathematical and physical sciences and engineering, $233 million in the President's request compared to $206 million in the subcommittee bill; astronomical, atmospheric, earth, and ocean sciences, $245 million compared to $232 million; and biological, behavioral, and social sciences, $132 million compared to $116 million.

tions, including the National Academy of Sciences, the National Science Foundation, the Agency for International Development, and environmental and consumer groups, among others. The new board would be in addition to the existing Agricultural Research Policy Advisory Committee, a more narrowly constituted group that serves chiefly as a means of communication between the Agriculture Department and the land-grant schools.

• A new competitive grant program that would be authorized to spend up to $15 million in fiscal year 1977 and up to $150 million over fiscal years 1977–79. This could become the first substantial competitive program in the Department's history; most of its research funds are allocated on a formula basis to institutions qualifying under long-standing legislation. The competitive program had been recommended by the Academy and others as a means to improve the quality of research and to attract proposals from investigators who are not normally considered part of the agricultural research network, perhaps because they work at Harvard or Johns Hopkins or Stanford rather than at a land-grant school. The concept was also strongly endorsed by the White House Office of Management and Budget.

• A new program of grants for "mission-oriented research" to be conducted at the land-grant schools, the state agricultural experiment stations, the Tuskegee Institute, and all other colleges and universities "having demonstrable capacity in agricultural research." Most of these grants, too, might well be awarded on a competitive basis, though that is not specified in the legislation. This provision would give agricultural schools that are not part of the land-grant system a greater opportunity to win support for their mission-oriented research.

• A $91 million boost in funding for traditional agricultural research above the originally proposed levels for fiscal year 1977. Whereas President Ford's budget requested $509 million for such research, the House committee authorized $600 million; part of the increase would go to existing research programs and part to the new mission-oriented grants program. This increase, when coupled with the $15 million authorized for the competitive grants program, would put the total amount authorized some $106 million above the President's budget request.

• Creation of a new assistant secretary to perform such duties as the secretary may direct. Proponents of the bill had originally sought to specify that the new position would be an assistant secretary "for agricultural research," but the Department balked on the grounds that it should be free to organize its hierarchy as it saw fit. Some House staffers believe the Department would, in fact, assign one assistant secretary to research and

Plus from Basic Research Section of NSF Funding Bill

and his science advisers that the science budget, and particularly NSF, needed a special infusion of funds because of several years of subsistence budgets. Ford added about $50 million to the NSF budget, concentrated in basic research because that would have the most direct impact on academic science. The House subcommittee, in effect, excised the President's addition.

Congress approves funding through a two-tier system. Authorization committees set spending ceilings and define agency program activities. Appropriations committees of the House and Senate set actual spending levels for agencies and historically have been the places in Congress where competing demands for funds are reconciled.

The House subcommittee action is therefore only one step in the funding process, but it weighs heavily on the scale. Traditionally, the appropriations committees have been more tightfisted than the authorization committees. In recent years the pattern has been for the Senate Appropriations Committee to provide somewhat higher funding for NSF than the House committee and for the final sum agreed upon in House-Senate conference to fall in between.

The Senate subcommittee which handles NSF funds—chaired by Senator William Proxmire (D–Wis.)—has not yet acted on the NSF measure. (Although Proxmire has been sharply critical of NSF management in recent years, his committee has not been especially parsimonious with the NSF budget.)

In the authorization process, NSF has been faring quite well. On 25 March the House passed by a vote of 350 to 33 an authorization bill providing a total $801 million, just shy of the figure requested by Ford. The bill, incidentally, was passed after an uneventful debate compared to last year's when the House passed an amendment by Representative Robert Bauman (R–Md.) which would have given Congress review power over all NSF grant applications (*Science*, 25 April 1975). The provision was later dropped in House-Senate conference.

The House was put into a mood to pass last year's amendment because of criticism by Representative John B. Conlan (D–Ariz.) of an NSF-supported behavioral science course for elementary school students. This year the bill's managers appeared to be forearmed and easily mustered the votes to defeat amendments by NSF critics, including one by Conlan which would have required NSF to provide, on written request of any member of Congress, any information asked for within 15 days.

The Senate subcommittee which handles the NSF authorization—chaired by Senator Edward M. Kennedy (D–Mass.)—on 29 April reported out a bill authorizing a total of $823.9 million. This is about $24 million higher than the House authorization figure and some $74 million above the sum set by the House Appropriations subcommittee. The bill, whose chief sponsor is Kennedy, not only proposes higher funding, but is much broader-gauge legislation than the House measure. The Kennedy bill, for example, would impose a number of management changes on NSF and also includes provision for an $8 million program of federal assistance to state and regional science policy activities. The program was dropped from the science policy legislation recently passed by both houses (*Science*, 16 April).

Kennedy has a broader concept of what NSF should be and do than is currently held by many in Congress, in the White House, and, in fact, in NSF. Some of his bill's provisions may be regarded as bargaining chips, and in a normal year a fair measure of attention would probably be given to examining Kennedy's ideas for expanding NSF's role and responsibilities. This is not a normal year, however. The uncertainties of the new congressional budget regimen and the surgery performed by the House Appropriations subcommittee on NSF funding are likely to keep concern focused on the budgetary bottom line.—JOHN WALSH

education, but other sources are uncertain. Currently, research falls under the jurisdiction of Robert W. Long, assistant secretary for conservation, research, and education, a banker who has drawn criticism from the research community. Another provision—that the Department appoint a senior scientist—was deleted entirely. Both actions represent a blow to those who hoped to put a scientific voice at the highest levels of the Department. Wittwer said he is "disappointed" about this aspect of the bill. However, the bill does call for a new staff (presumably with scientific expertise) to help the secretary coordinate research.

The dollar amounts authorized in the bill are substantially less than Wampler originally proposed, but Wampler acknowledged that his original numbers were "not very realistic in view of the fiscal situation and the budgetary situation." He said that the $150 million authorized for competitive grants over a 3-year period is "about what I thought realistically we could achieve." Meanwhile, Wittwer suggested that the dollar amounts allocated for competitive grants are about as much as could be absorbed effectively.

Research administrators in the Agriculture Department seemed cautiously pleased with the bill. T. W. Edminster, head of the Agricultural Research Service, interpreted the bill to mean that "somebody's beginning to recognize that agricultural research is an important national issue and should begin to have some higher priorities assigned to it than in the past." House staffers report that, even though the Department formally opposed the bill, the agricultural research people in the Department were quietly for it.

Future prospects for the bill remain uncertain. The dollar amounts authorized are said to be approved by the Office of Management and Budget, partly because the boosts for research would probably be offset by cuts in other agriculture programs. The bill is given a good chance of passing the House, but it would then have to be considered by the Senate, which has not yet begun to grapple with the issue.

Moreover, this bill would simply *authorize* the new programs and set maximum spending levels for them. The money to operate them would then have to be appropriated in separate bills handled by the regular appropriations committees. So there will be much opportunity to change the shape or scope of a bill that at this point appears to offer the possibility of a significant change in agricultural research.—PHILIP M. BOFFEY

Scientists' Rights: Academy Adopts "Affirmation of Freedom"

The National Academy of Sciences (NAS), responding to a "ground swell" of concern about the rights of scientists living under repressive governments, voted at its annual meeting in late April to circulate an "affirmation of freedom of inquiry and expression" that it hopes will be adopted by individual scientists around the world. It is the first time that the Academy, which generally prefers private diplomacy to public proclamations on this subject, has issued such a general statement of principles. In addition, the Academy has issued a new set of guidelines which say it will no longer "eschew" public declarations.

The affirmation was conceived by NAS president Philip Handler and foreign secretary George Hammond as a means of enhancing the Academy's effectiveness in speaking on behalf of scientists whose rights have been violated. It is hoped that the affirmation, which is to be signed by individuals and not by institutions or scientific societies, will encourage scientists from all nations to renew their commitment to principles of intellectual freedom. Just how the affirmation will be used, once signed copies are on file at the Academy, which will be the repository for them, is as yet uncertain. One obvious gesture—publishing the names of the signatories—is probably ruled out by the fact that all copies of the affirmation that are circulated to scientists abroad will contain a space for them to ask that their names never be released. It is, as one NAS member noted, a sad commentary on the state of the world that in many places the mere signing of a statement such as this could lead to recriminations.

One of the most difficult things to assess in the human rights battle is the value of public declarations. Inasmuch as the Academy has been particularly conservative on this score, some members believe the affirmation is significant. One member aptly characterized the affirma-

An Affirmation of Freedom of Inquiry and Expression

I hereby affirm my dedication to the following principles:

. . . That the search for knowledge and understanding of the physical universe and of the living things that inhabit it should be conducted under conditions of intellectual freedom, without religious, political or ideological restriction.

. . . That all discoveries and ideas should be disseminated and may be challenged without such restriction.

. . . That freedom of inquiry and dissemination of ideas require that those so engaged be free to search where their inquiry leads, free to travel and free to publish their findings without political censorship and without fear of retribution in consequence of unpopularity of their conclusions. Those who challenge existing theory must be protected from retaliatory reactions.

. . . That freedom of inquiry and expression is fostered by personal freedom of those who inquire and challenge, seek and discover.

. . . That the preservation and extension of personal freedom are dependent on all of us, individually and collectively, supporting and working for application of the principles enunciated in the United Nations Universal Declaration of Human Rights and upholding a universal belief in the worth and dignity of each human being.

Date _____ Signed _____

*Copies of the affirmation can be obtained from the Commission on International Relations, NAS, 2101 Constitution Avenue, NW, Washington, D.C. 20418.