tution of Telecommunication Engineers, Post Box 481, New Delhi, India.

Summer Programs

The Polytechnic Institute of Brooklyn has announced its twelfth annual series of summer lecture and laboratory courses "for advanced instruction in the use of specialized physical tools in chemistry and physics". Three courses are being offered: progress in polymerization and copolymerization techniques (June 6–10); properties of macromolecules in solution, including polyelectrolytes and other water-soluble polymers (June 13–17); and industrial applications of x-ray diffraction (June 6–17). General evening lectures, designed as a part of the first two courses, are an addition to the program and scientists may attend these alone. Address all inquiries and application for registration to Mrs. Doris Cattell, Secretary, Summer Laboratory Courses, Polytechnic Institute of Brooklyn, 99 Livingston St., Brooklyn 1, New York.

The University of Michigan's department of chemical engineering is giving a course on properties and structures of high polymers in solution during the week of July 18–23. The course will be in the hands of F. Bueche (University of Wyoming), L. H. Cragg (McMaster University), L. M. Hobbs and S. Krimm (University of Michigan), and R. Simha (New York University). Registration (limit, 50 persons) will be accepted until May 18 and should be directed to L. M. Hobbs, Department of Chemical and Metallurgical Engineering, University of Michigan, Ann Arbor, Michigan.

A special program for secondary-school science teachers is being offered this summer at Harvard, with courses on recent developments in physical science and classroom use of recent developments in physical science. There will also be a course on science in the elementary school for teachers and supervisors at that level. These courses last from July 5 to August 17 and each carries four units of graduate credit. A number of fellowships, some including travel and living expenses, are available. Further information may be obtained from the Harvard Summer School, 2–N Weld Hall, Cambridge 38, Massachusetts.

A clinic on the techniques and practice of infrared spectroscopy is being offered at the Polytechnic Institute of Brooklyn during the week of August 15–19. The course will be designed to meet the needs of people in industry who use or plan to use infrared in problems of analysis and control and will consist of lecture and laboratory sessions. Attendance is limited to twenty; the fee is $125. Further information may be obtained by writing to Dr. Robert Bauman, Polytechnic Institute of Brooklyn, 85 Livingston St., Brooklyn 1, New York.

Boston College has announced a special two-week intensive course in modern industrial spectroscopy at Chestnut Hill, Boston, from July 11th to July 22nd. The course is particularly designed for chemists and physicists from industry who desire to learn the techniques of emission spectroscopy as an analytical tool. An optional third week of laboratory practice will be made available to those who desire it. Information on the course may be obtained from Professor James J. Devlin, S.J., Physics Department, Boston College, Chestnut Hill 67, Massachusetts.

A two-week technical report writing workshop is being offered by The Pennsylvania State University's College of Engineering and Architecture from August 1st to 12th. "Increased scientific specialization", a Penn State announcement of the course observes, "has magnified the importance of technical reports as the end product of practically all research and development organizations". The course, under the direction of Dwight E. Gray, chief of the technical information division of The Library of Congress, is intended to "enable engineers and scientists to gain the practical instruction and supervised practice necessary to produce effective technical reports of various kinds". For further details write to General Extension, The Pennsylvania State University, University Park, Pa.

Grants

National Science Foundation fellowships in the natural sciences have been awarded for the 1955–56 academic year to 715 predoctoral and 70 postdoctoral candidates. Of the predoctoral fellowships, 255 were awarded to first year graduate students, 291 to graduates in the intermediate years, and 169 to terminal-year predoctoral students. The fellows were selected from 2931 applicants. 151 of the predoctoral and 15 of the postdoctoral fellowships were awarded in physics. Stipends range from $1400 to $1800 for predoctoral fellows and postdoctoral fellows receive $3400; all fellowships include additional allowances for dependents, tuition, etc. An announment of the NSF fellowship program for the next academic year will be made in October, at which time application forms will be made available.

Research Corporation has awarded a $6765 Frederick Gardner Cottrell grant to Union College, Schenectady, New York, to be applied to a cosmic-ray project which the College began in 1951. The project is under the joint direction of Alfred T. Goble, Curtis L. Hemenway, and Vladimir Rojansky; senior physics students participate in the construction of equipment and compilation of data.

Edwin E. Hahn, Jr., research physicist at RCA Laboratories in Princeton, New Jersey, died on February 23rd at the age of thirty-two. He received his BA and PhD degrees at the University of Pennsylvania. In 1949, Dr. Hahn joined RCA Laboratories to carry on research in the fields of solid-state physics, photoconductivity, and cryogenics. Just prior to his death he was instrumental in organizing the Atlantic City Conference on Photoconductivity and was joint editor of

the *Proceedings* of that conference. He was a member of the American Physical Society.

Raymond B. Meyer, head of the communication branch of the Naval Research Laboratory's radio division and a member of the staff of NRL since the time of its inception in 1923, died of a heart attack in Washington, D. C. on March 8th. He was fifty-eight at the time of his death. A native of Wisconsin, Mr. Meyer studied at the Wisconsin State Normal School and at George Washington University. In 1919 he joined the Aircraft Radio Laboratories in Anacostia as a radio engineer. In 1923 the Laboratories became part of the new Naval Research Laboratory and Mr. Meyer transferred with them. He was a member of the American Physical Society.

Harold Stiles, associate professor of physics at Iowa State College of Agriculture and Mechanic Arts from 1914 to 1954, died at his home in Fresno, California, on February 16th. He was eighty years old. Dr. Stiles received his master's degree from Harvard University in 1904 and his PhD from Northwestern University, where he was a physics instructor, in 1909. Before coming to Iowa State in 1914, he served as head of the physics department at Morningside College, Sioux City, for five years. He was a member of the American Physical Society.

James A. Swindler, professor of physics and chairman of the department at Westminster College, New Wilmington, Pennsylvania, died on February 28th at the age of sixty-seven. Dr. Swindler attended Indiana University, receiving his master's degree in 1915 and his doctorate in 1925. He had been an assistant professor of physics at The Pennsylvania State College for two years before joining the Westminster faculty in 1919. During his 35 years at Westminster, Dr. Swindler served not only as professor of physics and chairman of the department, but also as registrar of the College from 1920 to 1936 and as acting dean from 1934 to 1935. A charter member of the Western Pennsylvania Section of the American Association of Physics Teachers, he was also a member of the American Physical Society.

F. J. Williams, director of the research and development laboratories of the National Lead Company's Baroid Division since 1950, died in Houston, Texas, on March 19th. He was forty-seven years old. Dr. Williams attended Alfred University, receiving his bachelor's degree in 1928, and Ohio State University, where he received his PhD in 1932. He served on the faculty of The Pennsylvania State College until 1936 when he became the first incumbent of the National Lead Company's fellowship at Mellon Institute. Dr. Williams remained with the Company, becoming head of the research and development department of the Brooklyn, New York, laboratories, and later, from 1948 to 1950, serving as technical director of the researh laboratories. He was a member of the Society of Rheology.