Authors

Bernell E. Argyle

Research Division, Yorktown Heights, New York

Dr. Argyle is a member of the magnetic properties group at the Thomas J. Watson Research Center. He joined IBM Research in 1959. His current interests include experimental investigations of unusual phenomena in dynamic behavior of magnetic bubbles. He received his B.S. in 1953 in engineering physics from Lehigh University, an M.S. in physics from Carnegie Institute of Technology in 1959, and a Ph.D. in engineering and applied science in 1971 from Yale University. In addition to recent work on magnetic bubbles and bubble materials, he has provided experimental verification of spin waves in $3d$ metals, studied magneto-optic effects, magnetic anisotropy, and magnetostriction in rare earth chalcogenides, and by light scattering experiments has determined crystal fields, exchange splittings, and phonon levels in rare earth garnets. Dr. Argyle is a member of the American Physical Society.

Praveen Chaudhari

Thomas J. Watson Research Center, Yorktown Heights, New York

Dr. Chaudhari is currently Manager of the Department of Thin Film Physics in the Research Division. He joined IBM in 1966 at the Research Center to work on defects in crystalline solids, the phenomenon of superplasticity, and problems in thin films. Dr. Chaudhari's education includes a B.S. in Metallurgy from the Indian Institute of Technology, Kharagpur, 1961 and an M.S. and D.Sc., both in Metallurgy and Materials Science, from the Massachusetts Institute of Technology, which he received in 1963 and 1965, respectively. He previously was with MIT as a Research Assistant from 1961 to 1965 and a Research Associate from 1965 to 1966. In 1963 he worked for a brief period with the Danish Atomic Energy Commission. He is a Fellow of the American Physical Society.

Chin-Long Chen

System Products Division, Poughkeepsie, New York

Dr. Chen is a staff engineer in the reliability and technology analysis group. He joined IBM in 1974. Currently he is working on the theory and the applications of error-correcting codes. He was an assistant electrical engineer at the University of Hawaii in 1969 and received his Ph.D. degree in electrical engineering in that year. From 1970 to 1974, he was an assistant professor at the University of Illinois. He is a member of the Institute of Electrical and Electronics Engineers.

Tien-Chi Chen

Research Division, San Jose, California

Dr. Chen is manager of a technology and systems group at the Research Laboratory in San Jose. He joined IBM in 1956 and has been involved in research in large machine design and programming, parallelism and pipelining, numerical analysis, quantum chemistry and magnetic bubbles. He received an Sc.B. in chemistry from Brown University and an M.A. in chemistry in 1952 and a Ph.D. in physics in 1957, both from Duke University. Dr. Chen is a member of the Institute for Electrical and Electronics Engineers and has been an IEEE Computer Society Distinguished Visitor since 1972. He also belongs to the Association for Computing Machinery, American Mathematical Society, American Physical Society, Phi Lambda Upsilon, Sigma Pi Sigma, Sigma Xi, and Phi Beta Kappa. He is the recipient of two IBM Outstanding Contribution Awards and three Invention Achievement Awards.

Robert Wade Cole

General Products Division, San Jose, California

Mr. Cole is a member of the mathematics and scientific applications department in San Jose and has been involved in scientific applications of computing since he joined IBM in 1966. His current interests are in computer simulation of physical systems and the art of programming. He holds the B.A. and M.A. degrees in pure and applied mathematics from the University of Texas. After receiving the M.A. degree in 1953, he joined the Douglas Aircraft Company, Long Beach, California, where he worked in airframe structures analysis. From 1958 to 1961, he was a mathematical specialist with the Lockheed Missiles and Space Company, Palo Alto, California. In 1961, he joined Stanford University as a research associate of the Computation Center and from 1963 to 1966 was Associate Director for Operations of the Center. He taught computer science courses at Stanford and during 1973 and 1974 was on an IBM Technical Vitality leave to the University of Kentucky as a visiting associate professor of computer science. Mr. Cole is the author of a textbook, *Introduction to Computing*, and is a member of the Association for Computing Machinery.

Thomas W. Collins

General Products Division, San Jose, California

Dr. Collins is an advisory engineer in the magnetic bubble device group at the General Products Division development laboratory in San Jose. His current technical interests include the design and modeling of magnetic bubble devices. He joined the IBM Corporation in 1956 in San Francisco as a field engineer and since 1962 has worked in the development laboratory in San Jose. He received the B.S.E.E. degree in 1961 from San Jose State University, the M.S.E.E. degree in 1963 from the University of California, Berkeley, and the Ph.D. degree in 1973 from the University of California, Davis. Dr. Collins is a member of the Institute of Electrical and Electronics Engineers, Eta Kappa Nu, Sigma Xi, and is a Registered Professional Engineer in California.

Sigrid R. Herd

Research Division, Yorktown Heights, New York

Mrs. Herd joined IBM in 1955. Since 1958 she has been a senior research engineer in the Research Division. Her current work at the Thomas J. Watson Research center is in electron microscopy of amorphous thin films and Lorentz microscopy of magnetic amorphous alloys. She attended the Technische Hochschule at Frankfurt, Germany and the School of Metallurgy and Mining, Columbia University. Mrs. Herd is a member of the Electron Microscope Society of America.

David B. Lomet

Research Division, Yorktown Heights, New York

Dr. Lomet is a member of the experimental compiling systems group at the Thomas J. Watson Research Center and is currently on sabbatical leave to the University of Newcastle-upon-Tyne. He joined IBM in 1963 as a programmer with the Federal Systems Division in the Washington, D.C., area. While with FSD, his work involved the design, implementation, and use of a number of information retrieval systems. He won an IBM resident graduate fellowship in 1966 and attended the University of Pennsylvania, obtaining his Ph.D. in computer science in 1969. His dissertation was in the field of the syntax of programming languages. Since joining the Research Division, Dr. Lomet has pursued the investigation of the syntax and semantics of programming languages. He received a B.S. degree in physics from Lafayette College in Easton, Pennsylvania, in 1961 and an M.S. degree in mathematics from George Washington University in 1966. Dr. Lomet is a member of the Association for Computing Machinery, the Institute of Electrical and Electronics Engineers, Phi Beta Kappa, and the American Association for the Advancement of Science.

George Markowsky

Research Division, Yorktown Heights, New York

Dr. Markowsky is a member of the theory of programming group at the Thomas J. Watson Research Center. He joined IBM in 1974. His current interests include the applications of order theory to computation, combinatorics, and analysis of algorithms. He received his B.A. in mathematics from Columbia University in 1968 and his M.A. in mathematics from Harvard University in 1969. From 1969 to 1972, he was instructor and then assistant professor of mathematics at St. Mary's College of Maryland in St. Mary's City, Maryland. He returned to Harvard and received his Ph.D. in mathematics in 1973. He stayed on at Harvard as a postdoctoral fellow in 1973 and 1974. Dr. Markowsky is a member of the American Mathematical Society, the Mathematical Association of America, and Phi Beta Kappa.

Johann H. Meier

System Communications Division, Endicott, New York

Dr. Meier is a senior engineer at the terminal printer technology group at Endicott. Currently he is involved in the deveiopment of both impact and non-impact print mechanisms. He received his M.S. in civil engineering from the Swiss Federal Institute of Technology in 1936 and a Sc.D. degree from MIT in 1939. From 1939 to 1956 he was with Bucyrus-Erie Co., South Milwaukee, WI, where he was in charge of research. In 1957 he joined General Electric Co. at Schenectady, NY, holding positions as section manager and consulting engineer. Since he joined IBM in 1961 he has received five levels of invention awards and an Outstanding Invention Award. He is past president, honorary member, and Fellow of the Society for Experimental Stress Analysis, and a member of the American Society of Mechanical Engineers and of Sigma Chi. In addition to publishing numeral journal papers, Dr. Meier has written the chapter on strain rosettes in the *Handbook of Experimental Stress Analysis*.

Walter T. Pimbley

System Communications Division, Endicott, New York

Dr. Pimbley is a senior physicist in the printer technology group in the Endicott laboratory. He has been engaged in the study of printer components since 1969. Between 1959, when he joined IBM, and 1969, Dr. Pimbley was a member of an advanced technology group, where he considered problems of surface adsorption, ellipsometry, and metal fatigue. For a year and a half before joining IBM, he was an instructor of physics at the Pennsylvania State University. His education includes an A.B. in mathematics and physics from Kent State University in 1952, and an M.S. and Ph.D. in physics from the Pennsylvania State University in 1955 and 1959, respectively. He is a member of the American Physical Society.

Jerry W. Raider

System Communications Division, Endicott, New York

Mr. Raider is an advisory engineer in the printer technology group at the Endicott Laboratory. He joined IBM in 1959 at Owego, NY, working in an advanced development group. His work has been in the fields of automatic control, hydraulics, vibrations, and high-speed mechanisms. He received B.S. and M.S. degrees in mechanical engineering from Purdue University in 1957 and 1959, respectively, specializing in automatic control. He is a member of the American Society of Mechanical Engineers and Tau Beta Pi. Mr. Raider has been issued several patents and in 1973 received an IBM Outstanding Invention Award.

Barry K. Rosen

Research Division, Yorktown Heights, New York

Dr. Rosen works on the theory of programming in the computer sciences department at the Thomas J. Watson Research Center, which he joined in 1971. His research interests include methods for certifying and optimizing high-level language programs, semantics of programming languages, and analysis of algorithms. Dr. Rosen received his B.A. in mathematics in 1966 and his Ph.D. in applied mathematics in 1971 from Harvard University. He is a member of the Association for Computing Machinery and of the Society for Industrial and Applied Mathematics.

Robert A. Rutledge

System Products Division, Poughkeepsie, New York

Dr. Rutledge is an advisory engineer in the reliability and technology analysis department in Poughkeepsie. His current technical interests include the construction and evaluation of error correcting codes, and the reliability of redundant systems. He joined IBM in 1968 in the Components Division in Poughkeepsie. From 1968 to 1973 he worked in product assurance on statistical techniques for the prediction and measurement of component reliability. Dr. Rutledge received the B.S. degree in mathematics from Iona College, New Rochelle, New York, in 1963, and the Ph.D. in mathematical statistics from Columbia University in 1970. He is a member of the American Statistical Association, the Institute of Mathematical Statistics, and Sigma Xi.

John C. Slonczewski

Research Division, Yorktown Heights, New York

Dr. Slonczewski joined the IBM Research Laboratory in Poughkeepsie in 1955. He is a theoretical physicist who, since 1971, has been leading a group doing research in magnetic bubbles at Yorktown Heights. His current technical interest resides primarily in dynamical properties of bubble domains. He received the B.S. degree at Worcester Polytechnic Institute in 1950, and the Ph.D. degree in physics at Rutgers University in 1955. He is a fellow of the American Physical Society and a member of the Institute of Electrical and Electronics Engineers.

Chin Tung

Research Division, San Jose, California

Dr. Tung is a member of the technology and system project of the computer science department at the San Jose Research Laboratory. He received the B.S.E.E. degree from the National Taiwan University, China, the M.S.E.E. degree from Rice University, Houston, Texas, and the Ph.D. degree in engineering (computer science) from the University of California at Los Angeles, in 1961, 1964, and 1968, respectively. From 1962 to 1964 he was associated with the Rice University Computer Project, working on computer measurement and peripheral equipments. From 1964 to 1968 he was a post-graduate research engineer at the University of California at Los Angeles, participating in the arithmetic processor design for the variable structure computer project. Since joining the San Jose Research Laboratory in 1968, he has been engaged in the study of advanced machine organization, storage management, program behavior, and language-oriented machine design. Currently he is involved in the systems applications of magnetic bubble technology. Dr. Tung is a member of the Institute of Electrical and Electronics Engineers and the Association for Computing Machinery, and is also a lecturer at the University of Santa Clara in Santa Clara, California.

Otto Voegeli

General Products Division, San Jose, California

Dr. Voegeli is a development engineer and manager of the bubble technology department in the advanced technology group. He joined IBM in 1959 at the Zurich Research Laboratory and in 1962 transferred to the Thomas J. Watson Research Center, where he continued his work on thin magnetic films. While on educational leave from IBM, he received an M.Sc. degree in 1968 and a Ph.D. degree in 1971 from Purdue University. He has since joined the General Products Division, working on exploratory bubble devices. Dr. Voegeli is a member of Sigma Xi and the Institute of Electrical and Electronics Engineers.