

News and views

National Science Foundation

Its Programs Soon to be Under Way

Assuming that Congress would approve the President's recommendation for a fourteen million dollar budget for the National Science Foundation's first year of operation, it had originally been estimated that funds to be available for NSF support of basic research in the medical, biological, physical, mathematical, and engineering sciences would total more than eight million dollars. Over five million dollars were to have been allocated for graduate and post-doctoral fellowships under its program for training scientific manpower. The House of Representatives, however, cut the requested budget to \$300,000 after which the Senate proposed a figure of \$6,300,000. Final arbitration by a joint Senate-House conference committee resulted in a final appropriation of \$3,500,000 for NSF operations during the present fiscal year (July 1, 1951 to June 30, 1952).

The approved budget, although only one-quarter of the amount originally asked for, will enable the Foundation to start immediately on its two major operating programs; until now it has been concerned primarily with planning and with problems of organization and staffing. According to NSF Director Alan T. Waterman, approximately \$1,500,000 of the available funds will be allocated for the support of basic scientific research, about \$1,350,000 for the training of scientific manpower, and the balance for development of a national policy for the promotion of basic research and education in the sciences, for the wider dissemination of scientific information, and for other services including support of the National Scientific Register, now established in the Office of Education.

Basic scientific research will in most cases be supported by means of research grants. No grants have been made to date, although a considerable number of research proposals have been received from investigators in all parts of the United States. It is expected that many more proposals will be received shortly.

Proposals for research grants will be given preliminary evaluation and review by the Foundation's three research divisions: the Division of Biological Sciences under John Fields, the Division of Mathematical, Physical, and Engineering Sciences under Paul E. Klopsteg, and the Division of Medical Research under Dr. Field (acting). Each Division will be assisted in evaluation and review by a Divisional Committee, made up of outstanding scientists in the field, and by expert consultants employed on a part-time basis. Grants will be approved

by the Director and the 24-member National Science Board, whose chairman is James B. Conant, president of Harvard University.

Approximately four hundred graduate fellowships will be awarded by the Foundation for the next academic year under a program directed by Harry C. Kelly, who heads the NSF Division of Scientific Personnel and Education. Selection of fellows will be made solely on the basis of ability and will be carried on by the National Research Council, which has participated in the selection of fellows for various government and private agencies for many years. Most fellowships will be given to predoctoral applicants, particularly to those who will be eligible to begin graduate study during the coming year, although a limited number of postdoctoral fellowships will also be awarded. Final selection will be made by the National Science Board.

Fellows may pursue their training at accredited non-profit institutions of higher learning in the United States or similar institutions abroad approved by the Foundation. The fellow must show that he will be accepted by the institution in which he plans to study before his fellowship award is finally confirmed. Stipends will vary with the academic status of the recipients. First year fellows (those who expect to enter upon graduate study for the first time after June 1952 or those who have less than one year of graduate study) will receive \$1400. Second year fellows will receive \$1600, advanced predoctoral fellows \$1700, and postdoctoral fellows \$3000; these three categories of fellows will also receive additional allowances for wives and children. Normal tuition and laboratory fees will be paid by the Foundation, and limited allowances to aid in defraying costs of travel will be provided.

NSF fellows will be expected to devote full time to advanced scientific study or scientific research for the tenure of the fellowship. Fellows may not receive remuneration from other fellowships or similar awards nor from Federal grants or contracts during the tenure of the fellowship. The results of research carried out by a fellow during his training will be made available to the public without restriction, except as is required in the interest of national security.

Application forms for NSF graduate fellowships are available from the Fellowship Office, National Research Council, Washington 25, D. C. In order to be considered for the 1952-53 academic year, completed applications must be returned to the NRC by January 7, 1952. The affidavit and loyalty oath required by the National Science Foundation Act of 1950 will constitute part of the application form and must be completed and returned with other application materials.

Klopsteg Heads NSF Division

Physical and Related Sciences

Paul E. Klopsteg, professor of applied science and director of research at Northwestern University's Institute of Technology, was appointed assistant director of the Foundation for the Division of Physical, Mathe-



Paul E. Klopsteg, newly appointed NSF division head.

mathematical, and Engineering Sciences in October and began his new duties with the Foundation on November 1st. He has been granted leave of absence from Northwestern.

A physicist, Dr. Klopsteg is one of the three past-chairmen of the governing board of the American Institute of Physics (1940-47), and was president of the Central Scientific Company before joining Northwestern. During World War II he served with the Office of Scientific Research and Development as chief of Division 17, Physics and Special Devices, of the National Defense Research Committee, which developed important equipment and devices for wartime use. Notable among the Division 17 developments were the three 4,000,000-volt x-ray machines built by the University of Illinois under contract with OSRD, and the high voltage Van de Graaff machine developed under contract with the Massachusetts Institute of Technology for the x-ray inspection of heavy military equipment. Later in the war, Dr. Klopsteg was named assistant chief of the Office of Field Service, which organized and directed the assignment of scientific consultants to the various theaters of war. In 1944 he was made chief of the Research Division, General Headquarters, Southwest Pacific area in Australia and New Guinea. Dr. Klopsteg was awarded the Medal for Merit with Presidential Citation for his wartime work. During World War I, he was a development engineer for the Ordnance Department of the United States Army.

Continuing his association with federal research activities since 1945, he has been a member and chairman of the board of governors of the Argonne National Laboratory, operated by the University of Chicago under contract to the U. S. Atomic Energy Commission. He is also chairman of the Advisory Committee on Artificial Limbs of the National Research Council.

Earlier this year, Dr. Klopsteg spent a number of weeks in Lahore, Pakistan, where he had been invited by the Governor of Punjab to advise on scientific and technical education of Pakistan at all levels, including the universities. Dr. Klopsteg has been director and treasurer of the American Association of Physics Teachers and a member of the executive committee of the American Association for the Advancement of Science. In addition to these and other affiliations with scientific and educational groups, he is an honorary member and former chairman of the board of governors of the National Archery Association. In Washington he is a member of the Cosmos Club.

Scientific Manpower

The Shortage is becoming Critical

Evidence continues to mount that the number of scientifically and technically trained people in the United States falls far short of being adequate to satisfy even the present research needs of the government, industry, and education. While proposals for emergency expansion of the programs of the Atomic Energy Commission and other agencies imply that there will be a vastly increased drain on the nation's resources of trained manpower, there is every indication that the production of scientists and engineers is declining. During the 20th Anniversary Meeting of the American Institute of Physics in Chicago last October, it should be noted, the AIP Placement Register provided facilities for representatives of industry, government agencies, and universities to discuss employment opportunities with those physicists (about 130) who expressed any personal interest in the matter. It is significant that the available jobs listed at that time by the Placement Register outnumbered the physicists who listed themselves as being available for employment by a ratio of almost four to one.

Defense Mobilization Director Charles E. Wilson recently issued a statement in which he suggested certain immediate measures that should be taken to meet the problem. "The supply of scientific and engineering graduates in 1951 is less than half that needed to fully man our economic and defense programs," he said. "Present indications are that the number of scientifically trained graduates will steadily decrease at least until 1954 while the demands of essential civilian and defense programs, in the same period, will continue to increase. We can and we must do something about this shortage.

"First, Government, industry, and educational institutions must make the most effective possible utilization of those persons who have received scientific and technical training. Any failure to utilize such personnel in the most effective possible manner plays into the hands of those who want to see our defense mobilization program fail. All departments and agencies of the Federal Government must set the example in this respect.

"Second, our educational institutions can develop counseling programs which will result in a larger number of men and women being trained in these fields.