

Machine Programming of Large Meetings To Be Tested

Better planning of large scientific meetings through the use of data-processing techniques may result from a recent National Science Foundation grant. The Federation of American Societies for Experimental Biology, Washington, D.C., will undertake to develop and test machine methods of scheduling the thousands of scientific papers read at large meetings of professional and academic societies. Resulting techniques are expected to greatly reduce the magnitude and complexity of the scheduling process. With the very large number of papers now submitted to most scientific meetings, and with the limited time available for programing, it has become increasingly difficult to build good sessions and to avoid conflicts of interest.

A trial of machine methods will be made in programing the federation's 1960 meeting, to be held 11-15 April in Chicago, Ill. Both the mechanical and the traditional systems will be used, and the two resulting programs will be compared and evaluated. At the 1959 meeting, 2383 10-minute papers were scheduled for 235 separate sessions held during a 5-day period.

Under the trial machine system, authors will be given coding sheets and will classify the subject matter of their papers. These papers will then be automatically grouped and assigned to sections. The subject classification assigned by authors and punched on cards may also serve as a subject index.

Industrial Laboratory Directory Being Prepared by NAS—NRC

The National Academy of Sciences-National Research Council reports that the eleventh edition of its directory, *Industrial Research Laboratories of the United States*, is now being compiled and will be published in mid-1960. The volume, published periodically since 1921, is expected to contain descriptions of approximately 6000 scientific and technological laboratories, many of them established since the publication of the previous edition in 1956.

More than 25,000 questionnaires are being mailed by the Academy-Research Council in search of appropriate data for inclusion in the volume. A cut-off date of 1 February 1960 has been

set for their incorporation in the 11th edition; all responses arriving after that date will be held for a subsequent edition.

As in the past, the directory will list only nongovernment laboratories devoted to industrial research. For the purposes of this directory, however, "research" will include industrial development work on processes and products as well as fundamental and applied research. In addition, laboratories concerned primarily with routine testing and control, but conducting research activities, will be listed.

Each entry will contain the name and location of the laboratory, the types of research performed, the availability of services to others, and the names and number of professionally and technically trained personnel of the scientific research staff. The number of nonprofessional employees will also be given.

There is no charge for listing in the directory. Any research organization which has not received a questionnaire by 5 November but which wishes to be included in the new edition should inform Walter M. Whitlow, Editor, *Industrial Research Laboratories*, National Academy of Sciences-National Research Council, 2101 Constitution Ave., NW, Washington 25, D.C.

Diploma Mills Damage United States Prestige

Diploma mills calling themselves colleges or universities and conferring "quick-way" degrees, usually mail-order, are taking in an estimated \$75 million annually and heavily damaging United States prestige abroad. With perhaps as many as 750,000 "students" annually, many of them in other countries, the bogus educational institutions are causing foreigners to question the integrity and quality of all American education. Many United States officials abroad have reported the problem and appealed for a solution.

In response, the American Council on Education, through its Committee on Education and International Affairs, has published *American Degree Mills*, a 100-page study of the problem by Robert H. Reid. Reid reports finding at least 200 degree mills operating in 37 states. He divides them into two main categories: (i) American institutions located in the United States and offering study by correspondence at home and

abroad, which concentrate heavily on foreign nationals as prospective students (this is the category with which the study is chiefly concerned); and (ii) American-chartered or American-sponsored institutions located on foreign soil that offer residential or correspondence education to foreign nationals and to some Americans. A third, but less prevalent, type is the American institution located in the United States which offers "patently inadequate" residential study to foreign students who come here on student visas.

In considering possible solutions to the degree-mill problem, the report reviews the efforts of many agencies, public and private, to find an answer. A major factor, the report says, is the fact that:

"The United States unlike most other countries of the world, has no ministry of education. State laws chartering institutions of higher education are not uniform and are actually quite lax in controlling educational malpractice. Furthermore since there is no single yardstick for accreditation, this system is especially difficult to explain to nationals of other countries, who simply cannot appreciate that a country can have educational standards unless there is a federal agency controlling such matters."

Recommendations Offered

In its section on conclusions and recommendations the report declares that the solution demands better legal machinery than now exists, and proposes the following steps.

1) There is a basic need for concerted action by the states leading to the adoption of uniform legislation that sets minimum standards for the licensing and operation of all institutions of higher education—with special control of degree-granting privileges. Responsibility for administering such standards should be vested in the appropriate state educational authority. Such action should go beyond the passage of the law. It must provide sufficient staff and resources to ensure periodic review and continuous enforcement of these standards. The means for carrying out this first step exists. The Council of State Governments has indicated not only a keen interest in the problem but also a willingness to proceed immediately toward preparing and recommending uniform state legislation.

2) Even if all the states do pass satisfactory statutes, the need for supplementary federal legislation is apparent, for there will still be loopholes in interstate and international control. It is therefore recommended that, at an appropriate time after the Council of State Governments has had a chance to act, an effort be made to interest a congressional committee in arranging hearings on the need for supplementary federal legislation. A major advantage of such hearings is that they would place on the record, with full congressional immunity, a large body of factual information about these "colleges"—their names and locations, their proprietors and activities—and examples of the serious international implications of their operations. Complete exposure would give additional ammunition to all agencies now frustrated by this problem.

Documentation Unit Formed

The National Academy of Sciences—National Research Council has announced the establishment of a new Office of Documentation, under the directorship of Karl F. Heumann, previously research director at Chemical Abstracts Service. The office will operate in three major areas: it will (i) give advice to the National Science Foundation and others as appropriate in broad problems of scientific documentation; (ii) provide a mechanism for the participation of United States scientists and documentalists in international documentation activities; and (iii) give advice and assistance to the several activities of the Academy—Research Council in the documentation problems they encounter from time to time.

It is anticipated that an advisory panel of scientists and documentalists will be set up to assist the office. Close liaison will be maintained with the NSF's Office of Science Information Service and with other interested groups.

Grants, Fellowships, and Awards

Foreign. The Institute of International Education is reminding prospective applicants that little time remains to apply for some 900 Fulbright scholarships for study or research in 28 countries. Applications are being accepted

until 1 November. Requests for forms must be postmarked before 15 October. Inter-American Cultural Convention awards for study in 17 Latin American countries have the same filing deadline.

Recipients of Fulbright awards for study in Europe, Latin America, and the Asia-Pacific area will receive tuition, maintenance, and round-trip travel. The IACC scholarships cover transportation, tuition, and partial maintenance costs. The Institute of International Education administers both of these programs for the U.S. Department of State.

General eligibility requirements for both categories of awards are: U.S. citizenship at time of application; a bachelor's degree or its equivalent by 1960; knowledge of the language of the host country; good health; and a demonstrated capacity for independent study. Preference is given to applicants under 35 years of age who have not previously lived or studied abroad.

Enrolled students at a college or university should consult the campus Fulbright adviser for information and applications. Others may write to the Information and Counseling Division, Institute of International Education, 1 E. 67th St., New York 21, N.Y. or to any of IIE's regional offices.

General. Colleges, universities, and nonprofit research and higher educational institutions have been invited by the National Science Foundation to submit proposals for summer (1960) and academic year (1960-61) study-training-research projects designed to provide educational opportunities for secondary-school students, college undergraduates, and teachers. Building on the successful experience of similar projects of the past summer and the present school year which attracted thousands of students and teachers, the foundation plans to continue three experimental programs next year. Proposals from colleges and universities will be considered in all three. They are:

1) *Summer Science Training Program for Secondary-School Students.* This program is designed to encourage scientific interests of high-ability secondary-school students by providing, during the summer of 1960, opportunities for them to study and work with experienced scientists and mathematicians in classrooms, laboratories, and research facilities. Because a primary purpose in this program is to permit superior students to take advantage of the resources of colleges and universities through spe-

cial programs developed by these institutions and conducted by their faculties, it is expected that a major portion of the instruction will be provided by regular staff members. The deadline for postmark of proposals for the summer of 1960 is 12 October 1959.

2) (i) *Undergraduate Research Participation Program*, and (ii) *Undergraduate Research Training Program*. It is the purpose of these programs to help colleges and universities provide new and expanded means for high-ability students to advance in their understanding of scientific methods and in their ability to employ investigative procedures.

One means is to introduce more actual research activity into the undergraduate educational pursuits of potential scientists. Such activity typifies the Undergraduate Research Participation Program under which students participate in established programs financed primarily for objectives other than undergraduate education. Another is to make it possible for colleges and universities to initiate new programs with the primary objective of providing educational experiences for undergraduates and financed largely from funds for educational purposes. This method is typical of the Undergraduate Research Training Program. Proposals for these programs beginning in the summer of 1960 should be postmarked not later than midnight 15 November; those beginning in the academic year 1960-61, not later than 8 January 1960.

3) *Research Participation for Teacher Training.* This program is designed to encourage colleges and universities to provide research experience for science and mathematics teachers in high schools, and for instructors in science, mathematics, and engineering in colleges (including junior colleges) which have but few, if any, research facilities. The fundamental purpose of the foundation in supporting this type program is to encourage the development of opportunities for the further training of teachers. Training in these cases is to be provided through participation in research activity under the tutelage of experienced scientific investigators. Actual research experience, full time in the laboratory, in the field, or in theoretical investigations, should form the basis of a research participation program. It is expected that teachers participating in such experience will receive individual and special consideration, and that they will be provided guidance which will effectively aid them in obtaining a type