

Contributors to This Issue

VÁCLAV E. BENEŠ, A.B., 1950, Harvard College; M.A. and Ph.D., 1953, Princeton University; Bell Telephone Laboratories, 1953—. Mr. Beneš has been engaged in mathematical research on stochastic processes, traffic theory, and servomechanisms. In 1959–60 he was visiting lecturer in mathematics at Dartmouth College. He is the author of *General Stochastic Process in the Theory of Queues* (Addison-Wesley, 1963), and of *Mathematical Theory of Connecting Networks and Telephone Traffic* (Academic Press, 1965). Member, American Mathematical Society, Association for Symbolic Logic, Institute of Mathematical Statistics, SIAM, Mind Association, Phi Beta Kappa.

MORGAN M. BUCHNER, JR., B.E.S., 1961, Ph.D., 1965, The Johns Hopkins University; Bell Telephone Laboratories, 1965—. At Bell Telephone Laboratories, Mr. Buchner was engaged in a study of impulse noise in an effort to understand its characteristics and its effects upon data communications. At present, he is on a military leave of absence and is serving as a Lieutenant in the U. S. Army Electronics Command, Fort Monmouth, N. J. Member, IEEE, Tau Beta Pi, Sigma Xi, Eta Kappa Nu.

MYRON S. GLASS, M.S. in Physics, University of Chicago, 1926; Bell Telephone Laboratories, 1926—. Mr. Glass has been engaged in the development of electron devices and in applied magnetics and optics. He is currently supervisor of a group in the Optical Device Department engaged in the development of gas lasers and laser mirrors. Member, AAAS; senior member, IEEE.

IRA JACOBS, B.S. Physics, 1950, City College of New York; M.S., 1952, Ph.D., 1955, Purdue University; Bell Telephone Laboratories, 1955—. Mr. Jacobs has been engaged in studies of electromagnetic wave propagation in nonuniform and anisotropic media, radar cross-section and antenna analyses, and in missile guidance and detection systems. He is currently Head of the Military Communications Re-

search Department in the Detection Systems Laboratory. His current activities are largely in the field of communication theory. During the summers of 1964 and 1966 he was a member of Institute for Defense Analyses study groups considering satellite multiple access and signal processing. He has served as Project Engineer on a study of weak-signal communication techniques and is presently Project Engineer on a deep-space communication study. Senior member, IEEE; member, American Physical Society, American Association for the Advancement of Science, Phi Beta Kappa, Sigma Xi, Sigma Pi Sigma.

T. T. KADOTA, B.S., 1953, Yokahama National University (Japan); M.S., 1956, Ph.D., 1960, University of California (Berkeley); Bell Telephone Laboratories, 1960—. Mr. Kadota has been engaged in the study of noise theory with application to optimum detection theory. Member, Sigma Xi.

SUNDARAM NARAYANAN, B. Tech., 1960, Indian Institute of Technology, Kharagpur (India); M.S., 1963, Ph.D., 1965, Carnegie Institute of Technology; Bell Telephone Laboratories, 1965—. Mr. Narayanan is with the Coaxial Systems Studies group and is primarily concerned with nonlinear distortion mechanism in transistors and in transistor feedback amplifiers. Member, Sigma Xi.

F. N. H. ROBINSON, B.A., Cambridge, 1946; M.A., Oxford, 1950; D. Phil., Oxford, 1955. At Oxford since 1950, where he teaches physics, Mr. Robinson's research has mostly been in the fields of very low temperature and nuclear orientation. As a visitor to Bell Telephone Laboratories in 1954-55, he worked on noise in electron beams. Since then he has been a frequent visitor to the Laboratories and spent the year 1965-66 there when he worked on non-linear optics.

W. SHOCKLEY, B.Sc., 1932, California Institute of Technology; Ph.D., 1936, Massachusetts Institute of Technology; Bell Telephone Laboratories, 1936-1955, 1965—. Dr. Shockley is best known as the inventor of the junction transistor. For this and other contributions, to transistor physics, he received the 1956 Nobel Prize in Physics jointly with his two former colleagues at Bell Telephone Laboratories, John Bardeen and Walter H. Brattain. During World War II, on leave of absence from Bell, he served as Director of Research for the Navy's Anti-Submarine Warfare Operations Research Group and as expert consultant for the Office of the Secretary of War. He returned to Bell Laboratories after the war and became director of the

solid state physics research program. In 1953, he was named Director of Transistor Physics Research. During this period he made many contributions to solid-state physics particularly in connection with the transistor. In 1955 he left Bell Telephone Laboratories to join Beckman Instruments Inc. where he established the Shockley Semiconductor Laboratory in Palo Alto, California, for research, development and production of new transistor and other semiconductor devices. In 1965 Dr. Shockley returned to Bell Telephone Laboratories in the capacity of Executive Consultant. He presently holds the position of Alexander M. Poniatoff Professor of Engineering Science at Stanford University. More than 70 United States Patents have been granted for his inventions. Medal for Merit, Office of the Secretary of War, 1946; Air Force Association Citation of Honor, 1951; Morris Liebmann Memorial Prize, IRE, 1952; Oliver E. Buckley Solid State Physics Prize, American Physical Society, 1953; U. S. Army Certificate of Appreciation, 1953; Comstock Award, National Academy of Sciences, 1954; Holley Medal, American Society of Mechanical Engineers, 1963; Wilhelm-Exner Medal, Oesterreichischer Gewerbeverein of Austria, 1963. Honorary Doctorates from the University of Pennsylvania, 1955; Rutgers University, 1956; and Gustavus Adolphus College, 1963. Consultant, Scientific Advisory Panel of U. S. Army, Air Force Scientific Advisory Board; Fellow, IEEE, American Physical Society, American Academy of Arts and Sciences; Member, President's Science Advisory Committee Panel on Scientific and Technical Manpower, American Institute of Physics, Sigma Xi, Tau Beta Pi.

SIMON M. SZE, B.S., 1957, National Taiwan University, Taiwan, China; M.S., 1960, University of Washington; Ph.D., 1963, Stanford University; Bell Telephone Laboratories, 1963—. Mr. Sze has been concerned with the study of semiconductor device physics. At present he is engaged in studies of metal-insulator-semiconductor devices and interface states. Member, Sigma Xi, IEEE.

WILLIAM J. TABOR, B.S. (Chemistry), 1953, Rensselaer Polytechnic Institute; A.M. (Physics), 1954, Ph.D. (Chemical Physics), 1957, Harvard University; U. S. Army 1957-1959; Bell Telephone Laboratories, 1959—. His work at Bell Laboratories included research and development of microwave masers, the design of the maser for the *Telstar*[®] ground station, and investigation of light deflection techniques. He is currently involved in a study of domain wall motion in magnetic media.

