

ment is headed by biochemist Wendell M. Stanley, Nobel Laureate and director of the Laboratory. Starting in September, lecture courses will be offered to graduate and advanced undergraduate students, to be followed later by a comprehensive laboratory course. Additional instruction will be offered, mostly at the graduate level, in the form of special study courses, seminars, and research projects. The program will lead to the MS degree with a major in virology, or to the PhD. The Department is now accepting applications from qualified students (including upper division and graduate students in other departments who wish to receive instruction in virology). A limited number of teaching and research assistantships are available.

Facilities

A **Center for Nuclear Technology** will be established this fall at Cornell University in Ithaca, N. Y., at a cost of more than \$1.5 million. A National Science Foundation grant of \$475 000 assured construction of the Center, which will include a nuclear reactor unit that can be used both for research and for training. For research purposes it will have a zero-power core obtained under the NSF grant, while the training program will employ a TRIGA (Training Research Isotope General Atomics) core, towards which the Atomic Energy Commission has granted \$150 000. The training core will also be used for radioactive isotopes studies. The Center will be under the direction of Trevor R. Cuykendall and David D. Clark of Cornell's Department of Engineering Physics, and is expected to be complete by next summer.

Atlantic Research Corporation of Alexandria, Va., formally dedicated its new headquarters offices and laboratories on July 18. The ten-year-old research and development firm's major activity is solid propellant rocketry, but it has also carried out a variety of chemical, electronic, and engineering projects for governmental and industrial sponsors.

A contract for the construction of a Metals Development Building at the Ames (Iowa) Laboratory of the US Atomic Energy Commission was signed on June 22. The cost of the entire project, including equipment and utilities, will be \$1.9 million. Construction of the building is expected to be completed sometime in 1960.

The Leach Corporation has opened a new solid-state research laboratory at its Relay Division in Los Angeles to augment the firm's development and test work on semiconductor devices.

On July 27, Raytheon Company dedicated its new Spencer Laboratory in Burlington, Mass. To be used for the research and development of all types of microwave tubes including, at present, magnetrons, amplifiers, traveling-wave tubes, backward-wave oscillators, and klystrons, the new facility is named for Raytheon's senior vice president, Percy L. Spencer, a pioneer in microwave tube development. During the dedication

ceremonies, the firm revealed that the Spencer Laboratory, in addition to containing space for laboratories, offices, and a technical library, will house a 100-foot-long modulator for testing high-power microwave tubes, which will be constructed as part of a special \$4 million program to be initiated by Raytheon in the near future. The modulator will be placed in a special wing of the new laboratory.

Georg Joos, professor of experimental physics at the Technische Hochschule in Munich, Germany, died on May 20. Born in 1894, Prof. Joos was educated at the Institute of Technology in Stuttgart and at the University of Tübingen. He was professor of theoretical physics at the University of Jena from 1924 to 1935, and in the latter year he was named professor of experimental physics at the University of Göttingen. During the period 1941-45 he was the scientific director of the Zeiss Works. After the war he left Zeiss to accept the experimental physics professorship at Munich, which he held until his death. Prof. Joos was a member of the Bavarian Akademie der Wissenschaften and the Akademie der Wissenschaften of Göttingen.

Karl W. Meissner, professor of physics at Purdue University, died suddenly on April 13 as the result of a coronary thrombosis. He was 67 years of age and at the time of his death was at sea, enroute to Europe. He was to have presented a paper on his recent work with the atomic beam source at the International Symposium on Interferometry held in June at Teddington, Middlesex, England, and was scheduled to spend the summer term at the University of Kiel, Germany, as a visiting lecturer in spectroscopy. He was born in Reutlingen, Germany, and received his doctoral degree from the University of Tübingen in 1915, where he studied under Paschen, Roentgen, and Sommerfeld. In 1925 he was called to the University of Frankfurt-am-Main, where in 1930 he became the director of the Physics Department. His refusal to compromise the basic principles of democracy and human freedom led to his dismissal in 1937 by the Nazi regime, and in the following year he came to the United States as assistant professor of physics at the Worcester Polytechnic Institute in Massachusetts. He joined the physics faculty of Purdue University in 1941 and remained there in charge of the spectroscopy section.

Prof. Meissner was the first to prove experimentally the existence of oxygen and sulfur in the sun. In 1935, independently of Minkowski and Bruck, he developed the atomic beam method for the study of hyperfine structure. From 1942 on he was interested in the development of an atomic beam light source for the primary standard of length. In his experiments with this source at Purdue he succeeded in reducing the half width of the calcium line $\lambda 4226$ Å to less than one third that of any other line proposed as a primary standard. Just one month prior to his death he suc-

ceeded in obtaining with the calcium atomic beam source almost incredible orders of interference in excess of 4.8 million.

A fellow of the American Physical Society and of the Optical Society of America, Prof. Meissner was also a member of the American Association of Physics Teachers.

John G. Tappert, a member of the staff at the US Army Ordnance Frankford Arsenal in Philadelphia since 1935, died on June 12 at the age of 53. Dr. Tappert was born in Meriden, Conn., did his undergraduate work at Temple University, and received his PhD in physics from the University of Pennsylvania in 1938. Except for a two-year period of self-employment as a consulting engineer, his professional affiliation was entirely with the Frankford Arsenal, where most recently he had been a member of a Long-Range Technical Forecasting Panel which evaluates original ideas submitted by employees and promotes the development of those found to have value.

Dr. Tappert was the inventor of many instruments for the control of artillery fire, including several automatic computers for antiaircraft guns. In 1945, he was sent to Europe by the US Army Ordnance Department as a technical scout to evaluate captured equipment, manufacturing plants, research laboratories, and scientific personnel. He was a member of the American Physical Society.

Russell H. Varian, president of Varian Associates, and co-inventor of the klystron radio tube, died of a heart attack on July 28, while aboard a cruise ship near Juneau, Alaska. He was 61 years of age. Dr. Varian was born in Washington, D. C., and received his collegiate education at Stanford University, where he was awarded an MA in 1927. He received an honorary doctor of engineering degree from the Polytechnic Institute of Brooklyn in 1943.

After receiving his master's degree, Dr. Varian joined the Humble Oil Company doing geophysical surveys. He left there to work with the Farnsworth Television Corporation, but in 1934 he returned to Stanford to work on the klystron with his brother Sigurd and other members of the Physics Department. In 1950, Dr. Varian and his brother were awarded Wetherill Medals by the Franklin Institute for their part in the invention of the klystron, a high-frequency circuit tube which was used to produce beams for aircraft guidance before the development of radar.

Dr. Varian spent from 1940 to 1946 with the Sperry Gyroscope Company, but returned once more to Stanford, where he stayed until 1948 when he and his brother joined with four others in forming their own company, Varian Associates, with Russell Varian as president. The Palo Alto, Calif., firm manufactures ultra-high-frequency microwave tubes and has subsidiaries in Boston and Summit, N. J.

Dr. Varian was a fellow of the American Physical Society.

AN INVITATION TO JOIN ORO

Pioneer In Operations Research

Operations Research is a young science, earning recognition rapidly as a significant aid to decision-making. It employs the services of mathematicians, physicists, economists, engineers, political scientists, psychologists, and others working on teams to synthesize all phases of a problem.

At ORO, a civilian and non-governmental organization, you will become one of a team assigned to vital military problems in the area of tactics, strategy, logistics, weapons systems analysis and communications.

No other Operations Research organization has the broad experience of ORO. Founded in 1948 by Dr. Ellis A. Johnson, pioneer of U. S. Opsearch, ORO's research findings have influenced decision-making on the highest military levels.

ORO's professional atmosphere encourages those with initiative and imagination to broaden their scientific capabilities.

ORO starting salaries are competitive with those of industry and other private research organizations. Promotions are based solely on merit. The "fringe" benefits offered are ahead of those given by many companies.

The cultural and historical features which attract visitors to Washington, D. C. are but a short drive from the pleasant Bethesda suburb in which ORO is located. Attractive homes and apartments are within walking distance and readily available in all price ranges. Schools are excellent.

**For further information write:
Professional Appointments**

OPERATIONS RESEARCH OFFICE

ORO The Johns Hopkins University

8935 ARLINGTON ROAD
BETHESDA 14, MARYLAND