

CONTRIBUTORS TO THIS ISSUE

Michael K. Brown, B.S.E.E., 1973, M.S., 1977, and Ph.D., 1981 (Electrical Engineering), all from the University of Michigan, Ann Arbor; Burrough's Corp., 1973-1980; Bell Laboratories, 1980—. From 1973 to 1976 Mr. Brown was employed with the Burrough's Corp. and was involved in the development of ink jet printer systems. From 1976 to 1980 he continued his work with Burrough's Corp. as a consultant while pursuing his Ph.D. degree at the University of Michigan. His thesis was in the area of image processing and pattern recognition. Since 1980, he has been with the Speech Processing Group at Bell Laboratories, Murray Hill, NJ, where he has been involved in research in speech recognition and synthesis techniques.

Paul J. Burke, B.S. (Mathematics), 1940, City College of New York; Ed.M. (Educational Measurement), 1950, Harvard University; Ph.D. (Mathematical Statistics), 1966, Columbia University; Bell Laboratories, 1953—. Mr. Burke's work is in the field of telephone traffic theory and its applications. Member, Phi Beta Kappa, Sigma Xi, Operations Research Society of America; Fellow, AAAS.

Kai Y. Eng, B.S.E.E. (summa cum laude), 1974, Newark College of Engineering; M.S. (Electrical Engineering), 1976, Dr. Engr. Sc. (Electrical Engineering), 1979, Columbia University; RCA Astro-Electronics, 1974-1979; Bell Laboratories, 1979—. Mr. Eng has worked on various areas of microwave transmission, spacecraft antenna analysis, and communications satellites. He is presently a member of the Radio Research Laboratory, studying TV transmission through satellites. Member, IEEE, Sigma Xi, Tau Beta Pi, Eta Kappa Nu, Phi Eta Sigma.

Stephen R. Forrest, B.A. (Physics), 1972, University of California, Berkeley; M.S., and Ph.D. (Physics), 1974 and 1979, respectively, University of Michigan, Ann Arbor. From 1972 to 1973 Mr. Forrest worked as a Semiconductor Process Engineer at Sierra Electronics, a company operated at that time by Philco-Ford in Menlo Park, CA. He was involved in the characterization and design of long-wavelength p-i-n and avalanche photodiodes for Bell Laboratories, Murray Hill, NJ. Currently, he is Supervisor of the Integrated Opto-Electronic Devices and Circuits Group at Murray Hill.

Barry G. Haskell, B.S. (Electrical Engineering), 1964, M.S., 1965, and Ph.D., 1968, University of California, Berkeley; University of California, 1965-1968; Bell Laboratories, 1968—; Rutgers University,

1977-1979. Mr. Haskell was a Research Assistant at the University of California Electronics Research Laboratory and a part-time faculty member of the Department of Electrical Engineering at Rutgers University. At Bell Laboratories, he is presently Head of the Radio Communications Research Department, where his research interests include television picture coding and transmission of digital and analog information via microwave radio. Member, IEEE, Phi Beta Kappa, Sigma Xi.

Wendy Keilin, Massachusetts Institute of Technology (Electrical Engineering), 1980—; Bell Laboratories, 1980—. Ms. Keilin has worked in the Acoustics Research Department under the Bell Laboratories Engineering Scholarship Program. She is currently working with the CMOS Integrated Circuit Department studying hot electron injection in thin gate oxides.

Ytzhak Levendel, B.S.E.E., 1971, Technion-Israel; M.S.C.S., 1974, The Weitzman Institute of Science; Ph.D., 1976, University of Southern California; Bell Laboratories, 1976—. Mr. Levendel has done research in fault diagnosis and until lately was involved in the development of a logic and test design aid system. He is now a Supervisor in No. 5 ESS. Member, IEEE, Eta Kappa Nu.

Premachandran R. Menon, B.S. (Electrical Engineering), 1954, Banaras Hindu University; Ph.D. (Electrical Engineering), 1962, University of Washington; Bell Laboratories, 1963—. Mr. Menon has done research in switching theory and fault diagnosis and is currently involved in the development of a logic simulation system. Recipient of the Distinguished Technical Staff Award; member, IEEE.

Debasis Mitra, B.Sc., 1965, and Ph.D., 1967 (Electrical Engineering), London University; United Kingdom Atomic Energy Authority Research Fellow, 1966-1967; Bell Laboratories, 1968—. Mr. Mitra has worked on the stability analysis of nonlinear systems, semiconductor networks, growth models for new communication systems, speech waveform coding, nonlinear phenomenon in digital signal processing, adaptive filtering, and network synchronization. Most recently, he has been involved in the analytic and computational aspects of stochastic networks and computer communications. He is a Supervisor in the Mathematics of Physics and Networks Department. Member, IEEE, SIAM.

Suresh H. Patel, B.E. (Electrical), 1975, University of Zambia; M.S.E.E., 1976, Illinois Institute of Technology; Association of Amer-

ican Railroads, 1977-1981; Bell Laboratories, 1981—. At the Association of American Railroads Mr. Patel was involved in hardware/software design, development and testing of a multi-microcomputer-based instrumentation system for freight trains. He was also involved in development of analytical and computer models on track circuit. At Bell Laboratories he is a member of the Processor Design Department. Mr. Patel was a part-time instructor at Illinois Institute of Technology during 1977-1978.

Lawrence R. Rabiner, S.B. and S.M., 1964, Ph.D. (Electrical Engineering), The Massachusetts Institute of Technology; Bell Laboratories, 1962—. From 1962 through 1964, Mr. Rabiner participated in the cooperative plan in electrical engineering at Bell Laboratories. He worked on digital circuitry, military communications problems, and problems in binaural hearing. Presently, he is engaged in research on speech communications and digital signal processing techniques. He is coauthor of *Theory and Application of Digital Signal Processing* (Prentice-Hall, 1975) and *Digital Processing of Speech Signals* (Prentice-Hall, 1978). Former President, IEEE, ASSP Society; former Associate Editor, ASSP Transactions; former member, Technical Committee on Speech Communication of the Acoustical Society, ASSP Technical Committee on Speech Communication; Member, IEEE Proceedings Editorial Board, Eta Kappa Nu, Sigma Xi, Tau Beta Pi. Fellow, Acoustical Society of America, IEEE.

K. G. Ramakrishnan, B.S., 1970, M.S., 1972 (Electrical Engineering), Indian Institute of Technology, Kanpur, India; M.S., 1976, Ph.D., 1978 (Computer Science), Washington State University; Bell Laboratories, 1978—. Mr. Ramakrishnan has worked on developing analytical and simulation tools for the Advanced Communication Service project. He is currently involved in research on distributed simulation, techniques for code improvement, and queueing network packages. Member ORSA, SIAM, ACM.

Aaron E. Rosenberg, S.B. (E.E.) and S.M. (E.E.) 1960, Massachusetts Institute of Technology, Ph.D. (E.E.), 1964, University of Pennsylvania; Bell Laboratories, 1964—. Mr. Rosenberg is presently engaged in studies of systems for man-machine communication-by-voice in the Acoustics Research Department at Bell Laboratories. Member, Eta Kappa Nu, Tau Beta Pi, Sigma Xi; Fellow, Acoustical Society of America; Member, IEEE and IEEE Acoustics, Speech and Signal Processing Group Technical Committee on Speech Processing; Associate editor for speech processing, IEEE Transactions on Acoustics, Speech and Signal Processing.

R. G. Smith, B.S., 1958, M.S., 1959, and Ph.D., 1963, Stanford University; Bell Laboratories, 1963—. Mr. Smith has worked on Nd:YAG lasers, optical second harmonic generation, and optical parametric oscillators. From 1968 to 1982 he supervised groups responsible for the development of nonlinear optical devices and, more recently, detectors and receivers for lightwave systems. He is currently Head of the Lightwave Transmitters Department. Past President, Quantum Electronics and Applications Society; Co-Chairman, CLEOS '80, and Chairman, CLEO '81 Steering Committee. Member, Optical Society of America, The American Physical Society, Phi Beta Kappa, Tau Beta Pi.

Raymond Steele, (SM '80), B.S. (Electrical Engineering) from Durham University, Durham, England, in 1959, and the Ph.D. degree in 1975. Prior to his enrollment at Durham University, he was an indentured apprenticed Radio Engineer. After research and development posts at E. K. Cole Ltd., Cossor Radar and Electronics, Ltd., and The Marconi Company, all in Essex, England, he joined the lecturing staff at the Royal Naval College, Greenwich, London, England. Here he lectured in telecommunications to NATO and the External London University degree courses. His next post was as Senior Lecturer in the Electronic and Electrical Engineering Department of Loughborough University, Loughborough, Leics., England, where he directed a research group in digital encoding of speech and television signals. In 1975 his book, *Delta Modulation Systems* (New York: Halsted), was published. He was a consultant to the Acoustics Research Department at Bell Laboratories in the summers of 1975, 1977, and 1978, and in 1979 he joined the company's Communications Methods Research Department, Crawford Hill Laboratory, Holmdel, NJ.

Uzi Timor, B.S. (Electrical Engineering), 1957, M.S. (Electrical Engineering), 1963, Technion, Israel Institute of Technology, Haifa, Israel; Ph.D., 1969, University of California, Berkeley; Armament Development Authority/Israel Ministry of Defence, 1959-1966, 1972—; Member of the Technical Staff, Jet Propulsion Laboratory, Pasadena, California, 1969-1972; Adjunct Faculty (Electrical Engineering), Technion, Israel Institute of Technology, Haifa, Israel, 1972-1980; Bell Laboratories, 1979-1980. At Jet Propulsion Laboratory, Mr. Timor was engaged in research in digital communications and coding. As a consultant at Bell Laboratories, he worked on digital communications and mobile radio. Member, IEEE, Eta Kappa Nu.

Robert J. Willett, B.S.E.E., 1954, University of Maine; M.S.E.E., 1960, New York University; Bell Laboratories, 1954—. Mr. Willett has worked on circuit designs for the Titan Missile Guidance System and a forward-looking missile project, memory design for the UNICOM

project, and program development for the AUTOVON project, in the areas of call processing, terminal maintenance, and peripheral maintenance. He has also been involved in the development of the No. 4 ESS peripheral system, and the peripheral maintenance programs, particularly the craft interface control system, fault recovery, and error analysis. His current assignment is in the Software System Design and Planning Group of No. 5 ESS. He holds a patent (co-inventor) on a fault-detection arrangement for digital transmission system used in the No. 4 ESS. In July 1982 Mr. Willett received a Bell Laboratories Distinguished Technical Staff award. Member, Tau Beta Pi, Phi Kappa Phi.

Jay G. Wilpon, B.S. and A.B. (cum laude) in Mathematics and Economics, respectively, from Lafayette College, Easton, Pa., 1977; M.S. (Computer Science), 1982, Stevens Institute of Technology, Hoboken, N.J.; Bell Laboratories, 1977—. Since June 1977 Mr. Wilpon has been with the Acoustics Research Department at Bell Laboratories, Murray Hill, N.J., where he is a Member of the Technical Staff. He has been engaged in speech communications research and is presently concentrating on problems of speech recognition.

Wai Choong Wong was born on June 9, 1954, in Ipoh, Malaysia. He received the B.Sc. degree in Electronic and Electrical Engineering and the Ph.D. degree in Electronic Engineering both from Loughborough University of Technology, Loughborough, England, in 1976 and 1980, respectively. Since April 1980 he has been a Member of Technical Staff in the Communications Methods Research Department of Bell Laboratories at Crawford Hill, Holmdel, New Jersey. His current interest is in speech signal processing, particularly applied to mobile radio environment, digital modulation techniques, and simultaneous transmission of data and speech signals.

Costas S. Xydeas was born in Piraeus, Greece, in 1950. He received the first degree in Electronic Engineering from Vranas Higher School of Electronics, Athens, Greece, in 1972, and the M.Sc. and Ph.D. degrees in Electrical Engineering from Loughborough University of Technology, Loughborough, Leics., England, in 1974 and 1978, respectively. In 1977 he joined the Department of Electrical Engineering of Loughborough University of Technology as a Research Fellow and was engaged in research on low-bit-rate digitization of speech signals. He is presently a Lecturer at Loughborough University of Technology, where he is directing a research group in digital coding and processing of speech signals. His areas of interest include adaptive linear and nonlinear prediction, adaptive quantization, low-bit-rate coding of speech, suppression of acoustic noise in speech, enhancement of band-limited speech, and encryption of digitized speech signals.

