Contributors to This Issue

Bruce E. Briley, B.S., 1958, M.S., 1959, Ph.D., 1963, University of Illinois; Bell Telephone Laboratories, 1966—. Mr. Briley has worked on the design of an exploratory small electronic telephone office, and is now doing exploratory work in telephone switching systems processors. He is past chairman of the Chicago chapter of the IEEE Computer Group, member of the Logical Design Subcommittee of the Computer Group, and Graduate Lecturer at the Illinois Institute of Technology. Member, IEEE, ACM, Sigma Xi, Eta Kappa Nu, AAAS.

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 in the study of optical transmission techniques. Member, VDE, IEEE.

Stephen C. Johnson, A.B., 1963, Haverford College; M.A. and Ph.D., 1968, Columbia University; Bell Telephone Laboratories, 1967—. Mr. Johnson has been doing research in the applications of computers to acoustical sound generation, symbolic computation, and psychometries. Member, Sigma Xi, American Mathematical Society, AAAS, Phi Beta Kappa.

Bela Julesz, Dipl. in E.E., 1950, Budapest (Hungary) Technical University; Kandidat in Technical Sciences, 1956, Hungarian Academy of Sciences; Telecommunication Research Institute (Budapest) 1950–56; Bell Telephone Laboratories, 1956—. He first taught and did research in communication systems and his thesis work reflected his later interest in analyzing and processing pictorial information. At Bell Laboratories he was first engaged in studies of systems for reducing television bandwidth. Since 1959 he has devoted full time to visual research, particularly in depth perception and pattern recognition, about which he has written extensively. Since 1964 Dr. Julesz has been Head of the Sensory and Perceptual Processes Department, responsible for research in visual psychology and neurophysiology. Member IEEE, AAAS, Psychonomic Society, Optical Society of America.

- W. A. Kester, B.S.E.E., 1964, North Carolina State University; M.S.E.E., 1966, Duke University; Bell Telephone Laboratories, 1964—. Mr. Kester initially was involved in the design of high-speed circuits associated with analog-to-digital converters for the Nike-X program. He later participated in the development of the Bell System Reference Frequency Standard and is now engaged in work associated with an exerciser for the Sentinel system. Member, IEEE, Eta Kappa Nu, Phi Kappa Phi, Tau Beta Pi.
- S. C. Liu, B.S. in C.E., 1960, National Taiwan University; M.S., 1964, and Ph.D., 1967, University of California at Berkeley; Bell Telephone Laboratories 1967—. Mr. Liu has been doing research is applied mechanics, structural dynamics, random vibrations and earthquake engineering. Member: American Society of Civil Engineers, Seismological Society of America.

Anthony G. Lubowe, A.B., 1957; B.S. in M.E., 1958; M.S., 1959; Eng. Sc.D. in Engineering Mechanics, 1961, all from Columbia University; Bell Telephone Laboratories, 1961—. He has worked on methods of orbit determination and prediction used for the *Telstar®* communications satellite experiment, the Apollo project, and for NASA and Department of Defense studies. Recently he has been concerned with problems of satellite dynamics arising in the Sentinel project. Associate Fellow, A.I.A.A.; member, A.S.M.E., Tau Beta Pi, Phi Beta Kappa.

ELLIOTT R. NAGELBERG, B.E.E., 1959, City College of New York; M.E.E., 1961, New York University; Ph.D., 1964, California Institute of Technology; Bell Telephone Laboratories, 1964—. Mr. Nagelberg is Supervisor of the Electromagnetics Group and is responsible for research on the transmission and radiation aspects of microwave communication systems. Member, IEEE, American Physical Society, Eta Kappa Nu, Sigma Xi, AAAS.

G. Pasternack, B.S.E.E., 1966 and M.S., 1967, both from Polytechnic Institute of Brooklyn; Bell Telephone Laboratories, 1961—. Mr. Pasternack was initially engaged in the development of a *Touch-Tone*® receiver for use with key telephone systems. He later became concerned with the exploratory study of digital methods for data communication. Most recently he did development work on a low cost,

line powered data set, and is now doing exploratory work on an all digital multiple data set. Associate Member, Sigma Xi; Member IEEE.

Arno A. Penzias, B.S. 1954, City College of New York; M.A. 1958, Ph.D. 1962, Columbia University; Bell Telephone Laboratories 1961—. A radio astronomer, Mr. Penzias has been concerned mainly with problems relating to cosmology. He has also done work on antenna pointing and calibration, microwave noise measurement, and precipitation effects on atmospheric transmission. He is now working on satellite antenna problems. Member, American Physical Society, American Astronomical Society, International Scientific Radio Union, Phi Beta Kappa.

Daniel L. Pope, B.C.E., 1953; Ph.D. (Mechanics), 1961, Cornell University; Bell Telephone Laboratories, 1960—. Mr. Pope has been concerned with various aspects of defensive system analysis. He has studied the role of non-nuclear warheads and done structural analysis of various components of high performance missiles. He participated in the early phases of orbital mechanics studies for communication satellites. He has been involved in the development of advanced methods for structural analysis and worked on applying such techniques in antenna design and other fields. He supervises a continuum mechanics group in the Analytical Mechanics Department. Member, Chi Epsilon, Society of Industrial and Applied Mathematics, Tau Beta Pi.

Attilio J. Rainal, University of Alaska, University of Dayton, 1950–52; B.S.E.Sc., 1956, Pennsylvania State University; M.S.E.E., 1959, Drexel Institute of Technology; Dr. Eng., 1963, Johns Hopkins University; Bell Telephone Laboratories, 1964—. He has been engaged in research on noise theory with application to detection, estimation, and radar theory. Member, Tau Beta Pi, Eta Kappa Nu, Sigma Tau, Pi Mu Epsilon, Sigma Xi, IEEE.

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.

MICHAEL G. TAYLOR, B.A.Sc., 1961, and M.A.Sc., 1962, University of British Columbia, Vancouver, Canada; Ph.D., 1966, Massachusetts Institute of Technology; Bell Telephone Laboratories, 1967—. Mr. Taylor has worked in the areas of digital data processing and communication theory. He is concerned with designing adaptive digital filters for use in digital data transmission systems. Member, IEEE, Tau Beta Pi, Sigma Xi.

LEROY C. TILLOTSON, B.S.E.E., 1938, University of Idaho; M.S. in EE, 1940, University of Missouri; D.Sc. (Hon.), 1966, University of Idaho; Bell Telephone Laboratories, 1941—. Mr. Tillotson has worked on the design of filters and radio systems. He is Director of Radio Research and has been engaged in research on radio and optical wave propagation and systems for terrestrial and satellite applications. He spent more than a year on a leave of absence with the Institute for Defense Analysis, Washington, D. C., assigned to the Advanced Research Projects Agency, where he was concerned with communication satellites and other space-related actives.

Daniel Weiner, M.S. (physics), 1957, Ph.D. (physics), 1961, University of Chicago; Bell Telephone Laboratories 1966—. Mr. Weiner has done work on high resolution transmission scanning electron microscopy and long range laser communication systems. Member, American Physical Society, Sigma Xi, Phi Beta Kappa.

Ronald L. Whalin, B.S.M.E., 1959, New Mexico State University; M.S.E.M., 1961, New York University; M.Sc. (E.E.), 1968, Rutgers University; Bell Telephone Laboratories, 1959—. Mr. Whalin has been responsible for circuit and physical design of low-speed serial FM data sets. He is supervisor of the DDD Data Sets and Multiline Systems physical development group. Member IEEE, Sigma Tau, Pi Tau Sigma.