

Contributors

Dean B. Anderson (S'49-M'50) was born in Billings, Mont., on October 22, 1921. He received the B.S. degree in electrical engineering from Montana State College, Bozeman.



D. B. ANDERSON

From 1944 to 1946 he served in the Signal Corps, primarily with the Radio Propagation Unit. Then he joined Hazeltine Electronics Corporation, Little Neck, N. Y., where he contributed to the development of antennas and transmitters for IFF and air navigation systems. Later he was responsible for the microwave aspects of the airborne interrogator and ground stations of the Distance Measuring Equipment for the Civil Aeronautics Administration. Since 1954 he has been associated with the Autonetics, Division of North American Aviation, Inc., Anaheim, Calif., as a Senior Technical Specialist, studying advanced microwave systems and monopulse antennas. His study of parametric amplifiers applied to monopulse systems has recently received major emphasis. He has recently joined the Autonetics Research Center, Anaheim, Calif.

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Jerry C. Aukland (S'55-M'59) was born in Macedonia, Ia., on October 7, 1931. He received the B.S. degree in electrical engineering from Iowa State College, Ames, in 1959.



J. C. AUMLAND

From 1950 to 1954 he was an aviation electronics technician in an Early Warning Radar Squadron (during the Korean conflict). Upon graduation in 1959 he joined the Autonetics Division of North American Aviation, Inc., Anaheim, Calif., where he has been engaged in the study of parametric amplifiers for application to monopulse radars.

Mr. Aukland is a member of Phi Eta Sigma, Eta Kappa Nu, and Tau Beta Pi.

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Clare E. Barnes was born in Vassar, Mich., on October 24, 1929. He received the B.S. degree in physics from Michigan State University, East Lansing, in 1956.

From 1948 to 1952 he served in the Air

Force as an aircraft armament instructor. Since 1956 he has been a member of the technical staff of the Bell Telephone Laboratories, Murray Hill, N. J., in the Solid State Device Development Department. He was engaged in the development of ferrite switches and variable attenuators for the Bell System's 6 kmic Radio Relay System while attending the Laboratories' Communications Development Training Program, which he completed in 1959. Subsequently, his work was concerned with ferrite devices at C and X bands, and at millimeter wavelengths.



C. E. BARNES

in 1949; the M.S. degree from Stanford University, Stanford, Calif., in 1959, and the degree of Engineer, also from Stanford, in 1961, all in electrical engineering.

Between 1950 and 1957 he worked at Technicraft Laboratories, Thomaston, Conn., and the Westinghouse Electric Company, Baltimore, Md., on the design and development of waveguide components and assemblies. In 1957 he joined the staff of Stanford Research Institute, where he has been working on strip-line components and antennas.

Mr. Getsinger is a member of Tau Beta Pi and Eta Kappa Nu.

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Keith S. Champlin (S'55-M'59) was born in Minneapolis, Minn., on August 20, 1930. He received the B.S. degree in 1954, the M.S.E.E. degree in 1955, and the Ph.D. degree in electrical engineering in 1958, all from the University of Minnesota, Minneapolis.

After serving in the U. S. Army Signal Corps in 1951 and 1952, he was briefly associated with the Physics Department of the University and with Remington Rand Univac. Both positions dealt with applications of radio telemetry to high altitude research. As a graduate student, he was engaged in research on noise in semiconductors; first as Research Assistant and later as Research Fellow. His thesis work was in the field of fluctuations in *p-n* junction devices.

At present, he is Associate Professor of electrical engineering at the University of Minnesota. He is in charge of a research group employing microwave techniques to study electronic processes in semiconductors.

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

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Meyer Gilden (S'47-A'48-M'55) was born in Chicago, Ill., on June 21, 1924. He received the B.S. and M.S. degrees in electrical engineering from the Illinois Institute of Technology, Chicago, in 1946 and 1948, respectively, and the Ph.D. degree from the University of Illinois, Urbana, in 1955.

From 1948 to 1956 he was on the staff at the University of Illinois where he attained the rank of Assistant Professor. At the University he taught in the Electrical Engineering Department and was engaged in plasma research in the Gaseous Electronics Laboratory under Dr. L. Goldstein. While at the University he also worked in the Control Systems Laboratory on communication problems.

In 1956 he became a member of the staff of the General Electric Microwave Laboratory in Palo Alto, Calif., where he was active in research and development concerned with microwave switches using gas and vacuum discharges, phase shifters using gas discharge plasmas, microwave filters and shock tube instrumentation. From 1959 to 1961 he was a Research Engineer in the Electromagnetics Laboratory at Stanford Research Institute where he became involved in parametric amplifier work. Presently he is a Senior Engineer in the Electron Tube and Device Division of Microwave Associates, Burlington, Mass., where he is engaged in plasma physics research.

Dr. Gilden is a member of the American Physical Society, Sigma Xi, and Kappa Nu.

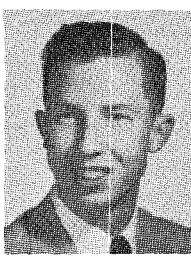


M. GILDEN

Thomas S. Hartwick was born in Vandalia, Ill., on March 19, 1934. He received the B.S. degree in engineering physics from the University of Illinois, Urbana, in 1956, and the M.S. degree from the University of California at Los Angeles in 1958, under a Howard Hughes Master of Science Fellowship.

From 1956 to 1961 he was associated with the Solid-State Applications Section, Electro-Physics Laboratory, Hughes Aircraft Company, Culver City, Calif., where he was Head of the Ferrites Research Group, and where he was principally engaged in research on the nonlinear behavior of ferromagnetic materials at microwave frequencies. In early 1961 he joined the Aerospace Corporation, El Segundo, Calif.

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



T. S. HARTWICK

of the Nationalist Chinese Air Force Communication School and the Taipei Institute of Technology as a radio, radar, and loran instructor; and the following two years she worked as a research engineer for the Radio Wave Propagation Research Laboratory of Taiwan, China. In 1956 she joined the Admiral Radio Company, Chicago, Ill., as a research engineer, studying radiation effects of microwave components, and the following year she was with the Electronics Research Laboratory of the Illinois Institute of Technology. Since 1958 she has been with the Boeing Company, Renton, Wash.

Miss Hu is an associate member of Sigma Xi.

Akira Ishimaru (M'58) was born in Fukuoka, Japan, on March 16, 1928. He received the B.S. degree from Tokyo University in 1951, and the Ph.D. degree in electrical engineering from the University of Washington, Seattle, in 1958.

In 1951 he worked for the Electrotechnical Laboratories, Tokyo, Japan, until his arrival in the U. S. in 1952 as a graduate student. From 1954 to 1958

he was an Instructor at the University of Washington, and in the summer of 1956 he was employed by the Bell Telephone Laboratories, Holmdel, N. J., where he worked on antenna problems. He was an Assistant Professor of electrical engineering at the University of Washington from 1954 to 1961, and became Associate Professor in 1961. He has also been a consultant to the Boeing Airplane Company, Seattle, Wash., in microwave antennas and propagation. He has been engaged in research on antenna pattern synthesis, propagation, and diffraction and scattering.

Dr. Ishimaru is a member of Sigma Xi.

Irving Kaufman (S'45-A'50-M'55) was born in Geinsheim, Hessen, Germany, on January 11, 1925. He received the B.E. degree in electrical engineering from Vanderbilt University, Nashville, Tenn., in 1945, and the M.S. and the Ph.D. degrees from the University of Illinois, Urbana, Ill., in 1948 and 1957, respectively.

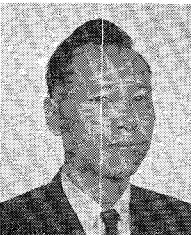
From 1945 to 1948 he worked as development engineer for the RCA Victor Di-

Irving T. Ho was born in Fukien, China, on March 26, 1921. He received the B.S.E.E. degree from Amoy University, Fukien, China, in 1944, and the M.S. and Ph.D. degrees from Stanford University, Stanford, Calif., in 1957 and 1961, respectively.

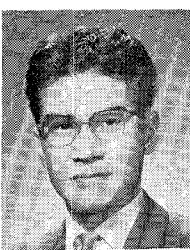
From 1952 to 1955 he was a Lecturer in electrical engineering at the Taipei Institute of Technology, Taipei, Taiwan. From 1957

to 1959 he was employed by the Boeing Airplane Company, Seattle, Wash., as a research engineer. During that time, he was also a part-time graduate student at the University of Washington, Seattle, under the Boeing graduate program. In 1959 Boeing granted him a scholarship to continue his studies at Stanford University. At present, he is a research associate with the Electronics Research Laboratories of Stanford University.

Dr. Ho is a member of Sigma Xi.



I. T. HO



A. ISHIMARU

vision, Indianapolis, Ind., and Camden, N. J. Since 1957, he has been with the Research Laboratory of Ramo-Wooldridge, which is now the Research Laboratory of Space Technology Laboratories, Inc., Canoga Park, Calif., working in the field of Microwave Electronics.

Dr. Kaufman is a member of Sigma Xi, Tau Beta Pi, Eta Kappa Nu, Pi Mu Epsilon, and the American Physical Society.

Robert R. Krongard was born in Montevideo, Minn., on June 10, 1932. He received the B.S. degree in 1959 and the M.S. degree in 1961, both in electrical engineering from the University of Minnesota, Minneapolis.

He is presently doing research on the microwave properties of semiconductors at the University of Minnesota while working toward the Ph.D. degree.

Mr. Krongard is a member of Eta Kappa Nu and Gamma Alpha.

William F. Krupke was born in Springfield, Mass., on January 30, 1937. He received the B.S. degree in physics from Rensselaer Polytechnic Institute, Troy, N. Y., in 1958, and the M.A. degree in physics from the University of California, Los Angeles, in 1960, under a Howard Hughes Master of Science Fellowship.

From 1958 to 1961 he was associated with the Solid-State Applications Section, Electro-Physics Laboratory, Hughes Aircraft Company, Culver City, Calif., engaged principally in research and development work utilizing the nonlinear properties of ferromagnetic and semiconductor materials at microwave frequencies. Since early in 1961 he has been associated with Minneapolis-Honeywell Regulator Company, Los Angeles, Calif., where he is engaged in electro-optical research and development.

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

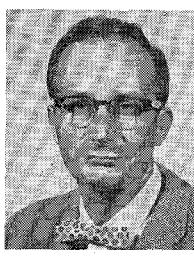
Ann Yung Hu (S'56-M'58) was born in Hunan, China, on October 6, 1921. She received the B.S.E.E. degree from the National Hunan University, China, in 1944, and the M.S.E.E. degree from the Illinois Institute of Technology, Chicago, in 1957. Currently she is studying at the University of Washington, Seattle.

From 1944 to 1952 she was on the staff



Section, Electro-Physics Laboratory, Hughes Aircraft Company, Culver City, Calif., engaged principally in research and development work utilizing the nonlinear properties of ferromagnetic and semiconductor materials at microwave frequencies. Since early in 1961 he has been associated with Minneapolis-Honeywell Regulator Company, Los Angeles, Calif., where he is engaged in electro-optical research and development.

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



I. KAUFMAN



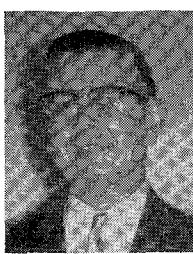
R. R. KRONGARD



Charles E. Muehe, Jr., was born in Seattle, Wash., on September 27, 1924. He received the B.S. degree in electrical engineering from Seattle University in 1950, and the M.S. degree in electrical engineering from the Massachusetts Institute of Technology, Cambridge, in 1952.

From 1952 to 1956 he was a member of the electrical engineering staff of Seattle University. In 1956 he joined the Lincoln Laboratory of M.I.T. where he has been working on microwave components and gaseous discharges.

Mr. Muehe is a member of Sigma Xi.



C. E. MUEHE, JR.

of California, Berkeley, in 1959 and 1960, respectively.

During the summer of 1959, he was employed as an electronics engineer at the Lawrence Radiation Laboratories, Livermore, Calif., where he was engaged in research on harmonic generations. In 1960 he joined the Dalmo Victor Company, Division of Textron Inc., Belmont, Calif., as a microwave engineer in the Microwave and Propagation Department, where he is doing research on stripline components, high-power strip-line duplexer and nanosecond duplexing circuits.

Mr. Pon is a member of Tau Beta Pi and Eta Kappa Nu.



C. Y. PON

traveling-wave tubes, noise fluctuations in electron beams, solid-state masers, and parametric devices.

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

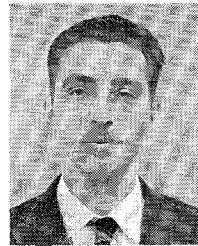
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Frederick Sobel was born in Philadelphia, Pa., on February 20, 1927. He received the B.A. degree in physics from Columbia College, New York, N. Y., in 1948, and the M.A. degree in physics from Columbia University, New York, N. Y., in 1949.

From 1949 to 1950 he was employed by Dorne and Margolin, Bethpage, N. Y., in aircraft antenna design and development. He joined

the Friez Instrument Division of the Bendix Corporation, Baltimore, Md., in 1951 and was engaged in meteorological instrumentation. From 1952 to 1956 his work as a research associate at the Radiation Laboratory of The Johns Hopkins University, Baltimore, Md., was concerned with military applications of infrared physics and included studies in infrared emission and reflection, the development of calibrated radiation sources, and problems in optical instrumentation. Since 1956 he has been employed by Electronic Communications, Inc., Timonium, Md., where he is responsible for research and development in infrared and optical device and systems. He has recently been exploring quasi-optical techniques and devices for application at millimeter and submillimeter wavelengths.

Mr. Sobel is a member of the American Physical Society, the Optical Society of America, and the Instrument Society of America.



F. SOBEL

Melvin E. Pedinoff was born in New York City, N. Y., on June 21, 1930. He received the B.A. and M.A. degrees in physics in 1953, and 1954, respectively, and the Ph.D. degree in ultrasonic physics in 1959, all from the University of California at Los Angeles.

In 1954 he worked for the Naval Ordnance Test Station, Pasadena, Calif., on acoustic guidance systems. From 1954 to 1958 he was employed as a research physicist at U.C.L.A. where he performed research on the propagation of sound in fluids and on the structure of molecules. From 1956 to 1959 he worked at Hoffman Laboratories Division, Los Angeles, Calif., on noise suppression, broad-band low-frequency antennas and radar anti-jam equipment. In 1959 he accepted a position with Hughes Aircraft Company, Culver City, Calif., where he was concerned with the application of communication theory to data processing antennas and later with the investigation of the role of solid-state phenomena in antenna systems. He recently joined the staff of Hughes Research Laboratories, Malibu, Calif., where he will be concerned with quantum electronic problems.

Dr. Pedinoff is a member of Sigma Pi Sigma and Sigma Xi.



M. E. PEDINOFF

Albert E. Sanderson (A'50-M'54) was born in Bethlehem, Pa., on August 8, 1928. He received the A.B. degree in 1949 and the A.M. degree in 1950, both from Harvard University, Cambridge, Mass.

From 1950 to 1957 he was with Aircraft Radio Corporation, Boonton, N. J., working on the development of airborne communication receivers, transmitter and antennas.

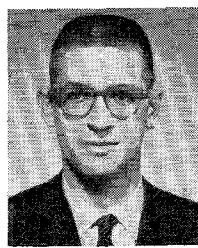
In 1957 he joined the Impedance Group of General Radio Company, West Concord, Mass., and has been engaged in the design of coaxial microwave components and test equipment.



A. E. SANDERSON

Anthony Siegman (S'54-M'56) was born in Detroit, Mich., on November 23, 1931. He received the A.B. degree from Harvard College, Cambridge, Mass., in 1952, the M.S. degree in applied physics from the University of California at Los Angeles, Calif., in 1954, and the Ph.D. degree in electrical engineering from Stanford University, Stanford, Calif., in 1957.

He worked with the Hughes Aircraft Company, Culver City, Calif., from 1952 to 1954, and is now Associate Professor in electrical engineering at Stanford University. He has worked on



A. SIEGMAN

William H. Steier was born in Kendallville, Ind., May 25, 1933. He received the B.S. degree in electronic engineering from Evansville College, Evansville, Ind., in 1955, and the M.S. and Ph.D. degrees, both in electrical engineering, from the University of Illinois, Urbana, in 1957 and 1960, respectively.

Since 1956 he has been engaged in millimeter wave and electron beam research at the University of Illinois. His areas of investigation have included ferrite



W. H. STEIER

Chuck Y. Pon (S'58-M'61) was born in Canton, China, on April 27, 1935. He received the B.S. and the M.S. degrees in electrical engineering from the University

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modes, Cerenkov radiation from a plasma, and optical transmission lines. He has been a consultant with Ramo-Wooldridge Research Laboratories and with Space Technology Laboratories, Inc., Los Angeles, Calif. While consulting for these firms he investigated the use of plasmas as microwave variable attenuators and switches. Currently he holds the position of Assistant Professor of electrical engineering at the University of Illinois.

Dr. Steier is a member of the American Physical Society and Sigma Xi.



K. TOMIYASU

Kiyo Tomiyasu (S'41-A'42-M'49-SM'52) was born in Las Vegas, Nev., on September 25, 1919. He received the B.S. degree in electrical engineering from the California Institute of Technology, Pasadena, in 1940, and the M.S. degree in communication engineering from Columbia University, New York, N. Y., in 1941. With a Low Scholarship, he studied at Stanford University, Stanford, Calif., and

then entered Harvard University, Cambridge, Mass., to continue graduate work on a Gordon McKay Scholarship. He served as a Teaching Fellow and Research Assistant at Harvard, and, after receiving the Ph.D. degree in 1948, he served as Instructor.

In September, 1949, he joined the Sperry Gyroscope Company, Great Neck, N. Y., as project engineer, and in 1952 was promoted to the position of Engineering Section Head for Microwave Research in the Microwave Components Department. In August, 1955, he became a Consulting Engineer at the General Electric Microwave Laboratory, Palo Alto, Calif. Five years

later he transferred to the General Engineering Laboratory, General Electric Company, Schenectady, N. Y.

Dr. Tomiyasu is a member of the American Physical Society and Sigma Xi.

Max T. Weiss (S'43-A'45-M'55-SM'57), for a photograph and biography, please see page 370 of the July, 1961, issue of these TRANSACTIONS.

Max T. Weiss (S'43-A'45-M'55-SM'57), for a photograph and biography, please see page 370 of the July, 1961, issue of these TRANSACTIONS.

Frederick L. Wentworth (S'54-A'55-M'60) was born in Cumberland, Md., on July 30, 1924. He received the B.S. degree in electrical engineering from The Johns Hopkins University, Baltimore, Md., in 1955, and the M.S. degree in electrical engineering from Drexel Institute of Technology, Philadelphia, Pa., in 1960.

In 1952 he joined the Radiation Laboratory of The Johns Hopkins University where he helped develop experimental circuitry on a proximity fuze program for the U. S. Navy. From 1954 to 1957 he was employed by The Martin Company, Baltimore, Md., where he was engaged in design and development of antennas and microwave components. He also served as acting group engineer for development of the antennas and associated RF equipment on the Vanguard project. In 1957 he joined Electronic Communications, Inc., Timonium, Md., as a project engineer in the Microwave and Applied Physics Section. He has been engaged in research on electromagnetic propagation and scattering in soil, mutual coupling



F. L. WENTWORTH

ing and phasing problems with large antenna arrays, millimeter wave generation, propagation and detection, solid-state parametric amplifiers, and harmonic generators. He is presently engaged in development of a high-sensitivity radiometer in the 1-2 mm region for the U. S. Army.

James C. Wiltse (S'48-A'53-SM'59) was born in Tannersville, N. Y., on March 16, 1926. He received the B.E.E. degree in

1946 and the M.E.E. degree in 1951 from Rensselaer Polytechnic Institute Troy, N. Y., and the Dr.Eng. degree from The Johns Hopkins University, Baltimore, Md., in 1959.

From 1946 to 1947 he was an electronics officer in the U. S. Navy, and from 1947 to 1948 he was

employed by the General Electric Company, Schenectady, N. Y. He then taught in the Department of Electrical Engineering at Rensselaer while he completed the requirements for the M.E.E. degree. From 1951 to 1958 he was associated with The Johns Hopkins University where he taught in the Department of Electrical Engineering and later was a staff member of the Radiation Laboratory. He became Microwave Group Leader and was responsible for the millimeter-wave and physical electronics groups. Since 1958 he has been employed at the Research Division of Electronic Communications, Inc., Timonium, Md., where he is now the Research Manager in charge of the Antenna, Microwave, and Infrared Sections.

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



J. C. WILTSE