AAAS Symposia

Annual Meeting: Philadelphia

28–29 December

National Science Foundation: Student-Originated Studies

This symposium will feature student representatives reporting findings of 103 projects that were conducted during 1971. These projects, sponsored by the National Science Foundation, were the first to be supported under the Foundation's recently established Student-Originated Studies (SOS) Program. The two basic objectives of the SOS Program are (i) to encourage college students to express in productive ways their concern for the environmental well-being of our nation and (ii) to provide support for groups of college and university students who can demonstrate their readiness to assume increased responsibility for their own educational development.

Certain major features were shared by all projects. As the title suggests, the projects were student-originated, student-planned, and student-directed, and were carried out by a student group under the leadership of their chosen student project director. Associated with each project as project adviser was a faculty member of the host institution, a 4-year college or university. The student groups directed their attention to a problem or set of problems related to the environment—physical, biological, or social—on a full-time basis for an uninterrupted period of 10 to 12 weeks. The projects stressed interdisciplinary approaches to understanding problems and searching for solutions and, accordingly, were manned by students drawn from several fields. In presenting proposals, moreover, the students were asked to submit evidence that their findings might be useful to local planners or to other civic or governmental bodies that are concerned with environmental quality on the local, state, or regional level.

At the Philadelphia meeting, each project will be represented by one or more student participants who will report the findings. Simultaneous reporting sessions are planned, each organized around one of four general themes: water quality, natural resource utilization, urban problems, and general environmental studies. A general session for presentation of selected reports drawn from each of the four simultaneous meetings has also been scheduled.

Student groups submitted 560 proposals requesting some $8.2 million last year, indicating the strength of their response to the SOS Program. The National Science Foundation was able to support 103 projects with a total funding of about $1.5 million. In addition, 185 certificates of honorable mention were issued.

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29 December

The Role of Mathematics in the Development of Science

What is mathematics? To what extent is it intuitional? How is it related to logic? What is science? Is it essentially empirical or rational? How, in turn, is it related to mathematics? Evidently the answers to these questions are largely dependent upon our philosophical conceptions of mathematics and of science. Insights, however, can be obtained by observing the role of mathematics in the development of different sciences, for example, physical science, biological science, social science—not to mention the very development of mathematics itself.

A number of distinguished mathematicians and scientists will share their own views of this complex problem. The keynote speaker will be Salomon Bochner (Rice Institute) who wrote in the preface of his book *The Role of Mathematics in the Rise of Science*, "What makes mathematics so effective when it enters science is a mystery of mysteries." Einstein remarked in 1921, "Can human reason without experience, discover by pure thinking the properties of real things?" The major addresses will be given by Harold Grad (New York University); Mark Kac (Rockefeller University); Oskar Morgenstern (New York University); J. Barkley Rosser (University of Wisconsin); and Eugene P. Wigner (Princeton University). Panelists will be H. J. Bremerman (University of California, Berkeley); Freeman J. Dyson (Institute for Advanced Study, Princeton); Lawrence R. Klein (University of Pennsylvania); C. C. Li (University of Pittsburgh); David D. McFarland (University of Chicago); Ernest Nagel (Columbia University); Dudley Shapere (University of Chicago); F. Joachim Weyl (Hunter College); and A. S. Wightman (Princeton University).

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27–30 December

Environmental Sciences and International Development

The symposium will bring together information on environmental problems now faced by developing countries. Such problems have resulted from the failure of science and modern technology to cope with development in the context of the natural environments of those countries. It has been adequately documented that the application of unsuitable technologies has resulted in the failure of many development programs to meet their stated objectives. A massive new effort is needed to meet these needs—to synthesize an environmentally sound approach to "development." Some, perhaps a major part, of the