According to Marye Anne Fox, Professor of Chemistry at the University of Texas, member of the National Science Board (NSB) and member of the Special Commission on the Future of the National Science Foundation (NSB), Vannevar Bush noted in The Endless Frontier that the best way for a federal science agency to help industry is "to support basic research and develop scientific talent." Recently, Fox asked if anything had really changed?

This is the basic question facing the 15 member commission co-chaired by William Danforth, President of Washington University of St. Louis, and Robert Galvin, Executive Chairman of Motorola and Chairman of Sematech, that held its first of three public meetings on September 17. (For a full listing of the commission's members, see Update, September 14.)

Some science policy-makers have declared that things have changed enough to take another look at how the NSF operates, particularly in its relations with universities, industry and other actors in the science policy arena. Frank Press, President of the National Academy of Sciences, whose April speech was summarized by Danforth for the commission, argues that we are in the "post Vannevar Bush, post cold-war" era of science policy, where global economic competition now sets the agenda.

Walter Massey, Director of NSF, in introductory remarks, cited this "dramatically altered environment" as the context for the commission, whose task is to help "develop a vision and a strategy to guide the Foundation." In a concept paper presented to the NSF in August, Massey asserted that the Foundation, in adapting to the changing times, "build on NSF's traditional mission and exercise new leadership across a broader spectrum of research areas...that would be integrated with ongoing activities and closely aligned with industry and other government agencies."

The new climate for science was also the focus of co-chair Danforth's remarks. He noted that in the 42 years of NSF's life such research achievements as lasers, DNA research, the polio vaccine, and supercomputers have transformed and provided products "that have changed everything." He claimed that an emerging consensus is developing that federal action is necessary to help with product development. How NSF will respond, Danforth asked?

The View from Industry

Invited witness John McTague, Vice President for Technical Affairs at the Ford Motor Company, former Acting Presidential Science Adviser, and current member of the President's Council of Advisers on Science and Technology (PCAST), presented the view from industry. McTague also concentrated on the changed environment that Danforth had discussed, and noted the disturbing political trend that many Americans have lost confidence in the future. The establishment of regional trading blocs and the globalization of corporations are other new conditions in the global economy McTague mentioned in his remarks.

How should NSF relate to industry? McTague suggested caution. One cannot provide a single uniform response; industry is too diverse, he said. He mentioned the differences between emerging (e.g. computers) and basic industries (e.g. auto manufacturing), and criticized the lack of a basic industry representative on the commission. McTague added that industry is also changing by becoming more multi-dimensional. Some companies have become totally self-contained, while others are involved in joint and multiple ventures and developing strategic alliances to cooperate in order to compete, he said. Yet one thing is clear, McTague stated, a "stagnating" situation exists with...
respect to industrial research and development, especially basic research.

How should NSF respond? "Don't throw away your culture, Don't emulate Japan," McTague warned. Industry needs people -- scientists and managers -- and the regeneration of knowledge, he said. The U.S., he declared, has the lead in the rapid generation of new knowledge and a superb higher education system: "These should remain fixed points for NSF." McTague also warned that "non-obvious research areas must be protected and nurtured." Finally, he urged that NSF should not directly fund industrial research, but should experiment with modes of interaction and avoid excess overlap with mission agencies.

The View from the University

Another invited witness, Harold Shapiro, President of Princeton University and also a member of PCAST, offered the view from the university community. He urged caution in contemplating change, saying "adaptive and thoughtful change is the key."

Attempting to explain what is occurring in universities, Shapiro reminded the commission that these institutions are also a diverse lot. He suggested that large research universities are in an era of transition. Shapiro said that the public's faith in these institutions has been shaken because of incidents of scientific fraud, the injudicious use of resources, and the political correctness debate. He noted that research universities have been challenged to devote more time to teaching, multiculturalism, and lifetime learning. Shapiro added that doctoral programs also have problems: too much time to degree, underrepresentation of women and minorities, and in some disciplines, American students. Faculty are exasperated by many of these issues and see their futures threatened by insufficient resources, he told the commission. In addition to all these problems, Shapiro noted his frustration that the costs of sustaining quality have risen faster than revenues.

How does continued support for research fit into all this? Shapiro suggested that the "ivory tower" portrait of university research is "a serious distortion of the history of science." Basic research scientists have always been influenced by the world around them, stated Shapiro. He urged the commission to work toward a consensus of what science can do and what NSF and universities working together can do. Never forget, Shapiro said, that a major asset for NSF is its relationship with the scientific community.

NSF as a Unique Agency

Commission member Donna Shalala, Chancellor of the University of Wisconsin at Madison, argued that NSF is a unique agency committed to basic research, stating that its mission is to take the long-term view, unlike the policy research shop at the Department of Housing and Urban Development which she led in the late 1970s, where research focused on short-term specific policy questions. Lewis Branscomb, former chairman of the NSB and now Professor of Public Service at the Kennedy School of Harvard University, warned about earlier attempts to take NSF down the applied research path, citing the discredited Research Applied to National Needs (RANN) program. Yet Branscomb acknowledged NSF's need to work with industry and state governments. Branscomb, along with commission member Peter Magrath, President of the National Association of State Universities and Land Grant Colleges, acknowledged the nervousness in the scientific community accompanying the discussions of changing NSF.

Percy Pierre, Vice President for Research at Michigan State University, suggested that "not everything is up for grabs," in the commission's review of NSF. Certain things will be preserved, he declared. He would like NSF to enhance relations between universities and industry by focusing on leveraging commitments, similar to the Agriculture Department, the Defense Department, and NASA. Pierre also remarked that it would be difficult for NSF to play a lead role in U.S. science policy, as
some commission members sought, without increased resources.

Peter Eisenberger, Director of the Princeton Materials Institute, advised the commissioners to be wary of economic competitiveness as the rationale for scientific research. He reminded those in attendance that enhancing the "quality of life" is the proper role of government and that research has a role to play in this. He specifically cited the social sciences as important for their research on the technological impact on human behavior.

What Next?

Also discussed was how the commission would operate. The commissioners agreed that the staff, led by NSF Policy and Planning Director Charles Brownstein, would prepare a series of questions for the Commission to explore during its deliberations. Although there are only two public meetings left (October 16 and November 7) before the Commission is to report to the NSB at its November 20 meeting, NSF agreed to facilitate commissioner interaction away from the formal meetings.

Massey made clear that NSF's long standing partnership with the university community and the commitment to a broad range of high quality research must be maintained. Yet it appears his concept paper option to "exercise new leadership across a broader spectrum of research areas" remains the key discussion point for the commission.

HOUSE SCIENCE COMMITTEE ISSUES REPORT ON HEALTH OF RESEARCH

Another example of the current ferment in U.S. science and technology policy surfaced on September 15 when the House Science, Space and Technology Committee, chaired by Rep. George Brown (D-CA), issued a "Report of the Task Force on the Health of Research." The major recommendation of the report: "Funding for federal science and technology (S&T) efforts should be explicitly tied to increased relevance to national goals and demonstrable societal benefit." The Task Force report is a follow-up to an earlier Office of Technology Assessment study on Federally Funded Research.

Current science policy, according to the committee report, assumes a linear relationship between basic research and societal benefit, with increases in science funding leading to a better standard of living and greater productivity. Chairman Brown, in remarks coinciding with the release of the report, claims, that "this model is simplistic and often false." Rather, what is needed according to Brown, is a research agenda viewed in terms of national and societal needs. He also decried the boundaries between scientific disciplines, between federal agencies, between Congressional Committees, between basic and applied research as arbitrary and historical that "make it difficult to devise new types of linkages between the research that we perform and the societal goals we desire."

The committee report calls on Congress to strengthen government-wide priority setting for S&T funding to relieve the current stress on the research system in an era of scarce resources. The report concedes that researchers are best equipped to set priorities within their individual disciplines, however, "choices between disciplines... often cannot be made on the basis of scientific merit, because there is no clear framework for comparison." Brown would use the Federal Coordinating Council on Science, Engineering and Technology (FCCSET) process to strengthen the link between the research agenda and the goals of society.

The Task Force also urges Congress to use legislative mandates and other measures to require performance assessment of federally funded research programs, and to tie past performance to future funding. This would allow Congress to better monitor the progress of research programs toward particular goals once the programs are underway. However, the committee warns that any assessment process should be designed to reduce the bureaucratic responsibilities of the research community and the implementation of evaluation and assessment should be gradual and flexible.

Brown also acknowledged the current efforts of the National Institutes of Health and the National Science Foundation to "consider science policy from new perspectives." He expressed the hope that the strategic plans being devised by NIH and NSF "will be driven by national goals, rather than the jurisdictional concerns of individual agencies." (For further insight into Brown's thinking and the role of the social and behavioral sciences in this, see Box on page)

The Science Subcommittee, chaired by Rep. Rick Boucher (D-VA), will gather reaction to the premises and recommendations of the Task Force.
Salaries and allocate its funds for FY 1993. The Directorate was appropriated $479 million, $14 million above FY 1992 and $24 million below last year's level, and slightly below request. The conference report includes language which the conferees want no later than December ($0.6 million) the administration's request. The Salaries and Expenses line received $111 million, $2 million above FY 1992 and $24 million below the request. The conference report includes language that should be rooted in the pursuit of explicit, long-term social goals, such as zero population growth, reduced generation of waste, reduced consumption of non-renewable resources, less armed conflict, less dependence on material goods as gauge of wealth or success and greater opportunity for self-realization for all human beings. A new contract will measure the value of research and innovation not by number of publications or citations or patents, but by progress toward these specific goals. A new contract will focus not just on research at the frontiers of knowledge. A new contract will require an increased emphasis on exploring humankind's relationship with the surrounding world, through research in the oft-maligned disciplines of the social and interdisciplinary sciences.

For research and related activities the conferees accepted the Senate mark of $1.859 billion. This is $16 million below the appropriated level of FY 1992 (this does not include adjustments) and $263 million below the request.

The conferees agreed to temporarily set aside three directives from the Senate report that would have set funding floors on manufacturing, high performance computing, and interdisciplinary research on the environment and seriously constrained NSF's flexibility in determining how to spend its research funds (See Update August 10, 1992). The conferees commend the establishment of the NSF commission (see earlier story) and note that it "should have the chance to proceed and complete its work by the end of November."

However, the report also states, "that it is apparent that [NSF] must in fact change the fundamental emphasis it places on various research initiatives."

NSF is also warned by the conferees that "should their concerns [about tying future NSF research plans to industrial interests] not be addressed, the Committee reserves the right to revisit these issues in the operating plan." The plan, which the conferees want no later than December 15, 1992, indicates how the Foundation intends to allocate its funds for FY 1993.

The Education and Human Resources Directorate was appropriated $479 million, $14 million above last year's level, and slightly below ($0.6 million) the administration's request. The Salaries and Expenses line received $111 million, $2 million above FY 1992 and $24 million below the request. The conference report includes language acknowledging a General Accounting Office report that declared there is nothing to prevent the NSF from moving to the Northern Virginia suburbs next year. Yet, the conference committee states that the $16 million for the move, could be better spent on research.

The conferees accepted the $50 million figure for facilities and instrumentation proposed by the Senate, a $17 million increase over FY 1992. All of the increase will go to facilities modernization. The $55 million included in the Senate bill for defense conversion traineeships did not survive the conference.

BROWN ON FUTURE OF RESEARCH

Writing in the September 9th Los Angeles Times, Rep. George Brown (D-CA), Chairman of the House Committee on Science, Space, and Technology, called for the setting of a new research agenda:

"Society needs to negotiate a new contract with the scientific community. This contract must be rooted in the pursuit of explicit, long-term social goals, such as zero population growth, reduced generation of waste, reduced consumption of non-renewable resources, less armed conflict, less dependence on material goods as gauge of wealth or success and greater opportunity for self-realization for all human beings. A new contract will measure the value of research and innovation not by number of publications or citations or patents, but by progress toward these specific goals. A new contract will focus not just on research at the frontiers of knowledge. A new contract will require an increased emphasis on exploring humankind's relationship with the surrounding world, through research in the oft-maligned disciplines of the social and interdisciplinary sciences."

On Friday, September 18, by a vote of 82 to 13, the Senate passed the Labor, Health and Human Services, Education, and Related Agencies appropriations bill (H.R. 5677). The bill provides $241 billion: $179 billion for mandatory programs, and $62 billion for discretionary spending. The latter represents a 2 percent increase over FY 1992 levels.

In an effort to pass the bill without major incident, and to maximize the likelihood that the President would sign it, Senate leaders agreed to remove the controversial provision that would have lifted the Administration's ban on abortion counseling in federally funded family planning programs. In addition, champions of the bill agreed
to accept an amendment by Senator Jesse Helms (R-NC) that prohibits the use of Drug-Free Schools and Communities Act funds "to provide homosexual support, outreach, or educational services to elementary or secondary school students." This language is interpreted by AIDS activists to include AIDS education efforts that mention homosexual sex as risky behavior. Whether the amendment is retained or deleted from the appropriations bill is now a matter for the conference committee, expected to convene next week.

One further amendment of particular note to the social science community was passed. Introduced by Pete Domenici (R-NM), this amendment increased the Senate's funding for NIMH by $21 million, bringing the appropriation to $596 million, the same as the President's request.

Other highlights of the bill and the report include:

National Institutes of Health

Overall, NIH received $1.95 billion, $47 million below the House's figure, and $59 million below the President's request. As in past years, the Senate appropriations subcommittee report accompanying the bill mentions the importance of the health and behavior agenda of NIH institutes, including some not noted for their attention to social and behavioral science perspectives. For example, the Committee noted the value of behavioral research at the National Cancer Institute (NCI), and mentioned its strong support for NCI's new program evaluating the effect of psychosocial counseling on quality of life and survival among cancer patients. The Committee also emphasized behavioral science initiatives at the National Institute of Environmental Health Sciences (NIEHS), stating that "prevention and protection efforts in environmental health can also be improved by a better understanding of public perceptions, community implementation of guidelines, and individual and family lifestyle. Research on attitude formation and change regarding risk and uncertainty will be necessary to programs that require public involvement for successful implementation."

The National Institute on Aging (NIA) received $405.2 million, $3 million above the House, $2 million below the President's request, and $22 million above the FY 1992 level. Alzheimer's Disease continues to be a top priority for the Senate, but the Committee also noted its support of the Health and Retirement Survey, and other NIA programs on the demography of aging.

The Senate appropriated $534.1 million to the National Institute on Child Health and Human Development (NICHD), the same as the House, $11 million below the President's request, and $14 million above FY 1992 spending. New initiatives of particular interest to the Committee include those on the psychological and behavioral processes of development during what is now called "middle childhood," ages 5 to 11; youth violence prevention; and normal development among ethnic minority children. In addition, the Committee reiterated its support of NICHD's multi-site infant child care study.

The Senate included appropriations for the three ADAMHA institutes slated to move to NIH October 1. The appropriation for the National Institute on Alcoholism and Alcohol Abuse (NIAAA) was $180.2 million, $5.8 million over the House, $746,000 below the President's request, and $8.1 million above the FY 1992 level. The Committee encouraged NIAAA to support more research focusing on alcohol abuse and related problems among women.

The National Institute on Drug Abuse (NIDA) received $410.5 million, $6 million above the House, $10 million below the President's request, and $10.7 million above FY 1992 levels. The Committee urged NIDA to support research that could "demonstrate the effectiveness of centrally coordinated substance abuse training, service, and research focused on women, children, minorities, and other underserved populations such as people living in rural areas."

As mentioned above, the National Institute on Mental Health (NIMH), originally received $575 million from the Committee, but had that boosted with the Domenici amendment to $596 million. The Committee noted in the report the emerging problem of the "greying of behavioral sciences at NIMH," that is, the lack of young investigators in the behavioral sciences, and directed NIMH to "prepare a specific plan to strengthen its support for young behavioral science researchers and forward a report on this plan to the Committee by February 1, 1993." Furthermore, the Committee used the opportunity to scold NIMH for not having submitted a plan, requested last year, for implementing a behavioral science research centers program, and stated that it was "deeply concerned that the agency is continuing to sidestep this issue
and is resisting congressional mandates to strengthen its support for behavioral science research."

**HIV/AIDS Research and Programs** throughout the Public Health Service received $2 billion; of that $877 million was targeted to NIH and $248 million to the former ADAMHA. Although the Committee report mentions progress in AIDS research related to vaccine and drug development, this year there is no mention of the importance of behavioral research, including the ill-fated social surveys sponsored by NICHD.

**International Education**

The Senate provided $36 million for domestic programs under Title VI, $2 million above FY 1992 levels, and $2.3 million above the House level. Part of the increase will go for a new national resource center on Africa at a consortia of Historically Black Colleges and Universities. Fulbright-Hays overseas programs received $10.9 million, same as the House, and a $4.9 million increase over FY 1992 earmarked for a new student exchange program between the U.S. and the European community. This new program will probably be housed in the Fund for the Improvement of Postsecondary Education (FIPSE) and its budget.

The Foreign Language and Area Studies Fellowships were cut 1 percent from FY 1992 levels by both the House and Senate to $12.9 million. The program to purchase Foreign Periodicals received $950,000 from both the House and the Senate, rejecting the administration's attempt to eliminate the program, and $450,000 increase over last year.

**Graduate Education**

The Senate once again refused to go along with the administration's attempt to consolidate graduate student support programs into one large program. It did, however, join the House in providing a 1 percent reduction in the Patricia Roberts Harris Fellowships ($17.4 million), Harris Public Service Fellowships ($3.2 million), Javits Fellowships ($7.9 million), and Graduate Assistance in Areas of National Need ($27.2 million), and Legal Training for the Disadvantaged ($3 million).

The Senate also rejected the administration's attempt to eliminate the Law School Clinical Experience Program. It provided $10 million, a $2 million boost over the House allowance and last year's level. Part of the increase is for a national conference to explain the changes in the program as a result of the reauthorization of the Higher Education Act.

**Education Research and Statistics**

For Research the Senate allotted $74.7 million, an increase of $4.4 million over the House and $3.7 million over FY 1992. Field initiated studies received $966,000, same as the House and the same as last year. It rejected the administration's request for significant increases to commence the SMARTLINE program designed to electronically connect researchers and practitioners in the educational community. Money was provided to develop a national network to connect the regional educational laboratories.

The National Center for Educational Statistics took a big hit from the Senate. NCES received $38.7 million, $24.3 million below the House level, and $8.6 million below the FY 1992 level. Although the committee report offers no explanation for this action, there appears to be some dissatisfaction with Pell Grant data which led to an enormous shortfall of funds in FY 1992.

The National Assessment of Education Progress (NAEP) received $29.9 million, the same as FY 1992 and $0.3 million above the House allocation. The administration had asked for a $35 million increase for NAEP as it planned a major expansion of the scope and frequency of the examinations. Congress has clearly indicated it wants more assessments of the assessment before moving forward.

**Labor**

The Bureau of Labor Statistics (BLS) received $278.7 million from the Senate, $2.5 million more than the House appropriation and a $10.6 million increase over last year's level. The Committee report includes language expecting the Bureau to continue administering the National Longitudinal Survey utilizing Job Training Partnership Act (JTPA) discretionary funds provided through the Employment and Training Administration. Research and evaluation under JTPA received $9.9 million, the same as the House and a 1 percent reduction over FY 1992 levels.
OERI REAUTHORIZATION PASSES
HOUSE: SENATE ACTION NEEDED

On September 22 the House approved by a voice vote legislation (HR 4014) to reauthorize the Department of Education's Office of Educational Research and Improvement (OERI).

The legislation, authored by Rep. Major Owens (D-NY), chair of the House Subcommittee on Select Education, was billed as a compromise between his earlier version of HR 4014, OERI legislation introduced in the Senate, and provisions advocated by the Administration. To complete the reauthorization process, the Senate must act on the bill before adjournment, which may occur as early as October 3. At this writing, it is uncertain whether the bill will be placed on the Senate calendar.

The Owens compromise creates an 18 member OERI Board of Governors to exercise broad policy oversight for the agency. Members of the Board would be appointed by the Secretary, with seven appointments being researchers nominated by the National Academy of Sciences in consultation with The American Educational Research Association. Members would serve five year terms. Under the bill, the Board would be charged with developing a long-term research agenda for OERI. Research would be structured around five institutes: Student Achievement, At-Risk, Governance, Early Childhood, and Postsecondary.

In remarks on the House floor, Owens urged the Senate to act swiftly on reauthorization, and said that his bill would help provide meaningful support for educational reform efforts. "With this bill... no longer will OERI be a faint and flickering light; it will be a powerful and reliable beacon for reform and change in education," Owens told his colleagues.

For more detailed information on issues relating to OERI reauthorization, see the January 27, March 23, and April 6 issues of Update.

SOURCES OF RESEARCH SUPPORT:
NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

COSSA provides this information as a service and encourages readers to contact the agency for further information or application materials. Additional application guidelines and restrictions may apply.

Human Learning and Behavior Branch

The Human Learning and Behavior Branch (HLB) of the Center for Research for Mothers and Children (CRMC) of the National Institute of Child Health and Human Development (NICHD) invites research grant applications to develop new knowledge in the area of treatment effectiveness for learning disabled children, between the ages of six and twelve, who display primary deficits in oral and written language abilities including disabilities in listening, speaking, reading, and written language skills.

Application Procedure: Applications are available from the Office of Grants Inquiries, Division of Research Grants, NIH, Westwood Building, Rm. 449, Bethesda, MD 20892, (301) 496-7441.

Eligible Applicants: Applications may be submitted by domestic public and private, non-profit, and for-profit organizations such as universities, colleges, hospitals, schools, laboratories, units of State and local governments, and eligible agencies of the Federal Government. Women and minority investigators are encouraged to apply.

Funding Mechanism: The NICHD has set aside $600,000 for direct costs for the first year of support. It is anticipated that two awards will be made.

Deadlines: The deadline for receipt of application is January 7, 1993.

Contact: G. Reid Lyon, Ph.D., Human Learning and Behavior Branch, Center for Research for Mothers and Children, NICHD, 9000 Rockville Pike, Bethesda, MD 20892, (301) 496-6591.
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