

Contributors to This Issue

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John R. Breiland, B.S. (Electrical Engineering), 1966, University of New Mexico; M.S. (Electrical Engineering), 1967, Stanford University; Bell Laboratories, 1966—. Mr. Breiland began work in computer-aided precision analog measurements. He later worked with digital circuit simulations and digital testing. His current work is in computer-based test and design aids for transmission products. Member, Phi Kappa Phi, Eta Kappa Nu, IEEE.

A. Carnevale, B.S. (Physics), 1960, Fairleigh Dickinson University; Bell Laboratories, 1969—. At Bell Laboratories, Mr. Carnevale has been engaged in nuclear magnetic resonance, electron paramagnetic resonance, and computer software. For the last two years, his work has been devoted to fiber optics.

Robert L. Carroll, B.S. (Electrical Engineering), 1967, M.S. (Electrical Engineering), 1968, Georgia Technical Institute; U.S. Air Force, 1968-1972; Bell Laboratories, 1972—. Mr. Carroll has been concerned with the development of new protector units, analysis of system protection design of transient monitoring equipment, and specification of protector requirements. He is presently supervisor of the Inductive

Interference group. Member, IEEE Surge Protective Devices Committee, Communications Society, Eta Kappa Nu, Phi Kappa Phi, Pi Mu Epsilon.

James L. Flanagan, B.S. (Electrical Engineering), 1948, Mississippi State University; M.S., 1950, Sc.D., 1955, Massachusetts Institute of Technology; Bell Laboratories, 1957—. Mr. Flanagan is Head, Acoustics Research Department. He has project responsibilities for digital voice encoding, speech recognition and synthesis, and electro-acoustic systems and transducers. Member, National Academy of Engineering.

A. A. Fredericks, B.S. (Mathematics) 1962, Fairleigh Dickinson University; M.S., 1965, Ph.D. (Mathematics) 1970, Courant Institute, N.Y. University; Bell Laboratories, 1961—. Mr. Fredericks worked in the military systems area until 1970. As supervisor of the performance analysis methods group in the Network Performance Planning Center, he is presently responsible for developing methods for analyzing the performance of a variety of processor-based systems including auxiliary microprocessors, mini-computer-based operations support systems, data networks, and stored program control switching systems.

Robert A. Friedenson, B.E.E., 1965, M.S., 1966, and Ph.D., 1969, Cornell University; Bell Laboratories, 1969—. Mr. Friedenson initially was involved in the design and development of RC active filters for PCM channel banks. In 1971, he was appointed supervisor of a group responsible for computer aids to circuit design and testing. In 1976, he took responsibility for a group in the Components Technology Department involved in the specification, evaluation, and implementation of an integrated test development system for various interconnection levels. In 1979, he returned to the Computer Aided Design Department, where his current interests are design aids for test development, logic simulation, and LSI design, and creating a computing environment that facilitates the use of computer aids that run on diverse computers. Member, IEEE, Eta Kappa Nu, Tau Beta Pi.

Stamatios V. Kartalopoulos, B.Sc., Physics, 1968, University of Athens, Greece; Diploma in Electronics, 1971, University of Wales Institute of Science and Technology, United Kingdom; Digital Systems Designer, 1973, Greek Atomic Energy Commission; M.Sc., E.S., 1975, Ph.D., 1978, University of Toledo; Assistant Professor, 1979, University

of Toledo; Bell Laboratories, 1979—. At Bell Laboratories Mr. Kartalopoulos has been developing architectures for implementation of the digital line interfaces of the loop.

Vassilis G. Keramidas, Ph.D. (Solid State Science), 1973, Materials Research Laboratory, Pennsylvania State University; Bell Laboratories, 1973—. Mr. Keramidas has worked on III-V LEDs for displays and optoelectronics, and on ohmic contacts to III-V compound semiconductors. He is currently involved in the crystal growth and characterization of $\text{Ga}_{1-x}\text{Al}_x\text{As}$ and $\text{Ga}_x\text{In}_{1-x}\text{As}_y\text{P}_{1-y}$ LEDs for lightwave communications. Member, Electrochemical Society, American Association for the Advancement of Science, American Association for Crystal Growth.

Victor B. Lawrence, B.Sc, 1968, D.I.C., 1970, Ph.D., 1972, London University; General Electric Company of Great Britain, Hirst Research Center, 1973; Staff of Kumasi University, 1974; Bell Laboratories, 1974—. Mr. Lawrence's technical experience has been in the field of digital signal processing and data communications, data communications security, and microcomputer systems. Associate editor, IEEE Communications magazine.

Ronald Longhitano, B.S. (Aerospace Engineering and Applied Mechanics), 1970, M.S. (Applied Mechanics), 1972, Ph.D. (Applied Mechanics), 1974, Polytechnic Institute of Brooklyn; Bell Laboratories, 1973—. Mr. Longhitano was a member of the Public Telephone Station Department until January 1978. He is currently a supervisor in the Business Terminals Physical Design Department. Member, Sigma Xi.

Patricia H. McDonald, B.A. (Mathematics), 1963, Trinity College; M.A.T., 1964, University of Massachusetts; Bell Laboratories, 1964—. Mrs. McDonald has developed computer software for general-purpose optimization, tolerance analysis applications, switched network analysis, simulation of digital systems, synthesis and analysis of passive and metal reed filters, and logic synthesis. After being involved in the design and development of Designer's Workbench, she is currently supplementing this system with physical design applications. Member, ACM, IEEE Design Automation Technical Committee; Publications Chairman for the Design Automation Conference in June, 1981.

Patricia S. Miller, B.S. (Statistics), 1970, West Virginia University, M.S. (Statistics), 1972, Rutgers University; Bell Laboratories, 1970—. Ms. Miller has been a statistical consultant and data analyst in the Applied Statistics Department since joining Bell Laboratories. One of her current projects involves research on new approaches to demand analysis for WATS. Member, American Statistical Association, Phi Beta Kappa, Pi Mu Epsilon.

Arun N. Netravali, B. Tech. (Honors), 1967, Indian Institute of Technology, Bombay, India; M.S., 1969, and Ph.D.(E.E.), 1970, Rice University; Optimal Data Corporation, 1970-1972; Bell Laboratories, 1972—. Mr. Netravali has worked on problems related to filtering, guidance, and control for the space shuttle. At Bell Laboratories, he has worked on various aspects of signal processing. He is presently Head of the Visual Communication Research Department and a Visiting Professor in the Department of Electrical Engineering at Rutgers University. Member, Tau Beta Pi, Sigma Xi; Senior Member, IEEE.

Lawrence A. O'Neill, B.S.E.E., 1956, The University of Maryland; M.E.E., 1959, The Catholic University of America; Ph.D., 1966, The Johns Hopkins University; Department of Defense, 1956-1967; Bell Laboratories, 1967—. Initially, Mr. O'Neill was engaged in developing statistical simulations of transmission systems. In 1971, he became supervisor of a group responsible for developing general-purpose statistical and nonlinear analysis programs. In 1975, he became supervisor of the Design Aids and Computation group. This group was engaged in developing the software needed to simplify the application of design aids for simulation and physical design used on transmission projects at Holmdel. This work led to his origination of the Designer's Workbench project to further simplify the tasks of the system developers. His current interests are in software engineering and the provision of enhanced capabilities for distributed computation. Member, IEEE, Tau Beta Pi, Eta Kappa Nu, Phi Kappa Phi, Sigma Xi.

Un-Chul Paek, B.S. (Engineering), 1957, Korea Merchant Marine Academy, Korea; M.S., 1965, Ph.D., 1969, University of California, Berkeley; Western Electric, 1969—. At the Western Electric Engineering Research Center, Princeton, N. J., Mr. Paek has been engaged primarily in research on laser material interaction phenomena and fiber optics. Member, Optical Society of America, American Ceramic Society, Sigma Xi.

George E. Peterson, B.S. (Physics), 1956, Ph.D. (Solid State Physics), 1961, University of Pittsburgh; Bell Laboratories, 1961—. At Bell Laboratories, Mr. Peterson did studies on low-noise amplifiers for a short period of time. He then studied laser crystals, nonlinear optic materials, glass structure, and recently propagation of light in optical fibers. Member, American Physical Society, American Ceramic Society, Society for Glass Technology, and the American Crystallographic Association.

John D. Robbins, B.S.E.E., 1976, Rutgers University; Rutgers University, 1979—; Bell Laboratories, 1976—. Mr. Robbins is a member of the Visual Communication Research Department, where he has worked on various picture coding problems. Member, Tau Beta Pi, Eta Kappa Nu.

A. C. Salazar, A.B., B.S.E.E., 1964, M.S., 1965, University of New Mexico; Ph.D., 1967, Michigan State University; Bell Laboratories, 1967-74, 1976—, United Nations Tech. Assistance Programme, Mexico City, 1975-76. At Bell Laboratories, Mr. Salazar has worked on the statistical evaluation of voiceband modem performance data. He subsequently worked on the design of modem equalizers, digital signal processing, and high-speed processor implementation of data sets. Recently, he has been involved in the development of Dataphone II, a new software-based voiceband data communications service.

Irwin W. Sandberg, B.E.E., 1955, M.E.E., 1956, and D.E.E., 1958, Polytechnic Institute of Brooklyn; Bell Laboratories, 1958—. Mr. Sandberg has been concerned with analysis of radar systems for military defense, synthesis and analysis of active and time-varying networks, several fundamental studies of properties of nonlinear systems, and with some problems in communication theory and numerical analysis. His more recent interests include macroeconomics, compartmental models, the theory of digital filtering, and global implicit-function theorems. Former Vice Chairman IEEE Group on Circuit Theory, and Former Guest Editor IEEE Transactions on Circuit Theory Special Issue on Active and Digital Networks. Fellow and member, IEEE; member, American Association for the Advancement of Science, Eta Kappa Nu, Sigma Xi, and Tau Beta Pi.

Timothy J. Thompson, B.S. (Computer Science), 1976, University of Illinois; M.S. (Computer Science), 1978, University of Illinois; Bell

Laboratories, 1978—. Mr. Thompson has developed software for generalized translation and data-base storage of physical design application input languages, user interfaces for access to distributed applications on a computer network, and a version control mechanism for production use and development of software systems. He is currently working on continued development of Designer's Workbench. Member, Tau Beta Pi, Phi Kappa Phi.

Christie R. Zipfel, A.B. (Physics), 1963, Vassar College; M.S., 1965, and Ph.D., 1969 (Physics), University of Michigan; Bell Laboratories, 1974—. Mrs. Zipfel first came to Bell Laboratories as a Post-Doctoral Associate in the Solid State and Low Temperature Physics Research Department, working with C. C. Grimes on electrons on the surface of liquid helium. Since 1976, she has been doing reliability studies of AlGaAs LEDs in the Optoelectronic Device and Display Department.