Contributors

James B. Beyer (M'61) was born in Horicon, WI, on July 7, 1931. He received the B.S.E.E., M.S., and Ph.D. degrees from the University of Wisconsin, Madison, in 1957, 1959, and 1961, respectively.

From 1950 to 1954, he served in the U.S. Navy as an electronics technician engaged in shipboard radar maintenance. Upon resuming his studies in 1954, he held both teaching and research appointments at the University of Wisconsin. He has taught courses in the area of electromagnetic theory, microwaves, and electronics since his appointment to the faculty in 1961. From 1968 to 1969, he was a visiting professor at the Technical University in Braunschweig, Germany. He is presently engaged in research on microwave semiconductor devices.

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

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David C. Chang (S'65–M'67–SM'76) was born in Hupeh, China, on September 9, 1941. He received the B.S. degree in electrical engineering from Cheng Kung University, Tainan, Taiwan, China, in 1961, and the M.S. and Ph.D. degrees in applied physics from Harvard University, Cambridge, MA, in 1963 and 1967, respectively.

He joined the University of Colorado, Boulder, in 1967, and is now a Professor of Electrical Engineering and Director of the Electromagnetics Laboratory. In 1972, he was a Visiting Professor at Queen Mary College, University of London, London, England. In addition, he was also a guest worker with the theoretical study group at the Environmental Research Laboratory, U.S. National Oceanic and Atmospheric Administration in 1975 and 1976. He is now a Consultant to the Kaman Science Corporation, Colorado Springs, CO, and a Consultant to the Southeastern Center for Electrical Engineering Education, Incorporated, Bridgeport, NY.

Dr. Chang is a member of Sigma Xi and the International Scientific Radio Union Commissions A, B, C, and E. He is currently Chairman of the IEE-MTT-S 15 Subcommittee on Microwave Field Theory.

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Carl H. Durney (S'60–M'64) was born in Blackfoot, ID, on April 22, 1931. He received the B.S. degree in electrical engineering from Utah State University, Logan, in 1958, and the M.S. and Ph.D. degrees in electrical engineering from the University of Utah, Salt Lake City, in 1961 and 1964, respectively.

From 1958 to 1959, he was employed as an Associate Research Engineer with the Boeing Airplane Company, Seattle, WA, where he studied the use of delay lines in control systems. He has been with the University of Utah since 1963, when he was appointed to be Assistant Research Professor in electrical engineering. From 1965 to 1966, he was employed at Bell Laboratories, Holmdel, NJ, while on leave from the University of Utah. During this time he worked in the area of microwave avalanche diode oscillators. Again, in 1971, he was engaged in study and research involving microwave biological effects at the University of Washington, Seattle, while on leave from the University of Utah. He is currently Chairman and Professor of Electrical Engineering at the University of Utah, Salt Lake City, where he is engaged in teaching and research in electromagnetics, engineering pedagogy, and microwave biological effects.

Dr. Durney is a member of Sigma Tau, Phi Kappa Phi, Sigma Pi Sigma, Eta Kappa Nu, and the American Society for Engineering Education.

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Leopold B. Felsen (S'47–A'53–M'54–SM'55–F'62), for a photograph and biography please see page 127 of the February 1978 issue of this TRANSACTIONS.

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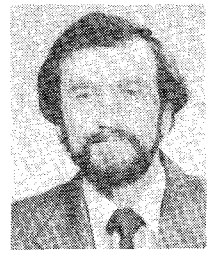

Michael Franz was born in Jakobsthal, Germany, on September 26, 1948. He received the Dipl. Ing. degree in electrical engineering from the Technische Universität, Munich, Germany, in 1973. In 1975, he received the M.S. degree in electrical engineering and is currently completing studies towards the Ph.D. degree in electrical engineering at the University of Wisconsin, Madison.

He served as a Teaching Assistant in the Department of Electrical and Computer Engineering, University of Wisconsin, Madison. His research included the study of microwave-solid state interaction.

Mr. Franz is a member of Sigma Xi.

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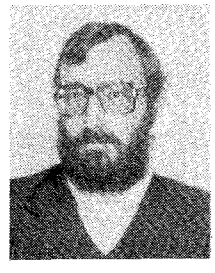

Claude Fray was born in Limoges, France, on June 14, 1942. He received the Doctorat es Sciences degree from the University of Limoges, in 1977.

Since 1970, he has been an Assistant Professor at the Institute of Technology, University of Limoges. He studies low-loss transmission lines for vehicular communications.

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Om P. Gandhi (S'57–M'58–SM'65) was born in Multan, West Pakistan, on September 23, 1934. He received the B.Sc. (Honors) degree in physics from Delhi University, Delhi, India, in 1952, and the Diploma in electrical engineering from the Indian Institute of Science, Bangalore, India, in 1955. Continuing his graduate studies at the University of Michigan, Ann Arbor, he received the M.S.E. and Sc.D. degrees in electrical engineering in 1957 and 1960, respectively.

Subsequently, he worked on semiconductor plasmas at the Philco Scientific Laboratory, Blue Bell, PA. From 1962 to 1966, he worked at the Central Electronics Engineering Research Institute, Pilani, India, first as Assistant Director and then as Deputy Director in charge of the Microwave Devices Group. Since 1967, he has been with the University of Utah, Salt Lake City, where he is a Professor of Electrical Engineering and Research Professor of Bioengineering with research interests in

microwave and optical interactions in solids and microwave biological effects.

Dr. Gandhi is a member of Sigma Xi, Phi Kappa Phi, and Eta Kappa Nu.

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M. W. Gunn received the B.Sc. degree in physics and mathematics from the University of Queensland, Brisbane, Australia, in 1949, the M.Sc. degree in electrical communications from McGill University, Montreal, P.Q., Canada, in 1959, and the Ph.D. degree in electrical engineering from the University of London, England, in 1962.

From 1962 to 1968, he held appointments as Assistant Professor and Associate Professor in electrical engineering at McMaster University, Ont., Canada, and in 1968 accepted a Chair in Electrical Engineering (electronics and communications) at the University of Queensland, Brisbane, Australia. From 1942 to 1944, he served as a Radar officer in the Royal Australian Air Force. From 1945 to 1957, he served as a Cadet Engineer and Telecommunications Engineer in the Australian Post Office. His main research interests are in fields of microwaves and semiconductors.

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Mark J. Hagmann (S'75) was born in Philadelphia, PA, on February 14, 1939. He received the B.S. degree in physics from Brigham Young Univeristy, Provo, UT, in 1960, and the M.Sci.Ed. degree from the University of Utah, Salt Lake City, in 1966.

He worked as a Physics and Mathematics Teacher during 1961–1964. He did additional graduate studies in physics at Brigham Young University, Provo, UT, during 1965–1967. During 1968–1975, he worked in the research and development of explosives for IRECO Chemicals, West Jordan, UT. Since 1975, he has been a graduate student in the Department of Electrical Engineering at the University of Utah, Salt Lake City, where he is working towards the Ph.D. degree with emphasis on the interaction of electromagnetic radiation with biological systems.

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Nobuaki Kumagai (M'59–SM'71) was born in Ryojun, Japan, on May 19, 1929. He received the B.E. and D.E. degrees both from Osaka University, Osaka, Japan, in 1953 and 1959, respectively.

From 1958 to 1960, he was a Visiting Senior Research Fellow at the Electronics Research Laboratory of the University of California, Berkeley, where he was engaged in research on electromagnetic wave scattering and parametric amplifiers. From 1960 to 1970, he was an Associate Professor of Communication Engineering at Osaka University. In 1966, he was invited to the 11th G-MTT International Symposium as an invited speaker. Since 1971, he has been a Professor of Communication Engineering at Osaka University, Osaka, Japan, where he is engaged in research and education in electromagnetic theory, microwave and millimeter-wave engineering, optical waveguides and devices, and lasers and their applications. He is the coauthor of *Microwave Circuits* (OHM-sha, Tokyo, 1963) and *Introduction to Relativistic Electromagnetic Field Theory* (Corona Publishing Co., Tokyo, 1971).

Dr. Kumagai is a member of the Institute of Electronics and Communication Engineers of Japan, the Institute of Electrical Engineers of Japan, the Japan Society of Applied Physics, and the Physical Society of Japan.

Leonard Lewin (A'69–SM'75) was born in Southend-on-Sea, England, on July 22, 1919.

During World War II he was with the British Admiralty doing research on antenna design, waveguides, and radar. In 1946, he joined the Standard Telecommunication Laboratories, Harlow, England, where he became Head of the Microwave Laboratory in 1950, and Assistant Manager of the Transmission Research Laboratory in 1962. Currently he is Professor of Electrical Engineering at the University of Colorado at Boulder, where he is Coordinator of an interdisciplinary M.S. program in telecommunications. He is the author of many papers and patents in the field of antennas and waveguides, as well as author of four research books.

Mr. Lewin is a member of the Institute of Electrical Engineers (London) and a Fellow of the British Interplanetary Society. He won the Microwave Prize for a paper on singular integral equations applied to waveguides in 1962. In 1967, he was awarded an honorary degree of Doctor of Science from the University of Colorado, Boulder.

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Johannes A. G. Malherbe (M'75–SM'77) was born in Cape Town, South Africa, on March 15, 1940. He received the B.Sc., B.Eng., and Ph.D. degrees, all in electrical engineering, from the University of Stellenbosch, Stellenbosch, South Africa, in 1962 and 1974, respectively.

During 1963 and 1964, he worked with the Systems Group, Line Transmission Laboratories of G.E.C., Ltd., Coventry, England, and from 1965 to 1969, he was with the South African Post Office Laboratories. He has been a Senior Lecturer in the Department of Electrical Engineering, University of Stellenbosch, Stellenbosch, South Africa, since 1970, teaching courses on transmission lines, microwaves, and microwave circuits. His research activities have been mainly in the field of microwave filters and couplers; he has recently completed a book on microwave filters.

Dr. Malherbe is a member of the South African Institute of Electrical Engineers and a registered Professional Engineer with the South African Council for Professional Engineers.

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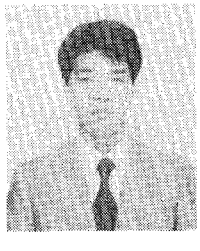

Yoshifumi Masaki was born in Osaka, Japan, on June 17, 1953. He received the B.E. degree in electrical communication engineering from Osaka University, Osaka, Japan, in 1976.

Presently, he is working for the M.E. degree at the graduate school of Osaka University, studying in the areas of integrated and light transmission optics.

Mr. Masaki is an associate member of the Institute of Electronics and Communication Engineers of Japan.

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Masanori Matsuhara was born in Fukui, Japan, on February 14, 1941. He received the B.E. degree in electrical engineering from Fukui University, Fukui, Japan, in 1963, and the M.E. and Ph.D. degrees in electrical communication engineering from Osaka University, Osaka, Japan, in 1965 and 1968, respectively.

He was a Research Associate from 1968 to 1972, and since 1972, he has been an Associate Professor of Communication Engineering at Osaka University. Also, he was a Research

Fellow at the Communication Research Center, the Department of Communications, Ottawa, Canada, from 1973 to 1975. He is engaged in studies of optical transmission lines and optical integrated circuits.

Dr. Matsuhara is a member of the Institute of Electronics and Communication Engineers of Japan.

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John B. Ness was born in Townsville, North Queensland, Australia, on February 12, 1950. He received the B.E. and Ph.D. degrees from the University of Queensland, Brisbane, Australia, in 1970 and 1977, respectively.

From 1975 to 1977, he was an Instructor in electromagnetic theory at the South Brisbane Technical College, Queensland. Since 1977, he has been with Amalgamated Wireless (Australasia), A.W.A., Sydney, New South Wales, where he is working on the development of microwave components for the Interscan version of the Microwave Landing System.

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Albert Papiernik was born in Paris, France, on April 7, 1940. He received the "Agregation de Sciences Physiques" degree in 1964, and the "Doctorat es Sciences" degree in 1969, from Orsay University, Orsay, France.

From 1964 to 1970, he worked at the Centre National de la Recherche Scientifique on microwaves and linear accelerators. He has been Professor at Limoges University, Limoges, France, since 1970. He is now engaged in studies of low-loss lines and beam–microwaves structures interaction.

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Riccardo Pratesi was born in Florence, Italy, in 1936. He received the Doctor degree in physics and the Ph.D. degree in quantum electronics from the University of Florence, Italy, in 1961 and 1969, respectively.

Since 1961, he has been an Assistant at the Institute of Advanced Physics of the University of Florence. Since 1970, he has served as Director of the Quantum Electronics Laboratory of the Consiglio Nazionale delle Ricerche (C.N.R.) in Florence, Italy. His scientific activity has been devoted mainly to classical electromagnetism, optics, and quantum electronics.

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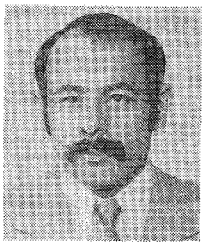
Laura Ronchi was born in Florence, Italy, on May 7, 1929. She received the Ph.D. degree in physics and electromagnetic waves from the University of Florence, Italy, in 1958.

Since 1958, she has been with the Instituto di Ricerca sulle Onde Elettromagnetiche of the Consiglio Nazionale delle Ricerche (C.N.R.) in Florence, Italy. Since 1962, she has taught optics and recently quantum electronics at the University of Florence. She has served as Director of Research at the Instituto di Ricerca sulle Onde Elettromagnetiche of C.N.R. since 1968.



Ahmad Safaai-Jazi was born in Esfahan, Iran, in 1948. He received the B.Sc. degree from the Arya-Mehr University of Technology, Tehran, Iran, in 1971, and the M. Sc. degree from the University of British Columbia, Vancouver, Canada, in 1974, both in electrical engineering. He is currently working towards a Ph.D degree at the Department of Electrical Engineering, McGill University, Montreal, P.Q., Canada.

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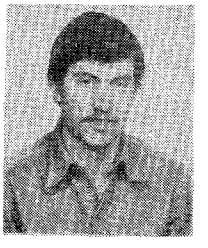

David B. Seidel (S'75–M'78) was born in Flagstaff, AZ, on November 26, 1951. He received the B.S., M.S., and Ph.D. degrees in electrical engineering from the University of Arizona, Tucson, in 1973, 1974, and 1977, respectively.

From 1973 to 1977, he was a Research Associate at the University of Arizona. Since July of 1977, he has been a Visiting Fellow with the Cooperative Institute for Research in Environmental Sciences. His research activities have included work in guided waves, EMP simulation, and antenna and scattering problems.

Dr. Seidel is a member of Tau Beta Pi.

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Sang-Yung Shin was born in Korea, on September 14, 1946. He received the B.S. degree in electrical engineering from Seoul National University, Korea, in 1968, and the M.S. and Ph.D. degrees in electrophysics from the Polytechnic Institute of New York (formerly Polytechnic Institute of Brooklyn), Brooklyn, NY, in 1973 and 1976, respectively.

In 1968, he studied at the Graduate School of Seoul National University for a semester until the commencement of his military service. From 1971 to 1975, he was a Research Fellow and, from 1976 to 1977, a Posdoctoral Fellow at the Polytechnic Institute of New York. He is now an Assistant Professor of Electrical Engineering at the Korean Advanced Institute of Science, Seoul, Korea.

Dr. Shin is a member of Sigma Xi.

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Andre F. Steyn was born in Cape Town, South Africa, on March 3, 1946. He received the B.Sc. and B.Eng. degree in electrical engineering from the University of Stellenbosch, Stellenbosch, South Africa, in 1974.

He has held the post of Chief Technical Officer at the Faculty of Forestry of the University of Stellenbosch since 1974, and is involved in microprocessor data processing systems development.

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John C. Tippet (S'68) was born in Macomb, IL, on December 12, 1948. He received the B.S. and M.S. degrees both in electrical engineering from the University of Colorado, Boulder, CO, in 1971 and 1975, respectively.

He is presently working towards the Ph.D. degree at the University of Colorado where he has been an NDEA Fellow and Research Assistant.

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

Yen-chu Wang (S'66–M'67) was born in Shantung, China, on November 25, 1938. He received the B.S. degree in electrical engineering from Cheng Kung University, Taiwan, China, in 1960, and the M.S. degree from Chiao Tung University, Taiwan, China, in 1962. Ffrom 1963 to 1969, he was with New York University, Bronx, NY, where he received the Ph.D. degree in electrical engineering, in 1969, for research in millimeter-wave generation using leaky space-charge waves in electron beam.

In 1969, he was an Associate Research Scientist at the Courant Institute of Mathematical Sciences, New York University, NY, where he studied mathematical problems of Gunn and avalanching diodes as well as nonlinear carrier waves in semiconducting media. In 1970, he was with the Hughes Aircraft Corporation in California. His major efforts involved the design of transistor VCO and varactor frequency doubler. From 1970 to 1973, he was employed as a Project Engineer for ADT Company, where he was engaged in the development of ultrasonic and microwave detection systems. From 1973 to 1974, he was employed by the General Microwave Corporation where he designed and developed the microwave radiation hazard meter and pin diode switch. He is presently serving as an Assistant Professor of Electrical Engineering at Howard University in Washington, DC, where he is engaged in teaching and research in microwave and millimeter-wave device/circuit modeling.

Harold A. Wheeler (A'27-M'28-F'35-LF'68) was born in St. Paul, MN, on May 10, 1903. He received the B.S. degree in physics in 1925, and the honorary degree of Doctor of Science in 1972, from George Washington University, Washington, DC. He did post-graduate work until 1928, at The Johns Hopkins University, Baltimore, MD.

He was employed by the Hazeltine Corporation from 1924 to 1946, advancing to Vice-President and Chief Consulting Engineer. In 1959, he resumed activity with this company as a Director, and is now Chairman Emeritus and Chief Scientist. From 1947, he was President of Wheeler Laboratories, Inc., Great Neck, NY, which became a subsidiary of Hazeltine Corporation and in 1971 merged with the parent company. His activity in the field of microwaves dated back to World War II, when he was one of the leaders in the Combined Research Group at NRL. That group was developing the future system of IFF (interrogation friend-or-foe), then designated the Mark V. From that beginning grew the Mark XII, which is now the standard. In the Wheeler Laboratories, during the two decades after the war, he directed advanced work on microwave antennas and circuits, largely for precision tracking radar. More recently, in the Hazeltine Corporation, he was active in the development of the microwave landing system of the future. He first used strip lines during the war and since then has been active in formulating the properties of the strip on a dielectric sheet on a plane, including the effect of mixed dielectric. He has contributed many papers to IRE periodicals, and has been granted 180 U.S. Patents and many foreign patents.

Mr Wheeler has served the IRE in such positions as Director (1934, 1940–1945) and Chairman of the Standards Committee; he received the Morris N. Leibmann Memorial Prize from IRE in 1940. In 1964, he was awarded the Medal of Honor by IEEE and the Armstrong Medal by the Radio Club of America. In 1975, he was the second to receive from G-MTT the Microwave Career Award. He is a Fellow of the Radio Club of America, an Associate Fellow of AIAA, an Associate Member of The Institute of Electrical Engineers (U.K.), and a member of Sigma Xi and Tau Beta Pi.

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Gar Lam Yip (S'63–M'67–SM'75) was born in Shanghai, China, on December 18, 1937. He received the B.Sc. (Hon.) degree from the Imperial College of London University, England, in 1960, the M.Sc. degree from Queen's University, Kingston, Ont., Canada, in 1963, and the Ph.D. degree from the University of Toronto, Toronto, Ont., Canada in 1967, all in electrical engineering.

He was a Teaching Assistant in the Department of Electrical Engineering, Queen's University, from 1961 to 1963, and then at the University of Toronto, from 1963 to 1967, in the areas of electronics and electromagnetic theory. In September 1967, he was appointed Assistant Professor, and since September 1973, he has been an Associate Professor in electrical engineering at McGill University, Montreal, P.Q., Canada, where he is teaching and doing research in electromagnetic theory, microwaves, and optical waveguides. He spent the summer of 1968 at the Plasma Physics Laboratory, RCA Victor Company, Montreal, P.Q., Canada, and in the summers of 1970 and 1971, he held a research appointment at the Communications Research Center in Ottawa. In 1969, he initiated research in fiber and integrated optics for optical communications at McGill University, Montreal, P.Q., Canada.