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tivity, working in close cooperation with the Navy's Bureau of Aeronautics and the Office of Naval Research.

Research Facilities

California Institute of Technology has announced that in recent experiments the Caltech synchrotron has accelerated electrons to the record energy level of 1.2 Bev. The synchrotron was installed at Caltech in 1951 under contract with the Atomic Energy Commission, and during the first phase of its operation, covering a period of three years, it operated at energies in the neighborhood of 500 Mev. Modifications in the past two years have brought its output up to an energy level in excess of one billion volts. The synchrotron, which is essentially a device for generating high-energy x-rays for the bombardment of atomic nuclei, has proved effective at lower energies in producing relatively lightweight mesons in experiments employing hydrogen and deuterium targets. With the higher energies now available it is expected that efforts will be made to discover whether such other particles as heavy mesons and hyperons can also be produced by x-ray bombardment.

The Harvard University Computation Laboratory has received a Univac electronic computer as a gift from the Sperry Rand Corp. The computer, valued at $1.5 million, will be employed in solving mathematical problems associated with research at Harvard in physics, chemistry, engineering, astronomy, operations research, and the social sciences. The computer will find early use in calculations relating to the design of the 6-Bev Cambridge Electron Accelerator, a joint Harvard-MIT project now in progress.

Michigan State University has commenced construction of an electronic digital computer similar in logic and design principles to the machine developed at the Institute for Advanced Study in Princeton. The computer will be located in the electrical engineering building on the University's East Lansing campus, and is expected to be complete late in 1957.

The University of Maryland Department of Physics has been awarded $83 350 in grants for cosmic-ray research by the National Science Foundation. Two of the grants are for the construction of cosmic-ray monitor telescopes to be used in the International Geophysical Year cosmic-ray program in the Arctic and Antarctic, and a third grant will be used to establish a new research project for an IGY study of cosmic-ray fluctuations.

Continental Oil Co. has announced plans to add a radiation laboratory to its research establishment in Ponca City, Okla. The $500 000 laboratory, designed by Walter Kidde Nuclear Laboratories, will include facilities for radiation studies of petroleum products and refining processes.

Westinghouse Electric Corp. has formed a new Central Physics and Mathematics Department at its Bettis Plant, the Pittsburgh atomic power research labo-

ratory which Westinghouse operates for the AEC. The new department, under the direction of Sidney Krasik, will conduct research in reactor physics and will support the activities of other Bettis Plant departments by supplying information on reactor parameters, design techniques, and reactor applications.

Grants and Fellowships

The National Academy of Sciences—National Research Council has announced that its programs of Postdoctoral Resident Research Associateships will again be offered for the 1957–58 academic year. The programs have been established to provide young scientists of unusual ability and promise with an opportunity for advanced training in basic research in the general areas of biology, ceramics, chemistry, electronics, mathematics, metallurgy, and physics. The associateships are tenable at the Argonne National Laboratory in Lemont, Illinois; at the Washington, D. C. and Denver, Colorado, laboratories of the National Bureau of Standards; at the Naval Research Laboratory in Washington, D. C.; and at the Oak Ridge National Laboratory in Oak Ridge, Tennessee.

Applicants must be citizens of the United States. They must produce evidence of training in one of the listed fields equivalent to that represented by the PhD or ScD degree and must have demonstrated superior ability for creative research. Stipends are up to $7035 a year. Further information and application materials may be secured by writing to the Fellowship Office, National Academy of Sciences—National Research Council, 2101 Constitution Avenue, N. W., Washington 25, D. C. In order to be considered for awards for the academic year 1957–58, applications must be filed at the Fellowship Office on or before January 11, 1957. Awards will be made about April 1, 1957.

Applications are now being accepted for advanced study and research in the natural sciences in three National Science Foundation fellowship programs: a predoctoral program for college seniors and graduate science students, a postdoctoral program for scientists holding the doctoral degree, and a senior postdoctoral program for candidates who have held the science doctorate for a minimum of five years and have demonstrated unusual ability and special aptitude for productive scholarship in the sciences. It is planned that approximately one thousand awards will be made.

NSF fellowships are awarded to American citizens who will begin or continue their studies at the graduate level or beyond during the 1957–58 academic year. Under the broadened program, fellowships will be awarded in the mathematical, physical, medical, biological, engineering, and other sciences, certain interdisciplinary fields, and areas of convergence between the natural and social sciences. Fellows will be selected on the basis of ability as evidenced by letters of recommendation, academic records, and other evidence of attainment. Applicants for the predoctoral fellowships are required to take the Graduate Record Examination.

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