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NSF, HUD APPROPRIATIONS COMPLETED IN CONGRESS

An appropriations conference committee on HUD-Independent Agencies met last week to determine the final shape of a compromise appropriations bill. The appropriations for both the National Science Foundation and the Office of Policy Development and Research (PD&R) in the Department of Housing and Urban Development (HUD) are part of the bill.

The National Science Foundation (NSF) emerged from the conference with funding for research and related activities at a higher level than could be expected if a strict compromise had been put into effect. Although the administration requested $1,250.0 million for NSF research, the House appropriated $1,242.4 million and the Senate appropriated $1,214.0 million. In conference, the higher level of $1,242.4 was selected rather than a compromise figure. In the conference process, the Appropriations Committee also reaffirmed its traditional reluctance to force its own priorities on the Foundation's research program. The $5 million that the House Appropriations Committee added to the budget of the Biological, Behavioral and Social Science (BBS) Directorate was dropped and full responsibility for determining the distribution of FY 1984

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NSF, HUD APPROPRIATIONS COMPLETED IN CONGRESS (cont.)

research funds was given to the Foundation. The Conference did, however, maintain the provision that would allow the Director of the Foundation to transfer $5 million from Science Education funds to BBS for studies of learning and cognition.

Congress increased the research budget of the Department of Housing and Urban Development (HUD) for the first time in several years. The conference committee raised the budget for PD&R from the administration's request of $18 million to $19 million. This was a compromise between the Senate figure of $21 million and the House level of $15 million. COSSA presented the only testimony given in the Senate on this issue. According to congressional staff, Sen. Jake Garn (R-UT), Chairman of the Senate Appropriations Subcommittee on HUD-Independent Agencies, increased the PD&R budget because he felt that HUD should know more about its policy initiatives through evaluations of current programs. In COSSA testimony presented to Sen. Garn's Committee, Dr. David Puryear (Johns Hopkins University) emphasized this need by saying, "No private sector firm with billions of dollars in annual spending and billions more in owned assets would devote such a tiny share to monitoring the efficiency and effectiveness of its efforts."

The appropriation reported out of the conference committee was approved by both House and Senate on June 29 and has been sent to the White House for the President's signature.

CONGRESSIONAL RECESS

The Congress began its Independence Day District Work Period (Recess) on Friday, July 1, and will return to Washington on July 11.

SENATE BILL WOULD GRANT AUTONOMY TO NARS

Sen. Thomas F. Eagleton (D-MO) has introduced legislation that would grant independence to the National Archives and Records Service (NARS), which is now administered by the General Services Administration (GSA). The bill, S. 905, has 30 co-sponsors and is expected to be the subject of hearings in late July held by the Senate Government Affairs Committee. A majority of the Committee's members have co-sponsored the legislation. The bill would establish NARS as an independent agency of the federal government.

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WHERE WE ARE IN THE APPROPRIATIONS PROCESS

The Congress has only three months left to complete appropriation legislation before the 1984 fiscal year begins on October 1. Although the full House has already voted on nine of the thirteen appropriations bills, the Senate still has ten to consider. To date, only three appropriations bills have been sent to the President for his signature. Agencies whose appropriations do not receive final approval by the Congress and the President before October 1 will be given authority to continue their operations through an emergency omnibus spending bill called a continuing resolution.

Before an appropriations bill is acted on by the House or Senate, the Appropriations Subcommittee that has jurisdiction over the bill holds hearings at which administration and agency officials and representatives of the public testify. This spring, COSSA testified 12 times in support of the budgets of federal research programs (see COSSA Washington Update, June 3, 1983, for a complete list of COSSA testimony). Following the completion of hearings, Appropriations subcommittees draw up and approve each of the 13 appropriations bills. The full Appropriations Committee then marks up (i.e., amends, adds, or deletes provisions of) each subcommittee's bill and reports it (i.e., transmits it officially along with a narrative explaining the Committee's rationale for its decisions) to the House or Senate leadership, who schedule the legislation for floor action. After both the House and Senate pass versions of each appropriations bill, a conference committee from both houses resolves differences between the two bills and submits a reconciled version of the legislation to both the House and Senate for approval. The bill is then sent to the President for his signature.

Below is an update on the budgets of several agencies that support research in the social and behavioral sciences:

National Science Foundation (NSF) - The House and Senate conference committee completed work on the NSF appropriation on June 23. (See "NSF, HUD Appropriations Completed in Congress" for description of the bill's NSF provisions.)

House and Urban Development (HUD), Office of Policy Development and Research - The budget of this agency was approved in the same bill that appropriated funds for NSF. (See "NSF, HUD Appropriations Completed in Congress" for description of HUD research provisions.)

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WHERE WE ARE IN THE APPROPRIATIONS PROCESS (cont.)

National Endowment for the Humanities (NEH) - The House approved an FY 1984 budget for NEH of $150 million on June 28. The appropriation provides $38 million more than was proposed by the Administration and $20 million more than the NEH budget for FY 1983. The Senate Appropriations Committee has not yet begun work on this bill.

Department of Transportation (DOT) - The House approved level funding for FY 1984 for the University Research Program of the Urban Mass Transportation Administration (UMTA) and for DOT's Office of University Research on June 22. The budget for the Office of University Research is twice that recommended by the administration. The Senate Appropriations Committee has not yet begun marking up its legislation.

National Institute of Justice (NIJ) and Bureau of Justice Statistics (BJS) - The House Appropriations Subcommittee reported its bill on June 3. The legislation, which is awaiting floor action, sets aside $40.5 million for the Department of Justice Research and Statistics Program, which funds NIJ and BJS. This figure is $3.4 million more than the appropriation for FY 1983. The Senate Appropriations Committee has not yet begun work on its bill.

National Archives and Records Service (NARS) - The House voted down the Treasury/Postal Service Appropriations bill on June 8 because of an anti-abortion amendment added to the bill on the floor. A new version will be considered soon. The bill provides $93.1 million for NARS, $6 million more than the President requested. This figure includes $3 million for the National Historical Publications and Records Commission and $3 million for special preservation projects. The Senate Appropriations Committee has not yet begun work on its bill.

Neither the House nor Senate Appropriations Subcommittee on Labor, Health and Human Services, and Education has yet begun work on its appropriation bill. Agencies funded by this legislation include the National Institute on Aging (NIA), National Institute on Child Health and Human Development (NICHD), National Institute of Mental Health (NIMH), National Institute on Drug Abuse (NIDA), National Institute on Alcoholism and Alcohol Abuse (NIAAA), National Institute of Education (NIE), Fund for the Improvement of Postsecondary Education (FIPSE), National Center for Health Services Research (NCHSR), Bureau of Labor Statistics (BLS), and the research budget of the Department of Labor Employment and Training Administration (ETA).

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NIE HOLDS PUBLIC HEARINGS ON CONTRACT COMPETITION

The National Institute of Education (NIE) held hearings in Washington and nine other cities in June on the competition for National R & D Centers and Regional Laboratories. The hearings, which were open for testimony from the public, were intended to provide an opportunity for researchers to advise NIE on the educational needs and research priorities of their regions, on the most appropriate institutional characteristics for the laboratories and centers, and on NIE plans for the laboratory and center competition. COSSA testimony emphasized the importance of NIE support for education research across the broad spectrum of the social and behavioral science disciplines and the need for scientific peer review and consultation at all stages of the laboratories and centers competition.

At present, over 50 percent of the NIE annual budget goes to the laboratories and centers. They have been funded through long term contracts that will terminate in 1984 and 1985. The public hearings held this month by NIE are the first in a series of planning activities designed by NIE to broaden the competition for new laboratories and centers. At present, NIE is forming five study groups to look more closely at the testimony and to recommend specific areas of concentration for the laboratory and center competition.

For a copy of COSSA testimony, contact the COSSA office (1755 Massachusetts Avenue, NW, Suite 300, Washington, DC 20036; 202/234-5703).

OMB ANNOUNCES CHIEF STATISTICIAN

Christopher DeMuth, Administrator for Information and Regulatory Affairs, Office of Management and Budget, announced last week that Dorothy M. Tella has been appointed Chief Statistician of the United States. Ms. Tella will also head the Statistical Policy office (sic) in OMB. Because she has not been deeply involved in statistical policy issues, Ms. Tella is not well known among statisticians and users of federal statistics.

SUMMER READING

Enclosed is an article from the New York Times (June 28, 1983) that deals with the increasing complexity of scientific research in the various disciplines. It discusses in particular the problems faced by researchers in the social and behavioral sciences. (See Attachment 1.)

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SOURCES OF RESEARCH SUPPORT: DEPARTMENT OF HEALTH AND HUMAN SERVICES

COSSA provides this information as a service and encourages readers to contact the agency rather than COSSA for more information.

National Center for Health Services Research (NCHSR)

NCHSR is the primary source of federal support for research on problems related to the quality and delivery of health services.

FY 1983 Budget: NCHSR's budget for both extra- and intramural research is $16.7 million for FY 1983.

Purpose of Program: NCHSR's program was established "...to create new knowledge and better understanding of the processes by which health care services are made available, and how they might be provided more efficiently, more effectively, and at lower cost."

Funding Mechanism: Although NCHSR has authority to fund both grants and contracts, they are primarily funding investigator-initiated grants at this time due to budget restrictions.

Disciplines Supported: Because of the multidisciplinary nature of health services research, NCHSR supports very few grants with single principal investigators. Investigators supported by NCHSR come from almost all the social and behavioral science disciplines and also include lawyers and physicians.

Restrictions on Awards: Awards are limited to five years. NCHSR encourages active monitoring by staff of grant progress.

Review Process: Applicants for NCHSR funds submit applications to the National Institutes of Health (NIH) Division of Research Grants (DRG) which assigns individual grants to appropriate NCHSR study sections.

Success Ratio: Study sections, in general, approve 20 percent of the applications submitted. However, because of budget limitations, only between 25 to 30 percent of approved applications are actually funded.

Contact: Although prospective applicants are encouraged to communicate with NCHSR before submitting applications, they are requested to do so only in writing:

Dr. Norman Weissman, Director
Division of Extramural Research
National Center for Health Services Research
Mailstop 318, No. 2
5600 Fishers Lane
Rockville, MD 20857

Attachment 1

Is Science Stymied By Today's Complexity?

By WILLIAM J. BROAD

IT is easy to lose patience with science today. The questions are pressing: How dangerous is dioxin? What about low-level radiation? When will that monstrous earthquake strike California? And why can't we predict the weather better?

But the evidence, especially on health matters, is often described as "inconclusive," forcing scientists to base their points of view almost as much on intuition as science.

Instead of answers, there is controversy embodying so many shades of gray that only ambiguity is left.

When historians and philosophers of science listen to the cacophony, some conclude that science may be incapable of solving all these problems any time soon.

Many questions seem to defy the scientific method, an approach at its best when it examines straightforward relationships: If variable A is manipulated, what does it do to variable B? Such procedures can, of course, be very difficult in their own ways, but in experimental terms they are clean, elegant.

"In general the simple problems have all been solved," said David Hull, a philosopher at the University of Wisconsin who is president-elect of the Philosophy of Science Association. "The physicists came across some simple problems quite early. But in the social sciences and other areas there may not be any simple problems."

With the aid of Newton's laws of gravitational attraction, for instance, ground controllers can predict the path of a planetary probe with incredible accuracy. They do this by calculating — one at a time — gravitational tugs from each of the passing planets until the probe speeds beyond the edge of the solar system. It is a routine bit of mathematics. A much more difficult task is to calculate how two or three tugs work at once, since it adds variables to the problem.

The unknowns can grow until riddles are impossibly knotty. Because of the turbulent and fickle whorls of the earth's atmosphere, for instance, scientists for centuries have struggled in vain to predict the weather with precision.

This spectrum of explanatory power — from simple problems to those impossibly complex — has resulted in nicknames for fields of inquiry. "Hard" sciences such as astronomy, physics and chemistry are said to yield precise answers, whereas "soft" ones such as sociology and economics admit a greater degree of uncertainty. Biology and medicine fall somewhere in between.

These facts of scientific life sometimes lead to mild jealousy. All too often, according to Keith Steward Thomson, a biologist who is dean of the graduate school at Yale University, biologists and social scientists suffer what he calls "physics envy," or a yearning for greater precision.

Despite the spectrum of complexity, the aim throughout the sciences is pragmatic — to tease unambiguous truths from the chaos of nature. Messy questions are thus often left to bedevil future scientists.

"The spectacle of a scientist locked in combat with the forces of ignorance is not an inspiring one if, in the outcome, the scientist is routed," writes Sir Peter Medawar, a Nobel Prize winner in medicine. "That is why so many of the most important biological problems have not yet appeared on the agenda of practical research."

Early Victories Were Simple

This pragmatism is evident from the very start of the scientific revolution. All along, of course, pressing questions have been posed in wide-ranging areas of endeavor. But the first victories came with problems that, from a mathematical point of view, were extremely simple.

In the 17th century the father of the revolution, Isaac Newton, watched an apple fall and wondered if the same force reached to the moon. He subsequently showed how gravity acts between any two heavenly bodies.

In the 18th century scientists successfully tackled more complex problems, involving many interactions instead of just those between two or three bodies. More triumphs came, especially in chemistry, when John Dalton discovered the laws of chemical combination.

A cutting edge in the 19th century was biology, a science that successfully investigated phenomena still more complex. Pasteur developed the germ theory of disease; Darwin hit upon his theory of evolution, and Mendel discovered the laws of inheritance.

Man Is the Hardest Subject

In our own century the force of the attack has expanded to bear upon the most complicated subject of all — the culture and mentality of man. Yet results are sometimes mixed. Eleven distinguished psychologists were recently asked to describe what each considered "the most significant work in psychology over the last decade and a half." Unfortunately, no two could agree on what stood out.

So too, practitioners of economics, sociology and anthropology often argue over what constitutes outstanding work. "Just contrast the quarrels over Margaret Mead with the situation of an early astronomer who could say, 'Just wait until next year and we'll see who's right,'" Donald Campbell, a past president of the American Psychological Association, said. "A lunar eclipse is hard to argue with. It's more difficult to achieve consensus in the social sciences."

Although the roots of science are pragmatic, in the 20th century there has been an explosion of urgent and complex questions that cannot wait for better methods of attack. One is the geological fate of California. Yet even with the aid of computer technology, according to Dr. Allan Lindh, a California geophysicist with the United States Geological Survey, predicting earthquakes is "like using results at a race track to play the stock market. You might win, but you'd better not bet the farm on it."

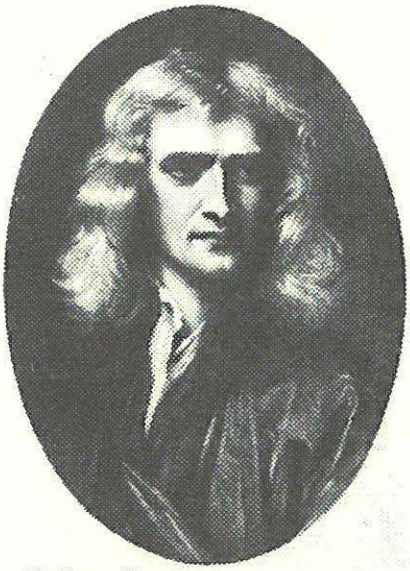
Perhaps most difficult of all are the delicate questions of human health and how it might be harmed by dioxin, the pill, food additives or low-level radiation. The challenge is not only to define "health" in the first place but also to look for effects throughout a lifetime, possibly decades after exposure. William D. Ruckelshaus, the new head of the Environmental Protection Agency, recently said that cleaning up toxic dumps — a multibillion-dollar task — was easy compared to measuring the health risks.

Intrinsic Limits May Exist

Unfortunately, the passage of time or the application of new technology such as bigger computers might not always aid the development of fledging sciences. There may be intrinsic limits. "Will the social sciences evolve to the model of accurate prediction like in physics or astronomy?" asked Christoper Jencks, a professor of sociology at Northwestern University. "I doubt it's going to happen. There are too many variables."

One escape from complexity is to pose a question on a simple level — to move down the hierarchy of matter to a place where interactions are more fundamental. Such an escape is known as reduction. For centuries biologists failed in their attempts to explain how life is transmitted, for example. But when the attack finally came on a chemical level, with the discovery 30 years ago of the molecular blueprint known as DNA, or deoxyribonucleic acid, it yielded an explosion of answers.

In a similar way, psychology often slides down the ladder in search of



Sir Isaac Newton

hard and fast results. Freud and his followers said depression was a result of anger turned inward — a view that spawned decades of debate. In contrast, the search is now on for genes that contribute to depression.

A controversial reduction that has recently been proposed is known as sociobiology, which interprets human behavior in terms of evolutionary biology rather than social interaction. Siblings care for each other, in this view, because such concern helps insure the survival of a similar set of genes, not because of some culturally encouraged form of altruism.

But some scientists object to the reductionist escape from complexity on the ground that important things can get ignored. In biology, according to Dr. Thomson, "some people got tired of studying how a cathedral works by looking at only the bricks." A more synthetic approach, he says, is now casting light on such riddles as "the song of a warbler, the mating of newts or even the self-regulating processes of organ regeneration."

Physics Model May Not Apply

Other scientists say the urge to reduce can be myopic because it tries to force all sciences into the predictive pattern of physics. "Complex historial sciences cannot fulfill the predictive model, but that does not make them any less scientific," said Stephen Jay Gould, a paleontologist at Harvard University. "How could an evolutionary theorist hope to predict the course of future events when evolutionary direction depends so critically upon environmental changes — and when environmental change itself is so inordinately complex, partly random, and in any case not the subject matter of evolutionary theory?"

In short, there is often no escape from complexity. Newton, the man who set the standard for all who followed, believed nature was ultimately opaque to human understanding. He discovered laws that described the action of gravity, but he brushed aside the knotty question of why bodies attract each other in the first place. It was just too complex. So too, science throughout history has been profoundly pragmatic. It is always on the prowl for questions it can answer. As Arthur Koestler put it: "If politics is the art of the possible, research is surely the art of the soluble."