

# Contributors



**Charles R. Boyd, Jr.**, (M'58) was born in Pittsburgh, Pa., on October 21, 1932. He received the B.S.E.E. degree from Carnegie Institute of Technology, Pittsburgh, Pa., in 1953, and the M.E.E. degree from Syracuse University, Syracuse, N. Y., in 1962. In 1959, he completed the three-year General Electric Company Advanced Engineering Program, and he is currently engaged in a program of further graduate studies toward the Ph.D. degree at Syracuse University.

From 1953 until 1956, he was employed by the Baltimore Division of the Westinghouse Electric Corporation, where he worked as a field engineer on developmental autopilot and radar systems. In 1956, he joined General Electric's Light Military Electronics Department, in Utica, N. Y., as a design engineer on the Atlas ICBM Guidance Program. He transferred to his present position on the technical staff of the General Electric Electronics Laboratory, Syracuse, N. Y., in 1957, where he is engaged in the study and development of microwave systems and networks.

Mr. Boyd is a licensed Professional Engineer in New York state, and a member of Eta Kappa Nu.

Ultra-High Frequency and Microwave Engineering from the Indian Institute of Technology, Kharagpur, India, in 1961.

He is now working for the Ph.D. degree as a Burmah-Shell Research Fellow at the Indian Institute of Technology.

Mr. Dave is a student member of the Institution of Telecommunication Engineers of India.



**James Keith Hunton** (SM'57) was born in Montreal, Canada, on December 20, 1921. He received the B.A.Sc. degree in engineering physics from the University of Toronto, Canada, in 1943. He attended Massachusetts Institute of Technology, Cambridge, where he was an instructor in electrical engineering, and received the M.S. degree there in 1948.

He served in the British Royal Navy as a radar officer from 1943 to 1946. In 1948 he joined the Hewlett-Packard Company, Palo Alto, Calif., where he is now Manager of the Microwave Components Development Section.

Dr. Ishii is a member of Sigma Xi, Eta Kappa Nu, the ASEE and the Institute of Electrical Communication Engineers of Japan.



**Norman M. Kroll** was born in Tulsa, Okla., on April 6, 1922. He received the A.B., A.M. and Ph.D. degrees, the latter in 1948, in physics from Columbia University, New York, N. Y. Several years prior to 1948 he had been

appointed to a position on the scientific staff of Columbia University's Radiation Laboratory. His one year away from Columbia, 1948-1949, was spent at the Institute of Advanced Study on a National Research Fellowship. Upon his return, he joined the staff of the Physics Department and in 1954 was named full Professor. During this period he has also spent time at the Brookhaven National Laboratories, at the University of Rome as a Fulbright Scholar and Guggenheim Fellow, and at the Los Alamos Scientific Laboratories. His special fields are microwave physics, magnetron design, quantized field theories, and nuclear physics. He is co-inventor of the "rising-sun" magnetron and generally regarded as a tube expert. At Columbia he conducts an advanced seminar on electromagnetic theory.

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



**Adelard L. Brault, Jr.** was born in Washington, D. C., on May 14, 1938. He received the B.E.E. degree in 1960 from Marquette University, Milwaukee, Wis., where he is presently studying for the Master's degree in electrical engineering and is also working as a research assistant in the millimeter-wave laboratory.

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



**Koryu Ishii** (M'55) was born in Tokyo, Japan, on March 18, 1927. He received the B.S. degree in electrical engineering from Nihon University, Tokyo, in 1950, and the M.S. and Ph.D. degrees in electrical engineering

from the University of Wisconsin, Madison, in 1957 and 1959, respectively. In 1961 Nihon University awarded him the Doctor of Engineering degree for his thesis, "Internal Cavity Reflex Klystron Amplifiers."

From 1949 to 1956, he was engaged in research on microwave circuits and amplifiers and also instructed students at Nihon University. From 1956 to 1959, he investigated the noise figure of the reflex klystron amplifiers and cascaded reflex klystron amplifiers at the University of Wisconsin. Since July, 1959, he has been engaged in establishing a millimeter-wave laboratory at Marquette University, Milwaukee, Wis. He was an Assistant Professor there during 1959 to 1960, and is presently an Associate Professor.

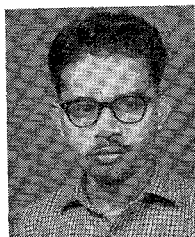


**Sol Krongelb** (S'51-M'59) was born in Jersey City, N. J., on August 15, 1932. He received the B.S. degree in engineering physics from New York University, N. Y., in 1953, and the M.S. and Ph.D. degrees in physics

from the Massachusetts Institute of Technology, Cambridge in 1955 and 1958, respectively.

While at M.I.T. he was a member of the Research Laboratory for Electronics where he did work on microwave spectroscopy and paramagnetic resonance. In 1958, he joined the IBM Research Center where he has worked on parametric circuits and semiconductor devices.

Dr. Krongelb is a member of Tau Beta Pi, Sigma Xi, and the American Physical Society.



**Himanshu B. Dave** (S'62) was born in Surat, India, on April 22, 1938. He received the B.E. degree in electrical engineering from Gujarat University, Gujarat, India, in 1959 and the M.Tech. degree in



**Richard C. Mackey** (S'50-A'53-M'57) was born in Los Angeles, Calif., on July 27, 1926. He received the B.S.E.E. degree in 1950 and the M.S. degree in 1952, both from the University of California, Los Angeles.

He was employed at the University of California as a research engineer and Associate in Engineering from 1950 through 1956. His work concerned the properties of materials at microwave frequencies including gas spectroscopy, paramagnetic resonance, frequency stabilization and instrumentation. From 1957 to 1958, he was a member of the technical staff of the Ramo-Wooldridge Corporation, Los Angeles, working in the area of electronic countermeasures. Since 1958 he has been with the University of California, Los Angeles, as Assistant Professor of Engineering, and has been a Consultant in the fields of microwave instrumentation, electronic countermeasures and counter-countermeasures at Space Technology Laboratories, Los Angeles, Calif.

Mr. Mackey is a member of Tau Beta Pi, Sigma Xi and RESA.



**Enrique A. J. Marcatili** (M'56) was born in Córdoba, Argentina, on August 1, 1925. He received the Aeronautical Engineer's degree and the Electrical Engineer's degree from the University of Córdoba,

Argentina, in 1947 and 1948, respectively.

From 1947 to 1954, he was a member of the Research Staff at the University of Córdoba. In 1954 he joined the Technical Staff of Bell Telephone Laboratories, Holmdel, N. J. Since then he has been engaged in theory and design of filters in multimode waveguides and in waveguide systems research. Recently he became the department head of a group engaged in components research for guided wave systems.

Mr. Marcatili is a member of the Physical Association of Argentina.



**James J. McNichol** (M'60) was born in Brooklyn, N. Y., on August 1, 1932. He received the B.S. degree in physics from St. John's University, Brooklyn, in 1954, and the S.M. degree in physics from the Massachu-

setts Institute of Technology, Cambridge, in 1958, and has done further graduate work in physics at New York University, N. Y.

During the summers of 1954 and 1955 he was employed by the U. S. Army Ordnance Corps in the Ballistics Research Laboratory, Aberdeen Proving Grounds, Md. From 1956 to 1958, he was a research assistant in the Research Laboratory of Electronics at M.I.T. where he worked in the Microwave Spectroscopy group. He joined IBM, Yorktown Heights, N. Y., in 1958 as a member of the Microwave Logic Department and was engaged in the development of parametric amplifiers. In 1960, he became a member of the Cryogenics program where he is engaged in cryotronic component and circuit development.

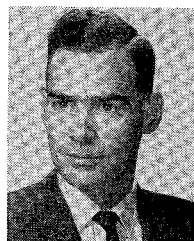
Mr. McNichol is a member of the American Physical Society.



**Douglas H. Ring** (A'31-VA'39-SM'53) was born in Butte, Mont., on March 28, 1907. He received the A.B. degree in engineering and the E.E. degree from Stanford University, Stanford, Calif., in 1929 and 1930.

Since 1930 he has been a member of the Technical Staff of the Bell Telephone Laboratories, Holmdel, N. J., in the radio research and waveguide groups. His early work was in the short-wave radio systems field. During World War II, he was occupied with early applications of waveguides, radar systems and antennas. This was followed by microwave relay systems research. Currently he is responsible for a group studying long-distance waveguide transmission of millimeter waves.

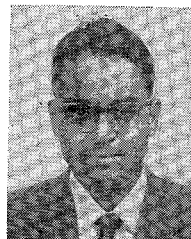
Mr. Ring is a member of Sigma Xi and Phi Beta Kappa.



**Auber Ryals** was born in Philadelphia, Miss., on January 11, 1932. He received the B.S.E.E. degree in electrical engineering from the University of California, Berkeley, in 1959.

He developed an interest in the microwave field while serving as a radar technician in the U. S. Air Force. In 1959 he joined the Microwave Laboratory of the Hewlett-Packard Company, Palo Alto, Calif., where he has been engaged in the development of waveguide and coaxial components for microwave measurements.

Mr. Ryals is a member of AIEE.



**S. R. Seshadri** (SM'61) was born on October 25, 1928, in Madras, India. He received the M.A. degree in physics in 1951 from the University of Madras, India, and he earned the diploma in electrical communication

engineering in 1953 from the Indian Institute of Science, Bangalore, India. In 1959, he received the Ph.D. degree in applied physics from Harvard University, Cambridge, Mass.

From 1954 to 1955, he served as a lecturer in electronics at the Madras Institute of Technology, Chromepet, Madras, India. He was a Research Fellow in electronics at Harvard University during 1959. In 1960 he joined the Electronics Research and Development Establishment, Bangalore, as a Senior Scientific Officer, and in 1961 was made a Principal Scientific Officer and transferred to the Defense Electronics Research Laboratory, Hyderabad, India. Presently, he is at the Gordon McKay Laboratory, Harvard University.

Dr. Seshadri is a member of Sigma Xi.