# Contributors

**Helmut M. Altschuler** (S'47–A'49–M'54–SM'55) received the B.E.E. in 1947, the M.E.E. in 1949, and the Ph.D. in Electrophysics in 1963, all from the Polytechnic Institute of Brooklyn.

He was associated with the Microwave Research Institute for many years and is currently Research Associate Professor in the Electrophysics Department of the Polytechnic. He is presently on a leave of absence at the National Bureau of Standards, Boulder, Colo.

His research activities have included the development of a variety of microwave measurement techniques and work in network, transmission line, and modal theory.

Dr. Altschuler is a member of Eta Kappa Nu and of Sigma Xi.

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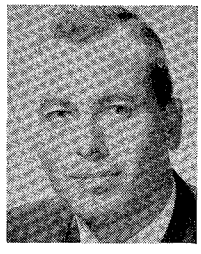

**Marvin Cohn** (S'49–A'51–M'57–SM'61) was born in Chicago, Ill., on September 25, 1928. He received the B.S. degree, in 1950, and the M.S. degree in electrical engineering, in 1953, both from the Illinois Institute of Technology, Chicago. In 1960, he received the Ph.D. in engineering from The Johns Hopkins University, Baltimore, Md.

He was employed by the Glenn L. Martin Company, Baltimore, Md., from 1951 to 1952. He was then with the Radiation Laboratory of Johns Hopkins until he entered the U. S. Army Signal Corps in 1953. Stationed at White Sands Proving Grounds, he worked on the analysis of missile tracking systems. In 1955, he returned to the Radiation Laboratory; he did research and development work on broad-band and superheterodyne receivers and surface-wave transmission, and was Head of the Millimeter Wave Techniques Group of the Radiation Laboratory. Since July 1960, he has been a research scientist with the Research Div. of Electronic Communications, Inc., Timonium, Md. (Since April 1964, renamed the Advanced Technology Corporation.) He is currently engaged in work on millimeter wave systems and ferroelectric materials and devices.

Dr. Cohn is a member of Eta Kappa Nu, Tau Beta Pi, and Sigma Xi.

**R. Lawrence Comstock,** for a photograph and biography please see page 625 of the November 1964, issue of these Transactions.

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**James W. Duncan** (M'47–SM'59) was born in Decatur, Ill. on September 15, 1926. He attended Millikin University in Decatur, and received the B.S. degree in electrical engineering from the University of Colorado, Boulder, Colo., in 1950. From 1953 to 1958, he was a graduate student at the University of Illinois, Urbana, Ill., and was employed as a research associate in the Antenna Laboratory. He received the M.S. and Ph.D. degrees from the University of Illinois in 1955 and 1958.

He was employed by Sandia Corporation, Albuquerque, N. Mex. from 1950 to 1953, and was with the Research Division of Collins Radio Company, Cedar Rapids, Iowa, from 1958 to 1961. Since 1961, he has been with the Hughes Aircraft Company, Fullerton, Calif., where he is a member of the Electromagnetics Staff in the Radar Division. His work has included studies of surface wave excitation and antennas, microwave baluns, strip line devices, slot radiators, and feeds for reflector antennas.

Dr. Duncan is a member of Sigma Xi, Tau Beta Pi, Eta Kappa Nu, and Sigma Tau. He is Vice-Chairman of Group 3B, AP/MTT, in the Orange County Section of the IEEE.

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**Andrew F. Eikenberg** was born in Baltimore, Md., on January 9, 1931. In 1955, he entered McCoy College, The Johns Hopkins University, Baltimore, Md., where he is currently completing the requirements for the B.S. degree in electrical engineering.

From 1951 to 1955, he served with the U. S. Air Force as an electronics technician and instructor in microwave radio relay techniques. He worked at the Martin Company, Baltimore, as a technician, from 1955 to 1956, and as an engineer involved with ferrite loaded antenna development from 1956 to 1958. In November 1958, he joined the staff of the Research Division, Electronic Communications, Inc., Timonium, Md., (changed to Advanced Technology Corporation, in April 1964.) Mr. Eikenberg has worked on ferrite phase shifters, circulators and switches, as well as ferroelectric phase shifters and limiters. He is currently engaged in the development of high-power ferrite phase shifters, as well as the development of millimeter wave components for radiometer applications.

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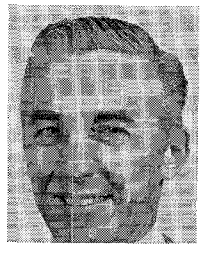

**William P. Ernst** was born in New York in 1922. He received the B.S.E.E. degree from Newark College of Engineering, Newark, N. J. in 1957. He has taken graduate courses at Rutgers—the State University, New Brunswick, N. J., and Newark College of Engineering, and will receive the M.S.E.E. degree from the latter in June 1965.

He has been a resident engineer at Bell Telephone Labs. Inc., from 1953 to 1959, where he worked on microwave test equipment development. At present he is the microwave group leader of the Plasma Physics Laboratory, Princeton University, Princeton, N. J., and is engaged in development of microwave diagnostic systems for investigation of plasmas associated with controlled fusion research.

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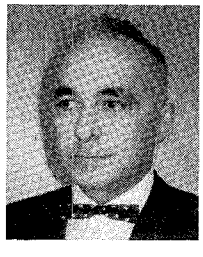

**Herman Farber** (S'44–A'52–M'56–SM'59) was born in New York City in 1919. He received the B.A. degree in chemistry from Brooklyn College in 1941, and the M.E.E. degree in 1952 from the Polytechnic Institute of Brooklyn, N. Y.

From 1941 to 1943, he worked as a chemist. While in service, 1944 to 1946, he worked as a research chemist in Oak Ridge,

Tenn., and after some graduate work in physics, as a research engineer for The Bristol Company, Waterbury, Conn., studying humidity sensors for control application.

From 1950 onward, when he became associated with the Polytechnic Institute, he has progressed from Research Fellow to Research Associate Professor of Electrophysics. His major fields of interest have been; electroforming, oxide cathodes, dielectric materials for microwave applications, electric strength of solids, liquids, and gases at microwave frequencies, detection of microwaves, and cryogenic engineering.

He is a member of American Physical Society, American Assoc. of Physics Teachers, and Sigma Xi.

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**Clifford E. Fay** (A'26–SM'45–F'56) was born in St. Louis, Mo., on December 2, 1903. He received the B.S. and M.S. degrees in electrical engineering from Washington University, St. Louis, Mo.

In 1927, he joined Bell Telephone Labs., Inc., Murray Hill, N. J., where he was engaged in the development of high-power electron tubes until 1955. More recently, he has been concerned with the development of microwave ferrite devices.

Mr. Fay is a member of Sigma Xi and Tau Beta Pi.

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**Robert V. Garver** (M'57) was born in Minneapolis, Minn. on June 2, 1932. He received the B.S. degree in physics from the University of Maryland, College Park, Md., in 1956.

In 1956, he became affiliated with the Microwave Development Section of Diamond Ordnance Fuze Laboratories, Washington, D. C., where he has been working on microwave semiconductors.

Mr. Garver is a member of the American Physical Society.

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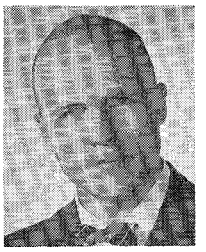
**Elmer L. Johansen** (S'54–A'55–M'60) was born in Lake Forest, Ill., on June 28, 1930. He received the B.A. degree from Harvard University, Cambridge, Mass. in 1952, the



M.S.E.E. degree from the University of Michigan, Ann Arbor, Mich., in 1954, and is presently finishing requirements for the Ph.D. degree at the University of Michigan.

Following discharge from the Army in 1956, he was engaged in radar countermeasures work for the Cook Research Laboratories, Morton Grove, Ill. In 1958 he joined the staff of the Institute of Science and Technology at the University of Michigan where he is currently working on high-resolution, side-looking radar.

Mr. Johansen is a member of Sigma Xi.

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**Max Klinger** (S'56) was born in Poland and received the B.S. (equivalent) degree from Warsaw University in 1936 in mathematics. Since 1956, he has resided in the United States. He received the B.E.E. and M.S.E.E. degrees from the Polytechnic Institute of Brooklyn in 1960 and in 1963, respectively.

He taught high school mathematics and physics in Poland, the Soviet Union, and Germany.

Mr. Klinger was associated with the Electrophysics Dept. of the Polytechnic Institute of Brooklyn since 1960, where he assisted in the development of high power microwave facilities at the Graduate Center in Farmingdale, L. I. In 1964, he was appointed Assistant Professor of Electrical Engineering at the Pratt Institute, Brooklyn, N. Y.

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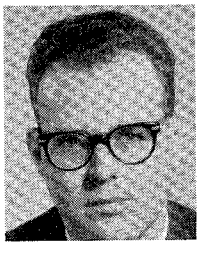

**Adrianus Korpel** was born in Rotterdam, Holland on February 18, 1932. He received the M.S. degree in electrical engineering from the University of Delft, Holland in 1955.

From 1955 to 1960, he was employed in the Research Laboratories of the Postmaster General's Department of the Commonwealth of Australia in Melbourne, where he has been engaged in research on bandwidth compression in television, microwave properties of ferrites, and diode parametric amplifiers. Since 1960, he has been with Zenith Radio Corporation, Chicago, Ill., where he continued his research on parametric amplifiers. Presently, he is engaged in laser research.

Mr. Korpel is a member of the Royal Institution of Engineers of the Netherlands, the Institution of Engineers, Australia, and the American Physical Society, N. Y.

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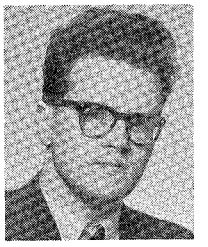

**Jarle Krokstad** was born in Verdal, Norway on June 25, 1935. He received the M.S.E. degree from the Technical University of Norway in 1960.

He then engaged in research on frequency independent antennas at the Norwegian Defence Research Establishment, Bergen, Norway. From 1961, he has been at the Laboratory of Electronics, The Technical University of Norway, Trondheim, Norway, working on microwave ferrite devices. At present Mr. Krokstad is engaged in research on phonon amplification in solids. In addition, he has been lecturing advanced courses in microwave theory and techniques.

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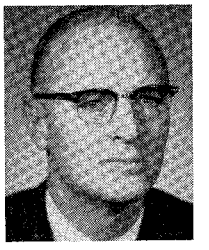

**J. Burton Linker, Jr.,** (S'48–M'56–SM'58), was born in Durham, N. C. in 1923. In 1944 he received the B.S. degree in physics from the University of North Carolina at Chapel Hill. After serving in the U. S. Naval Reserve during W. W. II as an electronics officer, training at the Harvard and Massachusetts Institute of Technology Radar schools, he returned to graduate school and received the M.S. degree in electrical engineering at North Carolina State College of Engineering of the University of North Carolina, Raleigh, N. C.

From 1949 to 1958, he was associated with the Electronics Laboratory of the General Electric Co., Syracuse, N. Y., during which time he was concerned with various areas of endeavor: advanced development of color television, missile electronic guidance systems, and microwave measurements. Since 1958, he has been with the Communication Products Department, General Electric Co., Lynchburg, Va., first as a project engineer responsible for the development and design of a transistorized microwave relay system, and more recently as advance projects engineer in the Advance Engineering group.

Mr. Linker is a professional registered engineer in the State of New York, an associate member of Sigma Xi, a member of RESA, and of Eta Kappa Nu.

**Eugene J. Malloy** was born in New York City in 1926. He attended RCA Institute and completed the advanced technology (T-3) course in 1955, and he has taken courses at the Polytechnic Institute of Brooklyn, N. Y.

In 1955, he joined the staff of the Microwave Research Institute of Polytechnic Institute of Brooklyn, where he worked on microwave power measuring devices and nuclear magnetic resonance. Since 1959, he has been engaged in research and development of high power microwave systems and devices including ferrite and other types of RF switches.

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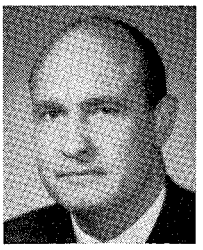

**A. V. McDaniel, Jr.,** was born in Lynchburg, Va. on March 21, 1926. He received the B.S. degree in mathematics from Emory and Henry College, Emory, Va., in 1951.

From 1952 to 1956, he was employed by the Rubatex Division of Great American Industries. Since 1956, he has been with the General Electric Company in Lynchburg. He is now an engineer engaged in the development of parametric amplifiers, harmonic generators, filters and multicouplers in both VHF and microwave frequencies.

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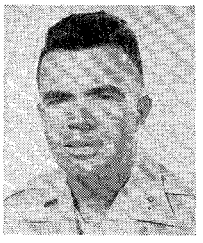

**Robert L. Moynihan** (S'59–M'62) was born in North Andover, Mass., on Nov. 7, 1936. He received the B.S. and M.S. degree in electrical engineering from Northeastern University, Boston, Mass. in 1959 and 1961, respectively.

From 1959 to 1961 he served as an Instructor in the Electrical Engineering Department of Northeastern University. In 1961, he joined the Microwave Group at Sylvania, Waltham, Mass., where he was concerned with the development of microwave circuits. Presently, he is completing a tour of active duty as a 1st Lt., Signal Corps Reserve Officer. He is a Project Officer in the Combat Surveillance Radar Div., Advanced Techniques Group, USARDL, Fort Monmouth, N. J.

**Frank A. Olson** was born in Boise, Idaho, on February 12, 1933. He received the B.S. degree in electrical engineering from Oregon State College, Corvallis, in 1955, and during this time won a Westinghouse Achievement Award. He performed graduate studies under Sylvania's Honors Cooperative program and received the M.S. and Ph.D. degrees from Stanford University, Stanford, Calif., in 1957 and 1960 respectively.

In 1955 he joined the Sylvania Electronic Defense Laboratory, Mountain View, Calif., working in the Applied Physics Group which later became the Microwave Physics Laboratory. There he performed studies on plasmas, crossed-field tubes, and parametric devices. In 1958 he was a research assistant at Stanford Electronics Laboratories working on parametric circuits. In 1960 he served with the USAF at the Cambridge Research Laboratories, Bedford, Mass., and was engaged in studies of solid-state materials at microwave frequencies, principally the interaction of microwave phonons with ferromagnetic materials. In 1962 he joined the Research Department of the Microwave Electronics Corp., Palo Alto, Calif., where at present he is conducting research on microwave acoustics, solid-state phenomena and ultra-low-noise amplifiers.

Dr. Olson is a member of Sigma Xi, Phi Kappa Phi, Tau Beta Pi, and Eta Kappa Nu.

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**Leonard I. Parad** was born in Brooklyn, N. Y. on May 30, 1933. He received the B.S. degree in electrical engineering from Northeastern University, Boston, Mass., in 1955, and the M.S. degree in electrical engineering from the Massachusetts Institute of Technology, Cambridge, Mass., in 1957.

From 1955 to 1957, he was a research assistant at MIT, where he was engaged in the design of a small phased array. In 1957 he joined the Antenna Microwave Department of Sylvania Electric Products, where he has been involved in the design of microwave components, phased arrays, and microwave antenna systems.

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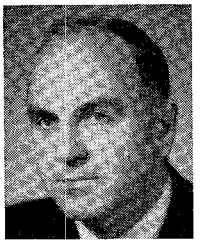
**Harry J. Peppiatt** (M'54) was born in Newmarket, Ont., Canada on May 16, 1925. He received the B.A. degree in honor mathematics and physics in 1948 and the M.A. degree in physics in 1950, both from the University of Toronto. In 1953, he received the Ph.D. degree from McGill University, Montreal.



From 1950 to 1954, he taught engineering physics at Loyola College. Since then, he has been with the General Electric Company, working in the fields of single sideband and frequency-modulation tropospheric scatter, missile guidance, broadband FM microwave equipment, parametric amplifiers, multipliers and switches. At the present time, Dr. Peppiatt is lecturing in a graduate studies program at Lynchburg College, Lynchburg, Va.

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**John P, Quine** (S'48–A'53–M'59) was born in New York, N. Y. on January 11, 1923. He received the BEE and MEE degrees from Rensselaer Polytechnic Institute, Troy, N. Y., in 1949 and 1952, respectively.

In 1950, he was employed by the Cornell Aeronautical Laboratories, Buffalo, N. Y. as an electronics engineer. From 1950 to 1955, he was a member of the teaching and research staff of the Electrical Engineering Department at Rensselaer Polytechnic Institute. In 1955, he joined the Advanced Technology Laboratories of the General Electric Company in Schenectady, N. Y. as a microwave engineer, where he is presently engaged in the development of microwave components and in the study of antenna arrays.

Mr. Quine is a member of Sigma Xi.

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**V. Ramaswamy** (M'62) was born in Kandanur, Madras, India, on June 22, 1938. He received the B.Sc. degree in physics from the Madras University in 1957, his diploma in electrical engineering (D.M.I.T.) from the Madras Institute of Technology, India, in 1960 and the M.S. degree from Northwestern University, Evanston, Ill. in 1963.

In February 1962, he joined the staff of the Research Department of Zenith Radio Corporation, Chicago, Ill., where he is engaged in research on solid-state parametric amplifiers.

Mr. Ramaswamy is a member of Sigma Xi.

**Max Sucher** (SM'62) was born in Poland in 1913. He received the B.S. degree in physics from Brooklyn College, Brooklyn, N. Y., in 1933, and the M.S. degree in physics from Brooklyn Polytechnic Institute, N. Y., in 1947.

From 1936 to 1938, Mr. Sucher was with the National Bureau of Standards, and from 1940 to 1946 with the Bureau of Ships of the Navy Department. From 1946 to 1947, he served as a Research Fellow in the Physics Department of the Polytechnic Institute of Brooklyn, joining the staff of the Polytechnic Research and Development Company in 1947. In 1950, he joined the staff of the Microwave Research Institute of the Polytechnic Institute of Brooklyn as a research associate, later becoming head of the instrumentation section. Since 1960 he has been a Research Associate Professor in the Electrophysics Department of the Polytechnic Institute.

Mr. Sucher is a member of the American Physical Society, and Sigma Xi.

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**Jerald A. Weiss** (SM'61) was born in Cleveland, Ohio on June 9, 1922. He received the A.B. and M.A. degree in physics in 1949, and the Ph.D. degree in physics in 1953 at the Ohio State University, Columbus. From 1953 to 1960, he was a member of the technical staff at the Bell Telephone Labs. Inc., Murray Hill, N. J.,

engaged in ferrite devices. In 1958, he was made supervisor of his ferrite device group. In 1960, he joined in the founding of Hyletronics Corp. at Burlington, Mass., engaged in the development and manyfacture of microwave solid state components and subsystems.

In 1962, he was appointed to the faculty of the Department of Physics at Worcester Polytechnic Institute, Worcester, Mass., where he now holds the position of Associate Professor. Since 1962, Dr. Weiss also has served as consultant to the Array Radars Group at M.I.T. Lincoln Laboratory, Lexington, Mass., where he is concerned with ferrite components and other problems relating to phased array system design.

Dr. Weiss is a member of the American Physical Society, Phi Beta Kappa, and Sigma Xi.

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**Robert J. Wenzel** (S'61–M'62) was born in Milwaukee, Wis., on September 11, 1939. He received the B.S. degree in electrical engineering from Marquette University, Milwaukee in 1961, and the M.S. degree in electrical engineering from the Massachusetts Institute of Technology, Cambridge, Mass. in 1962, under an Alfred P. Sloan Fellowship.

In 1962, he joined the Research Laboratories Division of The Bendix Corporation, Southfield, Mich., where he has been engaged in the development of exact synthesis techniques for distributed networks, solid-state parametric devices and harmonic generators.

Mr. Wenzel is a member of Tau Beta Pi, Eta Kappa Nu, Pi Mu Epsilon, and is an associate member of Sigma Xi.

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**J. R. Yaeger** was born in Mount Vernon, Ill., on June 17, 1939. He received the B.S. degree in electrical engineering from the University (with honors) of Illinois, Urbana, Ill. in 1961, and the M.D. degree in electrical engineering from Stanford University, Stanford, Calif., in 1963. While at Stanford he was appointed a research assistant in the field of communications problems.

He worked on optical scanning for the Illinois Bell Telephone Co., Chicago, Ill., in 1960 and for IBM Corporation, Poughkeepsie, N. Y., in 1961. In 1962 he joined Microwave Electronics Corp. as an engineer in the Research and Engineering Department, working on the design and development of cryogenic amplifiers. He is presently engaged in studies of microwave acoustic phenomena and delay techniques.

Mr. Yaeger holds memberships in Phi Kappa Phi, Tau Beta Pi, Eta Kappa Nu, and Phi Eta Sigma.