

ADDRESSES

The listing below comprises the principal recent addresses made by APL staff members to groups and organizations outside the Laboratory.

F. F. Hiltz, "Artificial Neural Elements and Neural Data Reduction," *Neurophysiological Seminar*, The Johns Hopkins University, Dec. 5, 1962.

J. F. R. Floyd, "ASW Tartar and Sea Mauler," *U. S. Navy Mine Defense Laboratory*, Panama City, Fla., Dec. 12, 1962.

K. E. Duning, "Control System Frequency Considerations in the Selection of an Airframe Configuration," *Society of Automotive Engineers*, Miami Beach, Fla., Dec. 12-14, 1962.

D. W. Fox, "Lower Bounds for Energy Levels of Molecular Systems," *Battelle Memorial Institute*, Columbus, Ohio, Dec. 18, 1962.

A. Kossiakoff, Keynote Address—"Scientific Satellites—A Perspective," *American Astronautical Society*, Philadelphia, Dec. 27, 1962.

G. L. Seielstad, "A World University—What Would It Teach?" *The American Association for the Advancement of Science*, Philadelphia, Dec. 26-29, 1962.

D. W. Fox, "Error Bounds for Expectation Values," *International Symposium on Atomic and Molecular Quantum Mechanics*, Sanibel Island, Fla., Jan. 14-19, 1963.

A. J. Zmuda, B. W. Shaw, and C. R. Haave, "VLF Disturbances Related to a High-Altitude Nuclear Burst," *American Physical Society*, New York, Jan. 23-26, 1963.

JOURNAL PUBLICATIONS

The following list is a compilation of recently published books and technical articles written by APL staff members.

R. E. Gibson, "A Systems Approach to Research Management—Part 2. Technology and Its Environment," *Research Management*, V, Nov. 1962, 423-437.

G. F. Pieper, A. J. Zmuda, and C. O. Bostrom (APL) and B. J. O'Brien (State University of Iowa), "Solar Protons and Magnetic Storms in July 1961," *J. Geophys. Research*, 67, Dec. 1962, 4959-4981.

M. A. Schreiber, "Development of a Navigational System Satellite," *Signal*, XVII, Dec. 1962, 31-36.

B. S. Walker, "The U. S. Navy Navigational Satellite System," *Navy—The Magazine of Seapower*, 5, Dec. 1962, 34-36, 53.

R. E. Kemelhor, "Methods for Checking Hazardous Circuits Immediately Prior to Missile Launch," *Proc. Aerospace Forum II Session*, Institute of the Aerospace Sciences, S.M.F. Fund Paper FF 35, Jan. 1963, 36-40.

Vivian O'Brien, "Axi-Symmetric Magnetic Fields and Related Problems," *J. Franklin Inst.*, 275, Jan. 1963, 24-35.

APL COLLOQUIA

Jan. 4—"Thin Film Active Elements for Use in Microelectronics," by W. Tantraporn, General Electric Company.

Jan. 11—"A Research Program in a Mental Hospital," by T. Reynolds, St. Elizabeth's Hospital.

Jan. 18—"Recent Observations of the Artificial Radiation Belts," by W. L. Brown, Bell Telephone Laboratories.

Feb. 8—"Topics in Biomedical Engineering," by S. K. Friedlander and S. H. Talbot, The Johns Hopkins University.

WITH THE AUTHORS

F. J. Adrian, a co-author of "Trapped Free Radicals," was born in Brooklyn, N. Y., received his A.B. degree in chemistry from the Catholic University of America in 1951, and his Ph.D. degree in physical chemistry from Cornell University in 1955. Dr. Adrian was a teaching assistant in chemistry at Cornell University from 1951-1953, and was employed as a research assistant at the Naval Ordnance Laboratory in the summers of

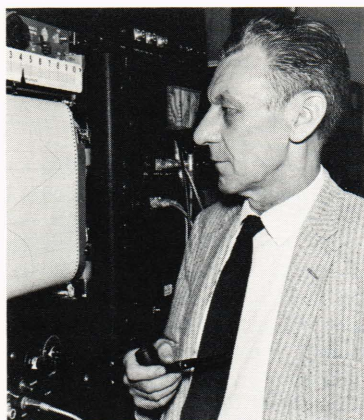


1951 and 1952. Since joining APL in 1955, he has been a chemist in the Microwave Physics Group of the Research Center. His research work has been on color centers in alkali halide crystals, molecular and crystal structure of cyanuric chloride by nuclear quadrupole resonance spectroscopy, and theoretical studies of free radicals stabilized at liquid helium temperature. Dr. Adrian is a member of the American Physical Society.

V. A. Bowers, a co-author of "Trapped Free Radicals," is a native of Baltimore, Md. He attended McCoy College, Baltimore, concurrently with his employment in weather instrument engineering and later as a chemist in the study of ceramics. He joined the staff of The Johns Hopkins

WITH THE AUTHORS

(continued)



University Department of Radiology in 1948, and in 1953 was appointed to direct its research laboratory and model shop. In that capacity he was engaged in medical research programs, particularly those involving radiological equipment and instruments. Mr. Bowers joined APL in 1955 and was assigned to the Electronic Physics Group of the Research Center. He is a member of the American Physical Society.

E. L. Cochran, a co-author of "Trapped Free Radicals," was born in Baltimore, Md., and received his B.S. degree in chemistry from Loyola College, Baltimore, in 1949. He received his M.S. degree in chemistry from Duquesne University and, in 1953, his Ph.D. degree in chemistry from the University of Notre Dame. Dr. Cochran was an Atomic Energy

Commission Fellow from 1951-1953. Prior to joining APL in 1956, he was associated with the Olin Mathieson Chemical Corporation as a research chemist in the field of chemical kinetics. At APL, Dr. Cochran is a chemist in the Electronic Physics Group of the Research Center, and has specialized in magnetic resonance of free radicals at low temperatures.



He is a member of the American Chemical Society, the American Physical Society, and the Washington Philosophical Society.

I. Katz, a native of Philadelphia, Pa., is the author of "Radar Reflectivity of the Earth's Surface." He received his B.S. degree in physics and mathematics from Temple University in 1937. From 1942-1952, Mr. Katz was associated with the



Massachusetts Institute of Technology Radiation Laboratory and the Naval Research Laboratory as a physicist. He joined APL as a physicist in 1952 to conduct experimental and theoretical studies of missile guidance, emphasizing low-angle capture and guidance problems. He also made studies of forward-scattering of radio waves off rough sea surfaces, conducted research in basic physics connected with radar map-matching, and investigated the nature of back-scattering of radar energy off sea and land surfaces. Mr. Katz is presently engaged in research on various phases of radar propagation as applied to guided missiles. He is a member of the International Scientific Radio Union, the American Physical Society, the American Meteorological Society, the American Geophysical Union, and is a Senior Member of the Institute of Electrical and Electronic Engineers.