SCIENCE EDUCATION

Fellowships and Grants

NATO postdoctoral fellowships have been awarded to 44 American scientists by the National Science Foundation which, at the request of the Department of State, administers the program for US citizens and nationals. The fellowship program was instituted by the North Atlantic Treaty Organization in 1959 in the belief that full development of science and technology is essential to the culture, economy, strength, and welfare of the Atlantic community. Designed to encourage further study abroad, the program enables US scientists to study in nine foreign nations and, at the same time, it brings outstanding foreign scientists from other NATO countries to the United States for further training. Of the 44 US winners of NATO fellowships, the following twelve are physicists (fellowship institutions are listed in parentheses):

Angelo Bardasis, U. of Illinois (Ecole Normale Supérieure, Paris, France)
John W. Clark, Princeton U. (Institute for Theoretical Physics, Copenhagen, Denmark)
Frederick J. Ernst, Jr., Columbia U. (U. of Hamburg, Germany)
Frank A. Horrigan, Harvard U. (Centre d'Etudes Nucléaires, Saclay, France)
William M. Irvine, Harvard U. (Max Planck Institute, Munich, Germany)
Seymour Margulies, U. of Illinois (Max Planck Institute, Heidelberg, Germany)
David K. McDaniels, U. of Washington (Centre d'Etudes Nucléaires, Saclay, France)
Emmanuel Meeron, Convair, San Diego (Université Libre, Belgium)
James J. Pearson, U. of Pittsburgh (Centre d'Etudes Nucléaires, Saclay, France)
Evan R. Pugh, Cornell U. (Royal Institute of Technology, Stockholm, Sweden)
Peter L. Scott, U. of California (Oxford U., England)
James D. van Putten, U. of Michigan (European Council of Nuclear Research, Switzerland).

Carnegie Institute of Technology has received a grant of $750 000 from the Buhl Foundation to endow a professorship in theoretical physics and to support related activities. This is the latest of several gifts by the Buhl Foundation for the support of teaching and research at Carnegie Tech, most of which have been used for the expansion of the Physics Department.

Travel grants will be made by the National Academy of Sciences–National Research Council to a number of mathematicians who wish to attend the International Congress of Mathematicians in Stockholm, August 15–22, 1962. The deadline for applications is November 1, 1961, and grants will be made only to persons whose applications have been received, in good order, by that date. Younger mathematicians are especially urged to apply. Forms may be obtained from the Division of Mathematics, NAS-NRC, 2101 Constitution Ave., N. W., Washington 25, D. C. Selections will be made by the regular Committee on Travel Grants of the Division of Mathematics, together with representatives of societies affiliated with the division and representatives of various government agencies.

Under its new Institutional Grants Program, the National Science Foundation has recently awarded a first group of grants totaling nearly $1.5 million to 248 colleges and universities. The amount of each institutional grant is equal to 5 percent of the amount of Foundation basic-research-grant payments made to the institution during the period July 1, 1960 through March 31, 1961. For this 9-month period the maximum payment is $37 500.

Institutional grants are designed to strengthen the over-all scientific research and research-training effort. They provide colleges and universities with valuable flexibility for strengthening and balancing scientific research activities without specifying the particular activities to be undertaken with the funds. The grants were open to degree-granting institutions of higher learning who received National Science Foundation basic-research-grant payments during the above-stated time period and who indicated in writing a desire to participate. Those receiving grants report to the Foundation each year on use of the funds.

Five postdoctoral college-administration fellowships (maximum stipend is $8000) are being offered by the Center for the Study of Higher Education at the University of Michigan. Applicants should have a doctor's degree or the equivalent in any academic field and be no older than 40. A few predoctoral fellowships are available at Michigan State and Wayne State Universities. The predoctoral grants, some of which are intended for junior-college administration, provide a maximum stipend of $3500.

For further information, write to the Center for the Study of Higher Education, University of Michigan, Ann Arbor, Mich. Closing date is February 1, 1962.

During the month of July, high-school students from 16 states took part in an intensive four-week training program in astronomy and the space sciences at New York City's Hayden Planetarium. Selected from among 524 applicants, the students were mainly residents of the New York metropolitan area, although some came from as far away as Florida and the Pacific Coast. Offered by the Planetarium for the third successive year, the course is part of a nation-wide program supported by the National Science Foundation to pro-

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vide advanced science training to high-school students of exceptional ability. Hayden Planetarium is one of 173 institutions participating in the over-all program.

Directed by Franklyn M. Branley, associate astronomer at the Planetarium, the course dealt with such topics as descriptive astronomy, radio astronomy, celestial mechanics, space technology, and astrophysics. Classroom instruction was provided by Gibson Reaves, associate professor of astronomy at the University of Southern California, and Robert E. Danielson, research associate at Princeton University Observatory. A number of additional lecturers spoke on topics related to their current work.

Support for regional science-education projects for students and teachers has again been provided through National Science Foundation grants to State Academies of Science and similar organizations. Among this year's list of projects are visiting-scientist programs, aid for science clubs and workshops, the expansion of Junior Academies of Science, and various experimental approaches to science education at both high-school and college levels. A list of the 51 grants can be obtained from the National Science Foundation, 1951 Constitution Ave., N. W., Washington 25, D. C.

Equipment and Laboratories

The redesigned electron synchrotron at the California Institute of Technology is now able to operate at its maximum energy of 1.5 Bev, according to an announcement by Robert F. Bacher, director of the synchrotron project and chairman of Caltech's Division of Physics, Mathematics, and Astronomy. It is the only electron accelerator in the world with beam energies covering the range from 1.2 to 1.5 Bev. The latter energy yields a velocity of 99.999995 percent of the speed of light for the orbiting electrons.

Construction of the machine began in the spring of 1950 under contract with the AEC, and after its completion in July 1952 it had a top operating energy of 500 Mev. Improvements brought the maximum up to 1.2 Bev in August 1956. The recent modifications, accomplished under the leadership of Matthew Sands, deputy project director, resulted in the synchrotron's present upper limit, which is the ultimate attainable with its 14 000-gauss magnet.

The accelerated electrons are used mainly to generate x-ray beams for studies of the photoproduction of elementary particles. The facility operates 24 hours a day during the week and day shift only on weekends. In addition to Bacher and Sands, the synchrotron group includes physicists Robert L. Walker, Alvin V. Tollestrup, Vincent Z. Peterson, Joe H. Mullins, Ricardo Gomez, Robert F. Deery, and Hans G. E. Kobrak. Other project members are Robert V. Langmuir (professor of electrical engineering), Bruce Rule (chief engineer), Edward Taylor (operations engineer), and Camilo Paganini (electronics engineer), plus an operations staff and about 15 graduate students.