

Authors

Gene M. Amdahl

B.S. in Physics 1948, South Dakota State College; M.S. in Physics, 1949, and Ph.D., 1952, University of Wisconsin. Between 1952 and 1956 he was associated with the IBM Development Laboratory at Poughkeepsie. During the period he was project engineer and systems designer of the IBM 704 and STRETCH computers. From 1956 to 1960 Dr. Amdahl worked at the Ramo Wooldridge Corporation and at Aeronutronic Systems, Inc., where he was manager of Data Processing Engineering. He rejoined IBM in Research in 1960 as Director of Experimental Machines. He has been Advanced Systems Design Manager in the Data Systems Division, Poughkeepsie, and is currently Technical Manager of Large Scientific Systems.

Nils R. D. Åslund

Fil. lic. in Physics, 1956, University of Stockholm. Lecturer and temporary Associate Professor in Applied Mathematics at the Royal Institute of Technology, Stockholm, 1958-1959. Since 1960, sponsored by the Swedish Council for Technical Research to conduct research in the application of digital computers to emission spectroscopy. Consultant to the IBM Nordic Laboratory, Stockholm.

Edward A. Bartkus

B.S., 1955, University of Rochester; M.S., 1958, and Ph.D., 1959, Carnegie Institute of Technology. Employed by American Cyanamid Co., 1959-1962. Joined IBM in 1962 and is presently engaged in research in the general area of physical organic chemistry at Thomas J. Watson Research Center. Member of the American Chemical Society and Sigma Xi.

Gerrit A. Blaauw

B.S. in Electrical Engineering, Lafayette College, 1948; Ph.D. in Applied Science, Harvard University, 1952. While at Harvard, was a member of the staff of the Computation Laboratory and participated in the design of the Mark III and Mark IV calculators. From 1952-1955 was a member of the staff of the Mathematics Center in Amsterdam, Netherlands, where he cooperated in the design of the ARRA and FERTA computers. Joined IBM in 1955 at the Poughkeepsie Product Development Laboratory. He has been engaged in the systems planning of various machine projects in Data Systems Division. Is a member of the ACM, IEEE, and Sigma Xi.

Norman Braslau

B.S., 1951, Texas A. & M. College; M.S., 1952, Ohio State University; Ph. D. in Physics, 1960, University of California, Berkeley. Physicist, Air Force Cambridge Research Center, 1952-1955, during tour of active duty, USAF; Staff Member, Lawrence Radiation Laboratory, Berkeley, 1960; visiting fellow in the laboratory of Prof. A. Kastler, École Normale Supérieure, Paris, under grant from Office of Naval Research, 1960-1961. Joined IBM in 1961 at Thomas J. Watson Research Center. Is now doing research on optical masers and nonlinear optical effects. Member of American Physical Society and Sigma Xi.

Frederick P. Brooks, Jr.

A.B. in Physics, Duke University, 1953. Received S.M., 1955 and Ph.D., 1956, Harvard University, for graduate work in

design and application of computers. From 1956 to 1959, Dr. Brooks participated in the planning of the STRETCH and HARVEST computers at the IBM Product Development Laboratory in Poughkeepsie. From 1959 to 1960 he studied computer organization theory at IBM Yorktown Research Center. At present he is IBM Processor Manager, in Poughkeepsie, and is responsible for the specification and development of new computers. Member of IEEE, ACM, Phi Beta Kappa, and Sigma Xi.

James M. Brownlow

B.S. in Glass Technology, 1943, Alfred University; M.S. in Ceramics, 1948, Massachusetts Institute of Technology. While at MIT conducted research on titanate dielectrics in the Laboratory for Insulation Research. From 1948 to 1953, as Director of Research for the Glenco Corporation, developed improved materials and methods for producing miniature ceramic dielectrics and acoustical transducers. Joined IBM Research in 1953 and has since engaged in studies of chemistry and growth techniques pertaining to crystal transition metal oxides and in development of ferrite materials for computer memories. In 1957 was made Manager of the Oxide Chemistry Group at the Thomas J. Watson Research Center.

William C. Carter

B.A. magna cum laude, 1938, Colby College; Ph.D. in Mathematics, 1947, Harvard University. Mathematician, Ballistic Research Laboratories, Aberdeen Proving Ground 1947-1952, working on compressible supersonic fluid flow. Manager, Systems Analysis, Systems Programming and Diagnostic Engineering, Minneapolis-Honeywell EDP Division, 1952-1959. Joined IBM Research in 1959, working on Project Lightning (cryogenic machine organization). Transferred to Data Systems Division in 1961 as Manager, Systems Automation, Advanced Systems, working on problems of automating methods of logic design and diagnostic engineering. Member of Phi Beta Kappa, Sigma Xi, American Association of Rhodes Scholars, ACM, SIAM, IEEE, and IEEE Computer Systems Subcommittee. National ACM Lecturer, 1963-1964.

Paul W. Case

B.S.E.E., 1949, Cornell University. Joined IBM as Customer Engineer in 1949 and moved to IBM Development Laboratory at Poughkeepsie in 1952. Has been active in exploiting uses of computers in engineering and is currently responsible for a variety of design automation development work in the Data Systems Division laboratories. Member of IEEE.

John J. Corning

B.E.E. in 1953, Cornell University. From 1953-1956, was engaged in Product Engineering activities for manufacture of color-TV tubes at CBS-Hytron, Inc. Was with General Electric Company, 1956-1963, working in transistor applications engineering and semiconductor reliability and evaluation engineering. Joined IBM in 1963 to engage in projects relating to the development of integrated circuit modules. Presently is Manager of SLT Module Technology, Components Division, Poughkeepsie. Member of IEEE.

Warren A. Crapo

B.S. in Physics, 1952, Rensselaer Polytechnic Institute; M.S. in Physics, 1961, Syracuse University. Joined IBM, 1952, at Applied Physics Laboratory, General Products Division, in Endicott, working on magnetic drum development. Transferred

to IBM Research, 1955, working on magnetism and magnetic materials. Member American Physical Society and RESA.

Bjorn T. Cronhjort

Dipl. ing. at the Department for Technical Physics, 1959, Finland Institute of Technology, Helsinki. Since joining the IBM Nordic Laboratory, Stockholm, in 1960, he has been studying the use of digital computers in plant controls. Dr. Cronhjort's main interests have been in analytical instrumentation. Member of the Engineering Society in Finland, TFiF.

Edward M. Davis, Jr.

B.S. in Electrical Engineering, 1955, Carnegie Institute of Technology; M.S., 1956, California Institute of Technology; Ph.D., 1958, Stanford University. Joined IBM in 1958 at Poughkeepsie and worked on the exploratory development of *pnpn* and field-effect devices. In 1960 he was promoted to Manager of the Tunnel Diode Development Group. In 1961 he became Manager of the Integrated Circuit Module Development, Components Division, where he is engaged in the development of hybrid integrated circuits and devices. Member of Sigma Xi, RESA, Eta Kappa Nu, Tau Beta Pi, and Phi Kappa Phi.

Robert F. Elfant

B.S., 1957, Southern Methodist; M.S., 1959, New York University; Ph.D. in Electrical Engineering, 1961, Purdue University. In 1957-1959 was Member of Technical Staff, Bell Telephone Laboratories, working in the area of digital data transmission. Joined IBM Research Division in 1961 as member of the Magnetism Department. Became manager of bulk memory research in 1963. Member IEEE and RESA.

Herbert H. Graff

Joined IBM in 1955 as a technician in systems test. Has been instrumental in establishing design automation concepts and is presently a Development Engineer, responsible for SLT Design Automation Programming, Data Systems Division, Poughkeepsie.

Kurt R. Grebe

Attended the Deutsche Oberreale Schule and the Universidad Nacional Autonoma de Mexico (School of Mining). After 1945 was assistant general manager of the Cia. Internacional de Fundiciones y Minerales. Came to the United States in 1947 as manager of Fishkill Landing Lumber Co. Joined IBM in 1954, working on manufacturing aspects of counters, cathode ray tubes, transistors and ferrites. Presently is studying batch fabrication of ferrites at Thomas J. Watson Research Center.

Leroy E. Griffith

Attended University of Wisconsin. Joined IBM in 1955. Has done systems planning and programming work on various design automation projects and is currently a member of the solid logic design automation planning group in the Data Systems Division, Poughkeepsie.

J. B. Gunn

B.A., 1948, Cambridge. Was Research Engineer, Elliott Bros. Ltd., (London) 1948 to 1953. Awarded Junior Research Fellow-

ship, Royal Radar Establishment, Great Malvern, 1953 to 1956. Assistant Professor, Physics Department, University of British Columbia, Vancouver, 1956 to 1959. Joined IBM Research at Poughkeepsie, 1959. Is now Research Staff Member, IBM Thomas J. Watson Research Center, Yorktown.

Otto A. Gutwin

B.S. cum laude, 1954, John Brown University; M.S.E.E., 1957, University of Arkansas. Worked as sales engineer for RCA Victor Company, Ltd., Toronto, Canada, 1954-1955. Electronics instructor at University of Arkansas, 1955-1957. Joined Magnetism Department, Thomas J. Watson Research Center, 1957, working on device evaluation. Member of IEEE and RESA.

William E. Harding

B.S., 1949, M.S., in Physics, 1950, Polytechnic Institute of Brooklyn. From 1950 to 1957 was director of Germanium and Silicon Semiconductor Research and Development Department at Radio Receptor Company, Inc. Joined IBM in 1957 and worked on semiconductor process design and exploratory device development. Has been with the Components Division since 1961 in development and engineering of semiconductor components. Presently Mr. Harding is responsible for all product-oriented semiconductor engineering programs. Member of Sigma Xi, American Physical Society, IEEE and RESA.

Lyle R. Johnson

B.S., 1944; M.B.A., 1948, University of Chicago. Radar Officer, U. S. Army Air Corps, 1943-1946. Statistical Officer, U. S. Air Force, 1950-1952; worked on computer installation and application planning. Later worked in computer systems planning and programming at Ford Motor Company and Sperry Rand Corporation. Joined IBM in 1958 to work on relationships between computers and potential applications. Now in the Experimental Machines and Programming Department, Thomas J. Watson Research Center, Yorktown. Member of ACM.

John R. Lankard

Served as Radar Technician in United States Air Force, 1950-1954. Employed by the Department of Justice as electronic specialist 1954-1960. Studied physics at Long Island University and is now attending Marist College, Poughkeepsie. Joined IBM in 1960 and is presently working on optical resonance research at the Thomas J. Watson Research Center, Yorktown.

A. Robert LeClerc

B.S., 1953; M.S. in Mathematics, 1961, St. John's University, New York. Joined IBM Data Systems Division at Poughkeepsie in 1956 to work on minimization of Boolean equations representing logical design. Presently, has responsibilities in the development of design automation systems. Member of ACM.

John J. Luzzi

M.A. in Organic Chemistry, 1964, City College of New York. Joined IBM in 1961 as Research Staff Member; now working in electrochromism and organic synthesis. Member of American Chemical Society.

M. H. McAndrew

B.A. in Mathematics, 1956; Ph.D. in Mathematics, 1959, Cambridge. Assistant Professor of Mathematics 1959 to 1960,

Mount Allison University, New Brunswick, Canada. Joined IBM in 1961, working in switching theory, graph theory and number theory at Thomas J. Watson Research Center. Member of the Cambridge Philosophical Society and American Mathematical Society.

Howard C. Montgomery

B.S., Mathematics, 1951, Juniata College; M.S., Applied Mathematics, 1953, Carnegie Institute of Technology. Joined IBM in 1956, working in the engineering planning group for the IBM 7030. Subsequently worked in the architecture group for the IBM System/360 and is presently developing maintenance-support programs. Member Sigma Xi, ACM, AAAS, IEEE.

Windsor B. Murley

B.S. in Mathematics, 1953, University of Southern Mississippi. M.S. in Electrical Engineering, 1957, University of Illinois. In 1957 joined IBM Data Systems Division in Poughkeepsie, where he did planning and programming on design automation systems. Currently, is manager of solid logic design automation planning group. Member of ACM, IEEE, and Design Automation subcommittee of IEEE Computing Devices committee.

Farouk M. Odeh

B.S. in Mathematics, 1955, Cairo University; Ph.D. in Applied Mathematics, 1960, University of California, Berkeley. Mathematics instructor, Teachers' Training College, Amman, Jordan, 1955 to 1956. Research Assistant, University of California, Berkeley, 1956 to 1960. Temporary Fellow, Courant Institute of Mathematical Sciences, N.Y.U., 1962 to 1963. Joined IBM in 1960 at the Thomas J. Watson Research Center, working on problems in the phenomenological theory of superconductivity. Member of the American Mathematical Society, American Physical Society and SIAM.

George D. Pettit

A.A.S. in Industrial Chemistry, 1956, Long Island Agricultural and Technical Institute. Joined IBM in 1956. Presently engaged in optical fluorescence studies of various semiconductors at Thomas J. Watson Research Center.

Benjamin Post

B.S., 1930, City College of New York; M.S., 1946, Ph.D. in Chemistry, 1949, Polytechnic Institute of Brooklyn. Research Associate, 1947 to 1954; Assistant Professor of Physics, 1954 to 1957; Associate Professor, 1957 to 1960; Professor, 1960 to present, Polytechnic Institute of Brooklyn. IBM consultant since 1962. Research interests include chemical crystallography, low-temperature x-ray diffraction, lattice vibrations and interstitial compounds. Member of the American Chemical Society, American Physical Society and American Crystallographic Association.

Ralph J. Preiss

S.B.E.E., 1952, Massachusetts Institute of Technology; M.S. in Engineering, 1954, University of Connecticut. Joined IBM in Poughkeepsie in 1954, working in the engineering planning group. In 1957 joined the group working on automated logic design, wiring, and documentation problems. In 1962 became Manager of Maintenance Automation, Advanced Systems. Member Eta Kappa Nu, IEEE, ACM, Past Chairman of Computer Standards Subcommittee, AIEE Computing Devices Committee.

Harry J. Reinheimer

B.E.E., Syracuse University, 1958; M.E.E., Syracuse University, 1961. Joined IBM in 1948. Did final assembly and testing of calculators, EAM equipment, analog systems with Manufacturing, Product Testing and Military Products Test Equipment Engineering. Took a leave of absence in 1956 to obtain B.E.E. Rejoined Data Systems Division as a logic designer for error correcting codes and residue checking used in 7030 system. Joined Supplies Division Development Laboratory in 1960 in a planning capacity. In 1961 was assigned again to Data Systems Division Advanced System Laboratory. He is now a Staff Engineer responsible for developing techniques using new testing concepts to reduce computer maintenance time. Member of IEEE, Tau Beta Pi, Eta Kappa Nu.

Robert S. Schwartz

B.A., 1943, Brooklyn College; Ph.D. in Chemistry, 1950, Polytechnic Institute of Brooklyn. Was Research Assistant at SAM Labs, Manhattan Project—Columbia University, 1943 to 1944. Engaged in the development of facsimile recording systems at Hogan Labs., Inc., 1945 to 1954. Was a Research Associate and Instructor at Polytechnic Institute of Brooklyn, 1947 to 1951. From 1953 to 1956 organized the Clairex Corporation and worked on the development of photoconductive devices. Joined IBM in 1956 and has been engaged in semiconductor device development and engineering in the Components Division at Poughkeepsie. Presently is Manager of Semiconductor and Circuit Device Product Development. Member of American Chemical Society, American Physical Society, Electrochemical Society, Phi Lambda Upsilon and Sigma Xi.

Peter P. Sorokin

B.S., 1952; M.S., 1953; Ph.D., 1957, Harvard University. Joined IBM in 1957 at Poughkeepsie and has worked in the fields of nuclear magnetic resonance, paramagnetic resonance, and optical masers; is now at Thomas J. Watson Research Center, Yorktown. Member of the American Physical Society.

Thomas M. Spence

B.S.E., 1956, Princeton University. Joined IBM Data Systems Division in 1956 in Poughkeepsie. Has worked on design automation projects since 1957 and currently has management responsibilities in design automation systems development.

Theodore R. Touw

B.S. in Physics, 1958; M.S. in Technical Writing, 1959, Rensselaer Polytechnic Institute; M.S. in Physics, Syracuse University, 1963. Joined IBM Data Systems Division in 1959. IBM Fellow at Syracuse University, 1961-1962. Since 1962 has been engaged in development of passive components at the Components Division, Poughkeepsie. Member, American Physical Society.

Robert C. Wnuk

Has attended University of Detroit, Chrysler Institute of Technology, Dutchess Community College, and Polytechnic Institute of Brooklyn. Mr. Wnuk has worked as electrochemical technician at Chrysler Corporation Missile Division, the Electric Auto-Lite Company and Magnus Products. Joined Components Division at Poughkeepsie in 1962 and is presently working in development of passive components.