

Among them were Richard Schweiker (R-Pa.) and Edward Kennedy (D-Mass.) in the Senate, and Paul Rogers (D-Fla.) and Tim Lee Carter (R-Ky.) in the House. These four, and probably others, will introduce bills in early 1976 to implement the recommendations of the commission and all seem confident that such a bill will be adopted. Meanwhile, a technical amendment recently adopted by the Congress would extend the life of the National

Commission on Diabetes until the advisory board is established. This bill was expected to be signed by President Ford after the Christmas holidays.

The only problem that might snag the implementation of the commission's recommendations is the provision for establishment of the advisory board in the office of the assistant secretary. Congress has not yet received the report of the President's Biomedical Research Panel, which

is studying the problems involved in the administration of such research. This panel is expected to make specific recommendations about the establishment of advisory boards. Thus the creation of a diabetes advisory board prior to the receipt of that report, scheduled for 30 April, might be considered premature. It may be summer at the earliest, then, before Congress takes any action on the report.

—THOMAS H. MAUGH II

NSF: Trying to Cope with Congressional Pressure for Public Participation

Imagine the National Science Foundation (NSF) giving money to some Nader-like public interest group that wants to purchase scientific expertise to back its position on some controversial issue of public policy. Senator Edward M. Kennedy (D-Mass.) imagines such a situation and, by law, he and his colleagues in Congress have asked NSF officials to try to imagine it too. They have until 9 February to tell Congress what they think of this and other aspects of a plan to create a "Science for Citizens" program within the Foundation. At present, the program is little more than an idea, the brainchild of Kennedy and his staff. NSF has been instructed to give it substance, but its heart is not in it.

Nevertheless, during December, NSF officials held seven public meetings throughout the country at which they heard more than 200 persons tell them what a Science for Citizens program should be. Afterwards, an NSF officer volunteered that one option the Foundation could take, after contemplating all it had heard, would be to tell Congress that it does not want to create a Science for Citizens program at all. But, he conceded, that would be unlikely. However, the fact that NSF officials are talking about such an option, even wistfully, is an indication of what they think about becoming involved with groups of people whom they describe as being "not our usual constituency." Even so, congressional observers credit NSF with making a "good faith effort" to gather a range of opinion at the hearings.

As if pressure to establish a Science for Citizens program were not enough, Congress—in this case, particularly the House—has been pushing NSF to open its internal decision-making machinery to wider public participation (*Science*, 17 Oc-

tober 1975). In a recently completed paper on that subject, called "Public participation, findings and plans," NSF reports it will broaden its horizons in 1976, when its governing body, the National Science Board, takes to the hustings to hold a series of public hearings similar to those held to elicit ideas about the Science for Citizens program. Foundation officials call the plan to have "regional forums" on a number of topics the "principal" item in its efforts to broaden the base of public involvement in agency policy-making. However, its "target audiences" for this endeavor are groups that already are largely within the science community. The Foundation's report also promises an expansion of the agency's advisory committees, but only to include individuals from groups which "comprise the Nation's science base," not members of the general public. The gist of NSF's response to Congress seems to be summed up in its own conclusion to a section titled "New initiatives and policies." It says, "... the majority of the Foundation's future policies and activities will consist of a continuing development of the very substantial body of techniques and practices which has been built up over the years."

Resistance to public participation in the policy-making of science agencies is not hard to understand—becoming involved with potentially contrary outsiders is bound to be alarming to persons who are not used to it—but it may be fruitless if Kennedy and others in Congress continue to press for the citizen's right to get his opinion in. The notion that the public should somehow "participate" in the formulation of science policy is a natural extension of a movement that began in the early 1960's, when welfare rights groups

insisted on a role for themselves in the establishment and operation of programs for the poor. During the past decade, students demanded, and in many places got, seats on curriculum committees and the right to evaluate their teachers. The environmental movement took hold and showed people they could have some influence on the world around them. Hospitalized patients joined the ranks of groups demanding their "rights." And the idea that researchers experimenting on human beings should first submit their protocols to a review committee and then get their subjects' consent was accepted.

It is not a very great leap to go from there to the proposition that citizens have a right to be involved in other kinds of policy-making, and scientists in all disciplines are now confronted by public interest groups that want some say in the kinds of research that is being done. They have an ally in Kennedy.

During the past couple of years, Kennedy's interest in the public participation movement has been stimulated by a number of events and individuals. His staff alludes to two topics in particular—offshore oil drilling and the potential dangers of experimentation with recombinant DNA—as issues that encouraged his feelings that the public needs to be more informed about and involved in decision-making. With regard to the creation of a Science for Citizens program in NSF, Kennedy staffers acknowledge that Frank von Hippel of the Center for Environmental Studies at Princeton University played an important role in the Senator's thinking about the program. Von Hippel, who has become an activist for public participation, spoke in favor of the program in testimony before the Senate and in a subsequent meeting with Jack T. Sanderson and other NSF officials responsible for getting Science for Citizens going. Among other things, von Hippel urged the establishment of a fellowship program for scientists who want to spend some time working with a public interest group of their own choosing, and the creation of a journal of

(Continued on page 318)

NEWS AND COMMENT

(Continued from page 274)

public interest science. He was, he recalls, "upset" by NSF's "negative" reaction to the meeting but adds that friends have told him that the Foundation is now taking a more positive approach.

Kennedy's original intention was to legislate the Science for Citizens program in NSF's 1976 authorization bill, but he ran into trouble when the House was not willing to agree to a proposed \$5 million budget for a new program whose nature was vague, to say the least. But the House was willing to go along with a requirement that the NSF "prepare a comprehensive plan for the establishment and conduct" of such a program. Furthermore, Congress decreed that "This plan is to be prepared with full public participation. . . ." Hence, the seven open hearings.

Although Congress was not quite sure specifically how it wanted a Science for Citizens program to operate, it did give NSF some general ideas about what to be thinking about, and NSF passed them along in a "Dear Colleague" letter it sent to hundreds of scientists and citizens' groups throughout the country. The tentative purposes of the program, as Congress spelled them out, are three: (i) to improve public understanding of public policy issues; (ii) to encourage scientists, engineers, and students to participate in activities aimed at the resolution of public policy issues; and (iii) to enable nonprofit citizens' public interest groups to acquire technical expertise to assist them in dealing with scientific and technological aspects of public policy issues.

Anybody wanting to testify at one of NSF's hearings on how the program should be put together had to submit a written statement before getting on the agenda but was allowed to do so as late as the afternoon before the hearing. Even so, some public interest groups complained that the requirement for a written statement is, as the National Council for Public Assessment of Technology put it, "precisely the type of restriction that inhibits citizen groups from participation in government proceedings." Nevertheless, scores of them testified.

According to NSF officials and individuals from the Association of Science-Technology Centers (ASTEC), which handled the arrangements for the hearings, some of the testimony was very helpful and some of it missed the point. There was a lot of testimony to the effect that NSF should educate the public about science, with no emphasis, stated or implied, on science policy, which is the point of it all. Thus, one NSF official concluded that "an awful lot of the public can't read"—an observation that

did not inspire in him enthusiasm for public participation in NSF's business.

Although NSF officials insist that they are still "boiling down" the information they have gathered and, therefore, cannot say what they will put in their report to Congress, they are willing to make a few general statements about what they've got. According to Harvey Averch, acting assistant director of the Directorate for Science Education, it is highly unlikely that NSF will go to Congress with a tightly drawn plan. Rather, he says, it "will probably recommend options and say to Congress, 'Let's talk about this.'"

Averch is not sure that NSF will want to launch a program to fund public interest groups and gives a couple of reasons. One is the "real concern" within the Foundation and among Science Board members about dealing with a new and unpredictable constituency. Another is the matter of being caught in a position of the government, through NSF, funding an organization that might turn around and sue some other part of the government. "It is not NSF's business to take sides, directly or indirectly, on policy issues," Averch declares.

An alternative to direct funding of public interest groups that is being considered as an option to present to Congress would be to establish and maintain a national register of scientists willing to volunteer their expertise to moneyless citizens groups, much as lawyers do pro bono work. "We might keep names of such scientists but we would not certify them in any way, just list them."

The Foundation is already somewhat involved in supporting shows for Public Television (the NOVA series is a prominent example) and it might propose expanding support to encourage shows dealing explicitly with policy rather than the substance of science.

Another option that might be proposed is the establishment of regional science centers designed to identify science-related issues of importance to the community and to provide expert information on them. There was a good deal of testimony recommending such centers, with speakers suggesting everything from the creation of a few centers to one in every congressional district. Several individuals suggested that science museums and other science centers that are part of ASTEC would be a sensible place to start.

Whatever emerges, it is a safe bet that any NSF Science for Citizens effort will be programmed for a modest beginning to allow the Foundation time to get the hang of what one official, with measured understatement, said would be a "new adventure for us."—BARBARA J. CULLITON

RESEARCH NEWS

(Continued from page 278)

involved in specific antigen recognition. For example, William Paul of NIAID has proposed such a model in which Ia antigens and Ir gene products, although combined in a single polypeptide chain, constitute separate regions with their own individual functions. The model is based on observations by Paul, Shevach, and Ira Green, also of NIAID, that the Ia and Ir genes appear to be linked but nevertheless distinct genes, and that the products of the two types of genes are closely associated on cell surfaces. This model is analogous to that for immunoglobulin structure and function.

The implications of the research on Ir genes are not just theoretical; these studies may also contribute to a better understanding of human disease. A number of investigators have shown associations between certain human diseases and specific histocompatibility antigens. Most of the diseases involve defective or inappropriate immune responses, and many are thought to be of autoimmune origin; that is, they may be caused by an attack of the immune system on the body's own tissues. They include ankylosing spondylitis, Reiter's disease, psoriasis, Graves' disease, multiple sclerosis, and ragweed hayfever.

Ankylosing spondylitis is a disease related to rheumatoid arthritis in which the spine becomes inflamed and may eventually become rigid and immobile. The association between this condition and the B27 histocompatibility antigen is particularly strong. According to Derrick Brewerton of Westminster Hospital in London and Lee Schlosstein of Wadsworth Veterans Administration Hospital in Los Angeles, more than 90 percent of patients with the disease carry the antigen whereas only 7 percent of the general population does.

Although human Ir genes have not been as thoroughly studied and mapped as those of the mouse, they are also known to be closely linked to histocompatibility antigens. Thus, many investigators think that the association between diseases and histocompatibility antigens may actually represent an association between the disease and Ir genes. The presence or absence of genes controlling the capacity to make immune responses could obviously have a great deal to do with disease susceptibility.

—JEAN L. MARX

Additional Readings

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