

## Contributors to This Issue

ROBERT E. BOGNER, B.E., 1956, University of Adelaide (Australia); M.E., 1959, University of Adelaide; Postmaster-General's Department (Australia) Research Laboratories, 1957-61; Lecturer and Senior Lecturer, University of Queensland (Australia), 1961-67; Lecturer in Electrical Engineering, Imperial College of Science and Technology (London), 1967—. Mr. Bogner has been involved in a variety of studies in speech processing, simulation of communication systems including radio wave scattering phenomena, and modulation techniques. The work on digital filters was a byproduct of his researches at Bell Telephone Laboratories where he was a summer employee in 1968, working on speech communication. Member, IEE.

EDWIN L. CHINNOCK, Stevens Institute of Technology; Bell Telephone Laboratories 1939—. Mr. Chinnock has worked on microwave components, microwave radio relay, and helix waveguide fabrication. He is presently working on optical waveguide components.

ROBERT B. COOPER, B.S., 1961, Stevens Institute of Technology; M.S., 1962, and Ph.D., 1968, University of Pennsylvania; Bell Telephone Laboratories, 1961—. Mr. Cooper has worked on a variety of problems concerned with applications of probability theory to the analysis of telephone systems. He teaches the GSP course, Probability Applied to Traffic Engineering, and is currently writing a set of notes for this course. Member, Tau Beta Pi.

HERBERT E. EARL, JR., Bell Telephone Laboratories 1940—. He was engaged in work on pyrolitic film resistors, ferrites, and ferrimagnetic resonances. More recently he has worked on optical transmission techniques.

P. M. EBERT, B.S., 1958, University of Wisconsin; S.M., 1962, Sc.D., 1965, Massachusetts Institute of Technology; Bell Telephone Laboratories, 1965—. Mr. Ebert has worked on problems in communications and information theory. Member, IEEE.

DAVID D. FALCONER, B.A.Sc., 1962, University of Toronto; S.M., 1963, and Ph.D., 1967, Massachusetts Institute of Technology; post-doctoral research fellowship, Royal Institute of Technology, Stock-

holm, Sweden, 1966-67; Bell Telephone Laboratories, 1967—. Mr. Falconer is concerned with the application of communication theory and error control techniques to data communications. Member, IEEE, Sigma Xi, Tau Beta Pi.

DETLEF GLOGE, Dipl. Ing., 1961, D.E.E., 1964, Braunschweig Technische Hochschule (Germany); research staff, Braunschweig Technische Hochschule, 1961-1965; Bell Telephone Laboratories, 1965—. In Braunschweig, Mr. Gloge was engaged in research on lasers and optical components. At Bell Telephone Laboratories, he has concentrated on the study of optical transmission techniques. Member, VDE, IEEE.

SHUI YEE LEE, B.S.E.E., 1964, University of Maryland; M.S.E.E., 1965, and Ph.D. (E.E.), 1967, University of Pennsylvania; teaching fellow, the Moore School of Electrical Engineering, University of Pennsylvania, 1965-1967; member of research staff of Bockus Research Institute, Graduate Hospital of University of Pennsylvania, 1966-1967; Bellcomm, Inc., 1967—. At the University of Pennsylvania, Mr. Lee was engaged in research on synthesis techniques and methods for determining transfer functions of physical systems. At Bellcomm, he has concentrated on the study of digital-optical and electro-optical information processing. He is also interested in communication systems optimization. Member, Sigma Xi.

JACK M. MANLEY, B.S. (Electrical Engineering), 1930, University of Missouri; Bell Telephone Laboratories, 1930—. He was first concerned with theoretical and experimental studies of nonlinear electric circuits. He later worked with new multiplex methods for communication systems, including early research work on PCM. Afterward, he was engaged in transmission line research, and at present he is working on noise problems in digital transmission systems. Fellow, IEEE; member, Sigma Xi, Tau Beta Pi and Eta Kappa Nu.

F. W. MOUNTS, E.E., 1953, and M.S., 1956, University of Cincinnati; Bell Telephone Laboratories, 1956—. Mr. Mounts has been primarily concerned with research in efficient methods of encoding pictorial information for digital television systems. Member, IEEE, Eta Kappa Nu.

GRACE MURRAY, B.A., 1962, Duke University; M.S., 1966, Stevens Institute of Technology; Bell Telephone Laboratories, 1962-68; The RAND Corporation, 1968—. Miss Murray has worked extensively on traffic studies of complex telephone systems, using both stochastic simulation and mathematical techniques. Also, she has taught the GSP course, Advanced Programming. She is working on a study of the deployment and dispatching operations of the New York City Fire Department. Member, Phi Beta Kappa.

DONALD E. PEARSON, B.Sc. (Eng.), 1957, University of Cape Town; Ph.D., 1965, Imperial College, University of London; Bell Telephone Laboratories, 1965—. Mr. Pearson has been involved with picture coding, especially subjective studies of the effect of various bandwidth compression techniques on picture quality. He presently is engaged in research into the laws of color mixture in complex scenes such as television pictures and the choice of primary colors for optimum rendition of skin tones. Member, IEEE, Optical Society of America.

JOHN R. PIERCE, B.S., 1933, M.S., 1934, and Ph.D. (E.E.) 1936, California Institute of Technology. He has published 12 technical books, hundreds of papers and articles, a number of science fiction stories (some under the name J. J. Coupling), and a few poems. Some of his computer music appears on a Decca record, *Music from Mathematics*. His awards include: Eta Kappa Nu, 1942; Morris Liebmann Memorial Prize, 1947; Stuart Ballantine Medal, 1960; Air Force Association H. H. Arnold Trophy, 1962; the Arnold Air Society General Hoyt S. Vandenberg Trophy, 1963; the Edison Medal, 1963; the Valdemar Poulsen Medal, 1963; the National Medal of Science, 1963; the H. T. Cederghren Medal, 1964; Caltech Alumni Distinguished Service Award, 1966; and six honorary degrees.

Dr. Pierce is Executive Director, Research, Communications Sciences Division of Bell Laboratories, with responsibilities in radio, electronics, acoustics and vision, mathematics, economic analysis, and psychology. Member, National Academy of Sciences, National Academy of Engineering, Air Force Association; Fellow, American Academy of Arts and Sciences, IEEE, American Physical Society, Acoustical Society of America. He is a Kentucky Colonel.

VASANT K. PRABHU, B.E. (Dist.), 1962, Indian Institute of Science, Bangalore, India; S.M., 1963, Sc.D., 1966, Massachusetts Institute of Technology; Bell Telephone Laboratories, 1966—. Mr. Prabhu is a

member of Radio Research Laboratory, and his areas of interest include systems theory, solid-state microwave devices, noise theory, and optical communication systems. Member, IEEE, Eta Kappa Nu, Sigma Xi, Tau Beta Pi, AAAS.

HARRISON E. ROWE, B.S., 1948, M.S., 1950, Sc.D., 1952, Massachusetts Institute of Technology; Bell Telephone Laboratories, 1952—. His fields of interest have included parametric amplifier theory, noise and communication theory, propagation in random media, and related problems in waveguide, radio, and optical systems. Member, IEEE, Sigma Xi, Tau Beta Pi, Eta Kappa Nu.

ERHARD K. SITTIG, Dipl. Imper. College, E.E. 1954, London, U.K.; Dipl., Phys., 1955, Univ. Tübingen, Germany; Dr. rer. nat., 1959, Techn. Hochschule, Stuttgart, Germany; Bell Telephone Laboratories, 1963—. Since 1963, Mr. Sittig has been working on ultrasonic devices, notably diffraction delay lines. He now supervises a group active in ultrasonic device technology, photodetectors, and access circuitry development for an exploratory optical memory. Member, German Phys. Soc., IEEE, Acoust. Soc. of America.

FRIEDOLF M. SMITS, Dipl. Phys., 1950, Dr. rer. nat., 1950, University of Freiburg, Germany; research associate, Physikalisches Institut, University of Freiburg, 1950–54; Bell Telephone Laboratories, 1954–62; Sandia Corporation, 1962–65; Bell Telephone Laboratories, 1965—. Mr. Smits' early work at Bell Telephone Laboratories included studies of solid-state diffusion in germanium and silicon, exploratory semiconductor device development, and radiation damage studies for the *Telstar*® communications satellite. At Sandia Corporation he was responsible for work on radiation effects, particularly electron and neutron damage to semiconductors and semiconductor devices. His more recent responsibilities at Bell Telephone Laboratories were in the field of ultrasonics and acousto-optics. He is presently Director of the Semiconductor Device Laboratory at Murray Hill. Senior Member, IEEE; Member, American Physical Society, German Physical Society.

S. Y. TONG, B.S., 1955, Taiwan University; M.S., 1961, University of Vermont; Ph.D., 1966, Princeton University; Bell Telephone Laboratories, 1964—. Mr. Tong has worked on problems in coding theory. Member, IEEE, AAAS, Sigma Xi.