

The National Science Foundation on April 30th announced the award of 159 grants totaling about \$1.36 million for basic research in the natural sciences and to support studies and conferences on science, scientific information exchange, compilation of scientific personnel information, education in the sciences, and travel of American scientists to international scientific meetings. This group of awards, the third to be announced during fiscal year 1954, brings the total since 1951 to more than 800 awards worth more than \$7 million. Approximately 18% of the funds made available in the current group of awards are for work in physics. Grants in support of basic research in physics have been made to the following institutions (the names of the "principal scientists" are given in the parentheses): University of Alabama, cloud chamber search for free magnetic poles (Arthur E. Ruark); Antioch College, glow discharge oscillations (Albert B. Stewart and Gwilym E. Owen); Brigham Young University, definitive physical characteristics of tones (Harvey Fletcher); Bryn Mawr College, direction correlations and forbidden beta-spectra (John R. Pruett); University of Chicago, mass spectrometric investigations (Mark G. Inghram); University of Colorado, polarization measurements of the zodiacal light during total solar eclipse of June '54 (William A. Rense); Columbia University, theory of nuclear quadrupole effects (Henry M. Foley); Cornell University, thermal conductivity and crystal imperfections (R. L. Sproull); Johns Hopkins University, intermediate state of superconductivity (Hans Meissner); Louisiana State University, theory of photo-nuclear reactions (J. S. Levinger); University of Maryland, origin of ultra-high-energy cosmic rays (S. Fred Singer); University of Michigan, use of bubble chambers in the study of high-energy nuclear interactions (Donald A. Glaser); University of Minnesota, atomic mass determinations (Alfred O. C. Nier); University of North Carolina, the intensities of infrared absorption bands (J. W. Straley); Northwestern University, Hall effect in single crystals at low temperatures (Jules A. Marcus); Ohio State University, nuclear orientation at low temperatures (J. G. Daunt and P. S. Jastram); Reed College, conduction and trapping in ionic crystals (Frederick C. Brown); Wisconsin Alumni Research Foundation, high-energy accelerator problems (D. W. Kerst); Yale University, definition and law in the physical sciences (Henry Margenau).

In addition, the Foundation has provided funds for the support of a number of conferences, including those to be held at the following institutions: University of California at Los Angeles (The Significance and Possibilities of High-Speed Computing in Meteorology), Indiana University (Stellar Atmospheres), University of Michigan (Multidimensional Analysis), Swarthmore College (Astronomy Research in Colleges), University of California (Summer Conference for Teachers of Astronomy), Columbia University (Nuclear Physics in Engineering Education), University of Illinois (Solid State Physics in Engineering Education). Grants have

also been made to meet travel expenses of selected groups of scientists planning to attend the Third General Assembly and Congress of the International Union of Crystallography, the World Power Conference in Rio de Janeiro, and the Eighth General Assembly of the International Union of Pure and Applied Physics, and other international meetings to be held this summer.

A forty-eight percent increase in expenditures for fundamental research and fellowship programs for 1954-55 has been announced by the Shell Fellowship Committee, 50 West 50th Street, New York 20, N. Y., on behalf of Shell Chemical Corporation, Shell Development Company, Shell Oil Company, and Shell Pipe Line Corporation. The increase will raise expenditures next year to \$263 500 from the current year's \$177 500. Grants for fundamental research are made to university departments to aid them in expanding research in their particular fields. A new feature was incorporated in the research grants for 1954-55, in recognition of the considerable contributions allied schools and departments make to the over-all accomplishments of a university's scientific departments. Each \$5000 grant designated for a specific science department will be supplemented by an unrestricted grant of \$2500 to be used by the schools as they see fit. Schools receiving research grants are: California Institute of Technology, Carnegie Tech, Cornell, University of Chicago, Harvard, Massachusetts Institute of Technology, Northwestern, Notre Dame, Princeton, Rice Institute, University of Rochester, St. Louis University, Stanford, and Yale. The grants and fellowships are in several fields of science, including physics.

Wendell F. Hess, director of research at Rensselaer Polytechnic Institute, Troy, New York, since 1952, died of a heart attack April 21. He was fifty-one years old. Dr. Hess had conducted research and had taught at Rensselaer since his graduation from the Institute in 1925, becoming head of the metallurgical engineering department in 1947.

Ellis L. Manning, chief of the external research section of the chemical physics branch at the Squier Signal Laboratory, died on March 27 at the age of fifty-three. Mr. Manning received his Master's degree from St. Lawrence University in 1925, remaining there, as instructor and assistant professor of physics, until 1927. He later served as physicist and assistant to the executive engineer at the General Electric Company's research laboratory. Previous to his association with the Signal Corps Engineering Laboratories, he was supervisor of science for the New York State Education Department (1938-46) and head of the physics section at the U. S. Merchant Marine Academy (1946-48). Mr. Manning was the author of the book *Excursions in Science*. He was a member of the American Physical Society, the American Institute of Electrical Engineers, and the American Chemical Society.