Authors

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Dr. Barrall received his B.S. degree in chemistry in 1951 and his M.S. degree in analytical chemistry in 1957, both from the University of Kentucky at Lexington. He received a Ph.D., also in analytical chemistry, from the Massachusetts Institute of Technology in 1961. After graduation he joined the Chevron Research Corporation in Richmond, California, and did research on polymer thermodynamics, catalysis, liquid crystal thermodynamics, gel chromatography, and optical microscopy. He joined IBM Research in 1969 and has continued research on many of the same topics. From 1974 to 1975 he taught at the Institute of Materials Science at the University of Connecticut, Storrs, while on leave from IBM. Dr. Barrall has received the Mettler Award in thermal analysis, and an IBM Outstanding Contribution Award for his characterization of polymers work.

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Mr. Bayer is an advisory physicist in the mechanics and metallurgy department at the Endicott development laboratory. He joined IBM in 1958 and has held a variety of positions in the areas of printer technology and materials. His principal activity has been in tribology. He obtained a B.S. degree in physics from St. John's University, Jamaica, New York, in 1956, and an M.S. in applied mathematics from Brown University, Providence, Rhode Island, in 1959. Mr. Bayer is coauthor of "Handbook of Analytical Design for Wear" and an editor of "Selection and Use of Wear Tests for Metals," an ASTM Special Technical Publication. He has received two IBM Outstanding Contribution Awards, one for a friction and wear design approach and the other for a study of fatigue in welds.

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Mr. Brooms is a senior associate engineer in the product test group. He joined IBM in 1972 at San Jose, where he worked for several years on component design and analysis in the fuser development engineering group for the advanced printers. He joined the product test group in 1976 and has been involved with the testing of the IBM 3800 printer materials and follow-on products. Mr. Brooms received a B.S. in engineering science from San Francisco State University in 1970, and an M.S. in mechanical engineering from Stanford University in 1972. He is a member of the Northern California Council of Black Professional Engineers and is a Registered Professional Engineer in California.

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Mr. Cameron is a staff engineer in the advanced printer development group at San Jose. Prior to joining IBM in 1965, he worked on earth motion studies and advanced magnetic logic devices at Stanford Research Institute. At IBM he has primarily designed control systems for electron-beam recorders and nonimpact printers.

William H. Chu

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Dr. Chu is in the organic and polymer materials group at San Jose, where he joined IBM in 1969. His current research interests are in the areas of electrical and optical properties of polymers. He received his B.S. in chemical engineering from the National Taiwan University, Taipei, in 1959, his M.S. degrees in chemical engineering and chemistry from the University of Massachusetts, Amherst, in 1965 and 1967, and his Ph.D. in chemistry, also from the University of Massachusetts, in 1969.

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Dr. Cox joined IBM in 1963 at the Research laboratory in San Jose. He has worked as a synthetic-organic chemist with light sensitive diazonium compounds, organic photoconductors, photoresists, and liquid crystal compounds. Prior to IBM, Dr. Cox worked for Canadian Industries Limited, General Amline and Film, and Bruning Corporation. He received his B.S. in 1950 from the University of Western Ontario, London, and his M.S. and Ph.D. in 1977 from the University of Connecticut, Storrs.

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Mr. Doelman received his M.S. degree in experimental physics from the University of Utrecht in the Netherlands. In 1968 he joined IBM Nederland as a salesman in the University and Research Branch of the Data Processing Division. In 1974 he was assigned to the IBM Research laboratory in San Jose, California where Mr. Doelman contributed to the development of interactive procedures for data reduction and analysis. Recently he returned to IBM Nederland.

Martin H. Dost

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Mr. Dost is an advisory engineer in the mathematical analysis and simulation department at San Jose. He joined IBM in 1958 at Poughkeepsie, analyzing control systems through analog simulation. After applying digital simulation languages to the design of dynamic systems in peripheral equipment, he joined a language development effort in 1972. Mr. Dost studied electrical engineering at the Technical University of Berlin, Germany until 1955. In 1957 he received an M.S. degree in engineering science from the University of California at Berkeley. Mr. Dost is a member of the Society for Computer Simulation and is IBM's official representative to that society.

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Mr. Findley is a senior engineer in advanced product development subsystem engineering, where he has been responsible for the microprogram and architecture of the IBM 3800. He joined IBM in 1962 after receiving a B.S. in mathematics from Oregon State University, Corvallis. Mr. Findley has worked on diagnostic programs for control systems, direct access storage devices, and on data management for OS/360. He received IBM Outstanding Contribution Awards in 1967 and 1974 for development of diagnostic programs; two IBM Outstanding Invention Awards in 1975 for character and copy modification and for merger and multiple-translate tables in the IBM 3800; and an IBM Invention Achievement Award in 1975. Mr. Findley is a member of Pi Mu Epsilon.

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Before joining IBM Research in 1967, Miss Gregges worked as a mathematics aide at the NASA Ames Research Center, Sunnyvale, California. She graduated from San Jose City College, California, in 1974 with an A.A. in mathematics and is currently a senior majoring in mathematics at San Jose State University. At IBM she has worked in the areas of gel chromatography and thermal analysis for the past seven years. Miss Gregges coauthored much of the coding on the first successful series of on-line data acquisition programs for gas phase chromatography, differential thermal analysis, and thermal gravimetric analysis for the IBM System 7 and 1800 computers.

John T. Jacobs

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Dr. Jacobs is currently working on laser addressed liquid crystal displays. He received his B.A. from the University of Toronto, Canada, in 1962, and an M.A. and a Ph.D. from the University of Illinois, Urbana, in 1967. After one year as a postdoctoral fellow at the Consolidated Sciences Laboratory, University of Illinois, Dr. Jacobs joined the IBM Research staff in San Jose, where he has worked on beam addressable ferroelectric-photoconductor memories in the inorganic materials department. He has also fabricated PtCoCr materials for thermomagnetic recording. In 1973 he joined the input-output technology group where he studied laser transfer printing prior to his present interest in liquid crystal displays.

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Dr. Johnson graduated with a B.A. degree from the College of Wooster, Ohio, in 1943. He served in the U.S. Navy from 1943 to 1946, and in 1950 received a Ph.D. in physical chemistry from Brown University, Providence, Rhode Island. From 1950 to 1968, he was employed by the Chevron Research Company in Richmond, California. In 1968 he joined the University of Connecticut, where he is currently a Professor of Chemistry and Associate Director of the Institute of Materials Science. From 1974 to 1975 he was a visiting scientist at the IBM Research Laboratory in San Jose. Dr. Johnson received the American Chemical Society Award in Chromatography and Electrophoresis in 1970. His research interests are the mechanical properties, lifetime prediction, and analysis and characterization of polymers.

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Mr. Leabo is an advisory engineer in the advanced products area of the development laboratory where he is concerned with microprogrammed control electronics for peripheral input/output devices. He has worked on the IBM 1130 small scientific computing system and the IBM 3800 printing subsystem. He joined IBM in 1963 after receiving his B.S. in electrical engineering in 1961 and his M.S. in electrical engineering, both from Oregon State University, Corvallis.

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Mr. Michaelson is an associate editor of the *IBM Journal of Research and Development*. He joined IBM at World Headquarters in New York in 1956 and was assigned to the *Journal* staff at that time. He has been author as well as editor and has published journal papers in electron tube physics, physical electronics, powder metallurgy, and ceramic materials. Mr. Michaelson received a B.A. degree in physics at New York University in 1955. He was employed at Sylvania Electric Products, Inc., Baydie, New York, from 1946 to 1956, where he was head of the technical information department for the atomic energy division. He is an associate fellow of the Society for Technical Communication and a senior member of the Institute of Electrical and Electronics Engineers.

James L. Sirico

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Mr. Sirico has been associated with IBM since 1955 and currently works in paste-substrate process engineering with the module packaging products group in Endicott. In his early years in IBM, he was instrumental in the development and machining of parts for high speed printers. He has also worked with a physical technology group, developing an analytical design handbook for wear processes, and with a mathematical design group. He graduated from the School of Aeronautics, New York, in 1939, and from the U.S. Army Ordnance School for Machine Technology, Aberdeen, Maryland, in 1943.

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Mr. Slutman is a senior engineer and manager in the advanced products area of the development laboratory. He received his B.S. in electrical engineering in 1957 at the University of California, Berkeley, and his M.S. in electrical engineering and computer science in 1966 at the University of Santa Clara, California. Mr. Slutman joined IBM in 1959 at the San Jose laboratory and has since been engaged in work on IBM System/360, Model 20, System 3 and associated input/output products, and the IBM 3800 printing subsystem. He is a member of the Institute of Electrical and Electronics Engineers, Eta Kappa Nu, and Tau Beta Pi.

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Mr. Svendsen is in the advanced product development group in San Jose where he joined IBM in 1965. He was on military leave from 1966 through 1968 working on the development of meteorological instruments in Silver Spring, Maryland, and hydrography and oceanography in the North Pacific and the Bering Sea. Mr. Svendsen received his B.S. in mechanical engineering from California State Polytechnic College at San Luis Obispo in 1965 and his M.S. in mechanical engineering from San Jose State University in 1973 under the IBM Graduate Work-Study Program.

Ulo Vahtra

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Mr. Vahtra is in the printer technology group. He joined IBM in 1956 at San Jose and has worked on a series of photographic processes for photomemory, document storage, and copier and printer applications. Since 1964 his assignments have been concentrated in electrophotography and its applications. He received his B.S. from Fresno State College, California, in 1956 and his M.S. from San Jose State University in 1961, both in chemistry. He received an IBM Outstanding Invention Award in 1967 and an IBM Corporate Invention Award in 1968, both for the joint development of organic photoconductors. Mr. Vahtra is a member of the Society of Photographic Scientists and Engineers.

Colin H. West

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Dr. West joined IBM in 1971 at the Zurich laboratory and has worked on laboratory automation, computer graphics, communications, and computer networks. He is currently working on the further development of communications protocol validation. He received a B.S. degree in physics from Imperial College, London, in 1960, and a Ph.D. in elementary particle physics in 1965, also from Imperial College. From 1961 to 1966 he was a Visiting Scientist at the European Organization for Nuclear Research (CERN) in Geneva, Switzerland, and subsequently held postdoctoral positions in the physics department and in the Moore School of Electrical Engineering of the University of Pennsylvania, Philadelphia. Dr. West is a member of the American Physical Society.

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Dr. Zafiropulo is a member of the data networks group and is currently working in the area of protocol validation. He joined IBM in 1968 and has worked in the areas of speech recognition, in-house communications, and data networks. He obtained his B.S. in electrical engineering and his Ph.D. at the Swiss Federal Institute of Technology, Zurich, in 1961 and 1968. In 1962 Dr. Zafiropulo spent one year at the European Organization for Nuclear Research (CERN) in Geneva, Switzerland, working in the areas of spark and Wilson chambers. In 1963 he joined the Hasler Stiftung Research Laboratory and worked on pulse-code-modulated transmission. In 1973 he received an IBM Outstanding Contribution Award for work on the digital PABX for voice and data. Dr. Zafiropulo is a member of the Association for Computing Machinery.

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