AAAS Symposia

Annual Meeting: Washington, D.C.

Institutional Patterns and Societal R&D

Several programs in this year's annual meeting will be concerned with the institutional impacts of federal policies and the application of science and technology to societal problems through new or altered institutions. One will examine the impacts on U.S. universities of federal research funding and related policies. A second will be concerned primarily with the underlying assumptions and methodology of societal problem-solving institutions. A third will be concerned with the difficulties of, and approaches to, research as applied to national needs.

"Federal R&D and Universities: Impacts of Funding and Policy on Institutional Patterns," arranged by Rodney W. Nichols of the Rockefeller University and scheduled for 27 December in the Shoreham Hotel, will reappraise selected impacts on U.S. universities of federal research funding and related federal policies.

The situation leading to this reappraisal is well known. By the end of the 1960's—as research funding became scarce—universities faced serious questions about support for research and graduate education which were related to national security, health, nuclear energy, space, and other federal goals, as well as the institutional implications of greater dependence upon federal funding.

This symposium will first review and evaluate the experiences of three campuses (Princeton, Stanford, and Massachusetts Institute of Technology) which have reevaluated their research trends and policies, partly because of institutional debates about military support of academic research. Second, it will review the consequences of a few federal policy initiatives that have affected most major universities. Finally, it will relate these issues to the broader questions about institutional independence and the mechanisms of accountability between universities and the public through federal funding.

"Institutions for the Application of Science to Social Needs," arranged by John C. McKinney of Duke University, is scheduled for 28 December in the Shoreham Hotel. This symposium will examine some of the underlying assumptions concerning the direct applicability of scientific information and technological innovation to societal problem-solving, discuss some recent cases of socially oriented R&D efforts, and develop some tentative recommendations regarding the use of these new mechanisms.

Several points are likely to be made at the outset. The extent to which science and social science can become relevant, and effective, is dependent largely upon our ability to devise new institutions, which are genuinely structurally different from present institutions. Such new institutions will be problem-oriented rather than discipline-oriented and they must necessarily contain a "critical mass" coalition of natural and social scientific and engineering talent. The longer time-frame between initiating new mechanisms, or institutions, and the assessment of their effectiveness, as well as the unquestionable importance of the problem, implies that close attention to the appropriate development of these new "means" is required.

The symposium will include an examination of the interrelationships among science, social science, and society's problems. A paper will be presented by Roger E. Levian of the Rand Corporation on the design and refinement of the newly established National Institute of Education, from which will be drawn some conclusions regarding organizing the government to support social R&D. Henry Riecken of the University of Pennsylvania will conduct a discussion of some alternative approaches to social innovation involving a multiplicity of smaller-scale experimental efforts—so designed as to help increase understanding of the innovative process and its consequences. A presentation will be given by Amitai Etzioni of the Center for Policy Research about the electronic town hall as a case study in engineering and social science collaboration, and a paper by George R. Herbert of the Research Triangle Institute will discuss the problems and prospects in redirecting a research institute toward social goals.

"Research Applied to National Needs," arranged by Herbert Carter of the University of Arizona and Raymond L. Bisplinghoff of the National Science Foundation, will be presented on 29 December in the Shoreham Hotel. This symposium will be concerned with various problems of, and approaches to, research as applied to national needs. It will concentrate on the progress of the National Science Foundation's RANN program during its first year and a half of existence, together with discussions on the problems and opportunities of university interdisciplinary research. Papers will be given on important examples of research focused on national needs.

In addition, an open forum for meeting participants to make suggestions regarding the RANN program is being arranged by Joseph F. Coates of the National Science Foundation. This forum will be held on the morning of 30 December in the Shoreham Hotel.

Thus, this year's meeting offers, through the above programs and others, an unprecedented array of programs dealing with important issues for the future functioning of our traditional institutions of learning and research, as well as mechanisms for the more effective application of science to society's needs.

Social Experimentation and Public Policy

A new technique is emerging for improving social policy—actual experimentation with new social policies on a fairly large scale before they are undertaken. For example, experiments have been used to estimate the impact of new income maintenance systems on labor force participation and earnings, and to test the hypothesis that school systems could improve the performance of children by contracting with private firms for instruction. Other experiments now in the design phase include testing the impact of the terms of health insurance on utilization of health services, and evaluating the effect of housing allowances on the supply and quality of housing.

The symposium "Is Social Experimentation a Practical Way to Develop Social Programs?" (27 December, Washington Hilton), arranged by Fred-

erick Mosteller of Harvard University and Alice M. Rivlin of the Brookings Institution, will address problems that have arisen in the design and execution of particular experiments and discuss the promises and limitations of experimentation as an aid to policy-making.

The morning session will include presentations on the following subjects: a critical assessment of the income maintenance experiments—especially those in Gary, Denver, and Seattle; lessons of the performance contracting experiments; and problems in the housing allowance supply experiment.

The afternoon session will consider the broader questions of social experimentation and public policy, moral and ethical issues of experimenting with people, and rigor versus feasibility in attempting experiments in education.

With increasing frequency social scientists are asked to and seek to justify their research in terms of its relevance in the public policy-making process. Yet there exists an apparent conflict between the requirements for formulating and conducting good social research and the requirements for formulating and conducting good public policy.

A program arranged by Harvey M. Sapolsky of M.I.T. will focus on "Public Policy and Social Science." It will explore the extent of the conflict from a variety of disciplinary and policy area perspectives and feature a major address on the subject by James Coleman of Johns Hopkins University.

Supporting and Managing Technological Development

Two programs in this year's meeting will deal with aspects of the management of technology: "The Stimulation and Control of Technology by Government," arranged by Joel D. Goldhar of Rensselaer Polytechnic Institute and Don E. Kash of the University of Oklahoma, and "Federal Support of Commercially Relevant R&D," arranged by John M. Evans, Jr., of the National Bureau of Standards and Jordan D. Lewis of Battelle Development Corporation. These complementary programs are scheduled for 28 and 29 December, respectively.

The first will examine the interactions between government and technology in two often conflicting areas: (i) stimulation of technology to increase innovation and enhance economic growth and (ii) assessment and control of the impacts of new technology and the redirection of technology towards new social goals.

The morning panel will involve speakers who have studied the process of technological innovations from diverse disciplinary or professional viewpoints. One focus for discussion will be those "leverage points" at which public policy intervention could be effectively exercised in enhancing technological development. The experimental R&D Incentives Programs of the National Science Foundation and the National Bureau of Standards will also be discussed.

The afternoon panel on the control of technology will include three speakers who will discuss "The Development of Policy Alternative," "Anti-Intellectualism and Other Obstacles to the Control of Technology," and "NEPA: Proliferating Paperwork or Plotting a New Direction."

The second symposium in this series will assess present efforts and consider the proper role of government in encouraging commercially relevant R&D. In the existing international environment of vigorous competition and the domestic situation of continual inflation and economic controls, the subject of federal support of commercially relevant R&D continues to receive much attention from policy-makers at all levels of government, industry, and universities. The newest facet of government involvement with industries and universities—the Experimental Technology Incentives Programs at NBS and NSF—will be examined as well as experiences in other countries and available options for new actions.

This symposium will also include the Scientific Research Society of America's Procter Prize award. This year Lewis M. Branscomb will receive the prize and deliver the Annual Address.

Space Technology: EROS, ERTS, and the Space Shuttle

Space technology and space research occupy a significant portion of this year's annual meeting program. This is fitting because important changes in direction of the space program have recently been made, and future redirection is probably in the offing.

The first of these is a 1-day symposium entitled "EROS and ERTS: Spacecraft and Aircraft Remote Sensing of the Environment," arranged by William A. Fisher of the U.S. Geological Survey and scheduled for 27 December. This symposium should be of interest to engineers involved in the development of aircraft and spacecraft remote-sensing systems and also to earth scientists.

The symposium will review the engineering characteristics of the ERTS spacecraft, the methodology applied to the evaluation of results, the early results of the NASA Earth Resources Technology Satellite (ERTS) experiment, the Earth Resources Observation Systems (EROS) program of the Department of the Interior, related programs in other agencies, and training and education needs and programs.

Of fundamental importance to these matters and a host of other space application programs is the 2-day symposium "Space Shuttle Payloads," arranged by George W. Morgenthaler of Martin Marietta Corporation and scheduled for 27 and 28 December at the Washington Hilton.

The program will have sessions on: the space-shuttle system and its capability, including flight profiles and payload capabilities; science payloads for the shuttle, including astronomy, atmospheric studies, and biomedical experiments; applications payloads for the shuttle, including remote sensing, communications, navigation, geodesy, and power generations; engineering development possibilities, including manufacturing and materials processing in a low-g situation, production of biologicals, and testing of space subsystems in a space environment; and projections about space operations, including refurbishing spent satellites, tending remote platforms, and assembly of large orbital stations and interplanetary vehicles.

The next-to-last session of this comprehensive program will consider several cost-effectiveness studies of the space shuttle including the Mathematica studies, the Rand studies, and the GAO studies.

The final session will be a panel discussion on the space-shuttle contributions to national goals, particularly technological, economic, political, and defense goals.