RESEARCH FACILIT

Research Support Programs

The Air Force Office of Scientific Research has announced an expansion of its support for research projects in the area of applied mathematics. This program, which will emphasize both the traditional and modern aspects of applied mathematics, will be a part of the program of the Directorate of Mathematical Sciences of AFOSR. It is the hope of the Air Force that the added support will help fill the increasing need for mathematical methods to be used in solving problems in the physical and engineering sciences. The program is expected to start in the fall of 1961. Interested applied mathematicians are encouraged to submit proposals for support under this program to the Director of Mathematical Sciences, Air Force Office of Scientific Research, Washington 25, D. C.

The establishment of the Walter F. Joyce Foundation, a nonprofit organization for the study of geophysical and geochemical phenomena, has been announced by the Apparatus Division of Texas Instruments Inc. The Foundation's initial grant of approximately $60 000 has been made to the Massachusetts Institute of Technology for a study of phenomena associated with radon gas to be carried out under the direction of Robley D. Evans of MIT's Physics Department. Radon is the only naturally occurring, long-lived, chemically inert, radioactive gas which is continuously generated and is always present in all rocks and soils. Field sampling, analysis of soil gas and air, and interpretation of experimental results will be carried out under the MIT program.

Research Centers

Federal contract research centers administered by educational institutions reported expenditures of $289.1 million for separately budgeted research and development during fiscal year 1958, according to a recent report by the National Science Foundation. This was more than twice the figure reported for 1954, the period covered by the last such study. In addition, the amount spent in 1958 represents 39 percent of all R & D expenditures of colleges and universities during that year, whereas in 1954 the comparable figure was only 32 percent. Of the 1958 total, $285.3 million was received from federal sources and $3.8 million from nonfederal sources. Most of the money was spent on work in engineering ($117.1 million) and the physical sciences ($157.7 million). About one quarter of the total ($70 million) was reportedly spent for basic research.

The 28 federal contract research centers are administered by 18 universities, and are an outgrowth of

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research units established by the government during World War II. In 1958, it was reported that they employed a total of 8428 scientists and engineers.

New York University plans during the next few years to establish a major scientific center, designed to handle contract research, on a 1000-acre tract in Sterling Forest, near Tuxedo Park, N. Y., about 35 miles northwest of New York City. Emphasis will be placed on research in physics, chemistry, geology, botany, engineering, and medicine. The first laboratories will be started in the spring, and within two or three years the University hopes to set up a nuclear research center. The entire project is expected to cost about $40 million over the next ten years. The tract will be known as University Valley and will also include facilities for graduate study.

Northrop Corporation's Norair Division recently dedicated a new Advanced Research Center at Hawthorne, Calif. Included in the center are laboratories for space propulsion and power, physics, planetary physics and chemistry, bioastronautics, plasma dynamics, and nuclear science. Among the items of equipment which have been installed are two plasma tunnels, one for magnetogasdynamics and one for cryogenic research, a liquid-helium cryostat for studies at temperatures down to — 460° F, and a zero gravity tower.

Equipment

A prototype nuclear reactor system designed to generate auxiliary electric power in the kilowatt range for use in space probes is reported to have successfully completed operational ground tests. Known as the "SNAP Experimental Reactor", it is about the size of a five-gallon can and weighs about 250 pounds. Fueled with enriched uranium, it is intended for use with thermoelectric converters or miniature turbine generators. The prototype model produces 50 kilowatts of heat at a coolant outlet temperature of 1200°F. It was developed for the Atomic Energy Commission by Atomics International, a division of North American Aviation, Inc.

A 3000-kw open-pool reactor will be built for the state of Rhode Island by the General Electric Company at a cost of $526 500. Scheduled to begin operation early next year, it will be operated by the Rhode Island Atomic Energy Commission and will be located at Fort Kearney, a former Army coast artillery base on Narragansett Bay. It will be used in research sponsored by the state, as well as for research and training programs conducted by the University of Rhode Island, Brown University, and Providence College.