Contributors

David A. Abbott received the B.Sc. degree from the University of Southampton in 1973.

In 1973 he joined the Allen Clark Research Centre of the Plessey Company Limited where he has worked on GaAs MESFET's and their use as low-noise amplifying devices. Currently, he is working towards a Ph.D. degree on microwave noise measurement in conjunction with the University of Warwick.

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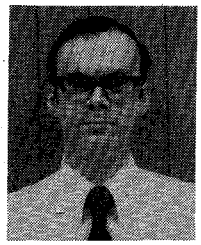

Richard Bera was an undergraduate student in the Physics Department at the Massachusetts Institute of Technology, Cambridge, from September 1961 until June 1966.

From September 1966 until August 1968 he was a member of the U.S. Army serving in the Army Medical Corps. In November 1968 he joined the Raytheon Research Division, Waltham, MA, as a Research Technician. He was promoted to the staff position of Research Assistant in 1972. He is currently a device evaluation engineer in the Microwave Semiconductor Laboratory. His specific responsibility includes all aspects of electrical evaluation of IMPATT diodes. He is also responsible for electrical instrumentation in the device test laboratory.

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Masumi Fukuta (M'73) was born in Gifu, Japan, on December 25, 1940. He received the B.S. degree in electrical engineering from the Nagoya Institute of Technology in 1963.

He then joined the Kobe Industries Co., which later merged with Fujitsu Ltd. Since joining the company, Mr. Fukuta has been working in the field of semiconductor devices including Si RF power transistors, IC's, and MOSFET's. In 1967 he invented and developed the Mesh Emitter Transistor. Since 1972 he has been engaged in developing low-noise and power GaAs MESFET's at Fujitsu Laboratories Ltd. He holds 11 patents on semiconductor devices.

Mr. Fukuta is a member of the IECE of Japan. In 1975 he received a prize medal from the Minister of Science and Techniques in Japan for outstanding contributions in the development of power GaAs MESFET's.

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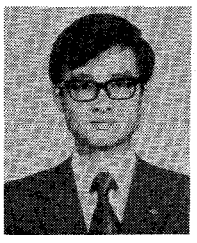

Takashi Furutsuka was born in Osaka, Japan, on June 1, 1948. He received the B.S. and M.S. degrees in electrical engineering from Osaka University, Osaka, Japan, in 1972 and 1974, respectively.

He joined the Nippon Electric Company, Ltd., Tokyo, Japan, in 1974, and is now a Staff Member of the Solid-State Laboratory, Central Research Laboratories, where he has been engaged in device design and fabrication of GaAs MESFET's.

He is a member of the Japan Society of Applied Physics.

Terrence M. S. Heng (M'69) was born in Seremban, Malaysia, on October 15, 1940. He received the B.Sc. degree in electrical engineering from Washington State University, Pullman, WA, in 1960, and the Ph.D. degree in electrical engineering from the University of Glasgow, Scotland, U.K., in 1965.

From 1965 to 1969 he was a Lecturer at the University of Malaya, Kuala Lumpur, where he taught and directed research in solid-state electronics and electromagnetic field theory. In 1969 he joined the Westinghouse Research Laboratories, Pittsburgh, PA, where he is currently the Manager of Microwave Devices. He is responsible for the research and development of new microwave materials and devices.

✣

Derry P. Hornbuckle was born in St. Louis, MO, on January 20, 1949. He received the B.S. degree in engineering from California Institute of Technology, Pasadena, in 1970, the M.S. degree in electrical engineering from the University of California, Berkeley, in 1976, and is currently a candidate for the Ph.D. degree at the University of California, Berkeley.

From 1968 to 1973 he was employed in the communications field with Executone of Southern California, South Pasadena. As a graduate student since 1973, he has been engaged in research on the use of Josephson junctions and oxide barrier junctions for detection and mixing. In September 1974 he joined Hewlett-Packard Company, Santa Rosa, CA, where he has worked on microwave amplifier and device design, while concurrently pursuing graduate studies.

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Toshiaki Irie (M'67) was born on September 1, 1933. He received the B.S. degree in electrical engineering in 1956 from the Tokyo Institute of Technology, and the Dr. Eng. degree in 1967 from the University of Tokyo.

He was employed in the Dainichi-Nippon Electronic Wire and Cable Company in Japan from 1956 to 1960, and joined the Nippon Electric Company, Ltd., in 1960. Since then he has worked on the development of low-noise and high-power microwave semiconductor devices and microwave integrated circuits. He is now Assistant Manager of the Microwave Devices Department, Semiconductor Division, of the Nippon Electric Company.

Dr. Irie is a member of the Institute of Electronics and Communication Engineers of Japan. In 1968, he was awarded the Okochi Memorial Grand Technology Prize for his contributions to scientific progress in microwave semiconductor devices.

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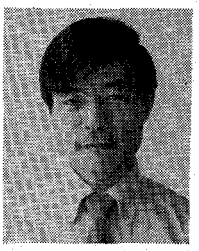
Hajime Ishikawa was born in Kurashiki, Japan, on February 11, 1939. He received the B.S. degree in electrical engineering from Tohoku University in 1961.



He then joined the Kobe Industries Co., which later merged with Fujitsu Ltd. Since joining the company, Mr. Ishikawa has been working in research of surface physics of semiconductors and in the development of microwave communication systems. Since 1966 he has been engaged in developing semiconductor devices including Si low-noise and high-power bipolar transistors, and GaAs low-noise and power MESFET's in Fujitsu Laboratories Ltd.

Mr. Ishikawa is a member of the IECE of Japan and the Electrochemical Society.

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Nobuo Kawamura was born in Tokyo, Japan, on April 3, 1933. He received the B.S. and Ph.D. degrees in engineering from Tokyo University in 1958 and 1969, respectively.

He joined the Nippon Electric Company, Ltd., in 1958 and has been engaged in the developments of microwave transistors and of digital integrated circuits. He is now a Research Manager of the Solid-State Laboratory, Central Research Laboratories.

Dr. Kawamura is a member of the Japan Society of Applied Physics and the Institute of Electronics and Communication Engineers of Japan.

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Hideaki Kohzu was born in Nagano, Japan, on April 20, 1944. He received the B.E. and M.S. degrees in applied physics in 1968 and 1970, respectively, both from Waseda University, Tokyo, Japan.

He joined the Nippon Electric Company, Ltd., in 1970 and has been working on the development of microwave semiconductor devices including Schottky barrier diodes, P-I-N diodes, and GaAs MESFET's. He is now a member of the technical staff in the Microwave Devices Department, Semiconductor Division, of the Nippon Electric Company.

Mr. Kohzu is a member of the Institute of Electronics and Communication Engineers of Japan.

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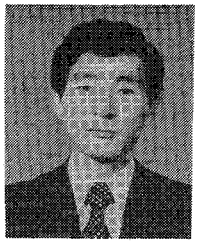
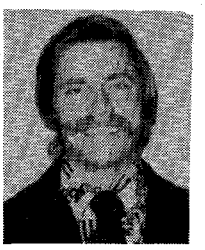


Shozo Komaki was born in Osaka, Japan, on April 3, 1947. He received the B.S. and M.S. degrees in electrical communication engineering from Osaka University, Osaka, Japan, in 1970 and 1972, respectively.

In 1972 he joined the Electrical Communication Laboratory, Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan, where he was engaged in repeater development for a 20-GHz radio digital transmission system. He is currently an Engineer in the Radio Transmission Section, Trunk Transmission System Development Division, Yokosuka Electrical Communication Laboratory, NTT.

Mr. Komaki is a member of the Institute of Electronics and Communications Engineers of Japan.



Louis J. Kuhlman, Jr., was born in Snohomish, WA, on October 8, 1947. He attended Whitman College, Walla Walla, WA, from 1965 to 1967 and received both his B.S.E.E. and M.S.E.E. from the University of Washington, Seattle, in 1969 and 1971, respectively.

As Research Assistant at the University of Washington, he set up a process for MOS transistor fabrication and designed a Hall probe for cryogenic studies. In May 1971 he joined Hewlett-Packard, Santa Rosa, CA, where he has worked on microwave, YIG-tuned oscillators with both bipolar and Gunn devices. He is currently involved in microwave MESFET amplifier design and applications.

Mr. Kuhlman is a member of Phi Beta Kappa and Tau Beta Pi.

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Osamu Kurita was born in Shizuoka, Japan, on June 22, 1942. He received the B.S. degree from Shizuoka University, Shizuoka, in 1968, and the M.S. and Ph.D. degrees from Tokyo University, Tokyo, Japan, in 1970 and 1973, respectively.

In 1973 he joined the Electrical Communication Laboratory, Nippon Telegraph and Telephone Public Corporation, Yokosuka-shi, Japan. He has been engaged in research on microwave and millimeter-wave circuits and components. He is currently an Engineer in the Radio Transmission Section, Trunk Transmission System Development Division, Yokosuka Electrical Communication Laboratory, NTT.

Dr. Kurita is a member of the Institute of Electronics and Communications Engineers of Japan.

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Charles A. Liechti (M'70–SM'75), for a photograph and biography please see page 278 of this issue.

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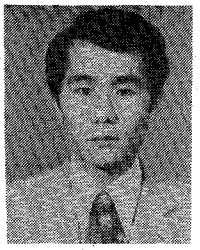
Daniel Massé (M'58) received his diploma in electrical engineering from Ecole Centrale de TSF, Paris, France, in 1951.

From 1951 to 1953 he was engaged in research and development of remote control equipment at the SECRE, Paris, France. In 1953 he joined the Compagnie Générale de TSF, Paris, France, to work on fire-control analog computers. From 1957 to 1967, he was with the Special Microwave Device Operation of the Raytheon Company where he was engaged in the research and development of ferrite components specializing in TEM devices. In the period from April 1961 to May 1962 he was on leave at the Research Division of Raytheon working on an Air Force contract study of nonlinear microwave ferroelectric devices. Since 1967 he has been a staff member in the Solid State Physics and Microwave Group of the Research Division. His experience in microwave measurement techniques has been applied to the measurements of ferrite and dielectric material properties. His current interests and activities are in the area of design and development of microwave integrated circuits and ferrite devices, the characterization and modeling of low-noise and high-power GaAs FET's and their associated circuits.

Mr. Massé is a member of the Professional Group on Microwave Theory and Techniques.



Tadashi Memita was born in Matsuyama, Japan, on March 9, 1946.

In 1966 he joined the Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan. He was engaged in microwave system maintenance at the Shikoku Telecommunication Bureau. Since 1975, he has been engaged in regenerator research for radio digital systems at the Electrical Communication Laboratory. He is currently an Engineer in the Radio Transmission Section, Trunk Transmission System Development Division, Yokosuka Electrical Communication Laboratory, NTT.

Mr. Memita is a member of the Institute of Electronics and Communications Engineers of Japan.

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Kozo Morita was born in Wakayama, Japan, on November 30, 1943. He received the B.S. and M.S. degrees in electronics engineering from Kyoto University, Kyoto, Japan, in 1966 and 1968, respectively.

Since joining the Electrical Communication Laboratory, Nippon Telegraph and Telephone Public Corporation, Tokyo, he has been engaged in research on IF amplifiers and mixer circuits for 20-GHz digital communication systems. He is currently a Staff Engineer in the Planning and Coordination Office, Yokosuka Electrical Communication Laboratory, NTT.

Mr. Morita is a member of the Institute of Electronics and Communications Engineers of Japan.

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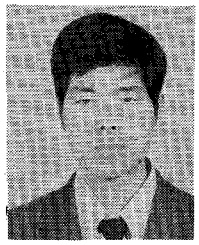

Isamu Nagasako was born in Shimane, Japan, on July 8, 1940. He graduated from the Matsue Technical College in 1970.

In the same year he joined the Nippon Electric Company, Ltd. Since then he has been working on failure mode analyses of bipolar and field-effect transistors. He is now a member of the technical staff in the Reliability and Quality Control Department, Semiconductor Division of the Nippon Electric Company.

Mr. Nagasako is a member of the Institute of Electronics and Communication Engineers of Japan.

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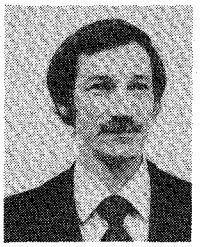
Yoshiro Nakayama was born in Nagano, Japan, on January 6, 1949. He received the B.S. and M.S. degrees in electronic engineering from Yamanashi University, Kofu, Japan, in 1971 and 1973, respectively.

In 1973 he joined the Semiconductor Laboratory, Fujitsu Laboratories Ltd., Kawasaki, Japan. He has since been engaged in the research of GaAs MESFET and GaAs epitaxial growth by CVD.

Mr. Nakayama is a member of the Institute of Electronics and Communication Engineering of Japan, and the Japan Society of Applied Physics.



Robert E. Neidert (M'70) was born in Nashville, TN, on April 7, 1937. He received the B.E. (EE) degree in 1959, from Vanderbilt University, Nashville, TN, and has done graduate work at the University of Florida, St. Petersburg.

From 1959 to 1962 he was with the Sperry Microwave Electronics Company, Clearwater, FL, where he was engaged in development of microwave components for radar systems. From 1962 to 1969 he served as Senior Design Engineer and Project Leader at the General Electric Company, Communications Products Department, Lynchburg, VA, in design and development of microwave components and solid-state sources for TV and multiplex telephony radio relay equipment. From 1969 to 1972 he was a Principal Engineer at Radiation Systems, Incorporated, McLean, VA, where his work was in antenna and antenna feed network design. Since 1972 he has been at the Naval Research Laboratory, Washington, DC, where he has been involved in research on microwave circuits for solid-state devices. He has authored or coauthored several papers in the fields of communications system components, microwave integrated circuits, computer-aided microwave circuit design, and microwave power transistor amplifier design.

Mr. Neidert is a member of Tau Beta Pi.

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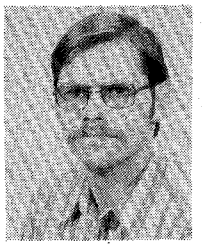

James G. Oakes (S'71–M'73) was born in Teaneck, NJ, on May 12, 1947. He attended Cornell University in Ithaca, NY, where he received the B.Sc., M.S., and Ph.D. degrees in electrical engineering.

His research at Cornell included the design of microstrip avalanche diode oscillators and a simulation of carrier transport in the low field regions of the Schottky barrier BARITT diode. He joined the Westinghouse Research Laboratories in 1974, where he is involved with both silicon and GaAs microwave power devices.

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Masaki Ogawa was born in Nagano, Japan, on March 28, 1945. He received the B.S. degree from the Tokyo University, Tokyo, Japan.

He joined the Nippon Electric Company, Ltd., Kawasaki, Japan in 1968, and is now a Staff Member of the Solid-State Laboratory, Central Research Laboratories, where he has been engaged in GaAs MESFET development. His current research involves reliability studies of ohmic contacts to GaAs.

Mr. Ogawa is a member of the Japan Society of Applied Physics and the Institute of Electronics and Communication Engineers of Japan.

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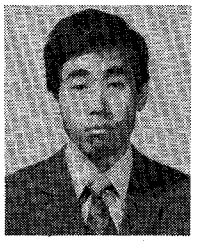

Keiichi Ohata was born in Osaka, Japan, on April 17, 1947. He received the B.S. and M.S. degrees in electronic engineering from Kyoto University, Kyoto, Japan, in 1970 and 1972, respectively.

He joined the Nippon Electric Company, Ltd., Kawasaki, Japan in 1972 and is now a Staff Member of the Solid-State Laboratory, Central Research Laboratories, where he has been engaged in research and development of ohmic contacts to GaAs and GaAs MESFET's.

Mr. Ohata is a member of the Japan Society of Applied Physics and the Institute of Electronics and Communication Engineers of Japan.

Robert A. Pucel (S'48–A'52–M'56–SM'64) received the B.S. and M.S. degrees in 1951, and the D.Sc. degree in 1955, all in electrical communications, from M.I.T., Cambridge, MA.

From 1948 to 1951 he was a Test Engineer on the M.I.T. Cooperative Course with the General Electric Company. Following his graduation, he joined the Microwave Tube Group at the Research Division of Raytheon Company, Waltham, MA. A year later he returned to M.I.T. where, from 1952 to 1955, he was a Staff Member of the M.I.T. Research Laboratory of Electronics doing theoretical studies in network theory, the basis for his doctoral thesis. In 1955 he rejoined the Research Division of Raytheon. From 1965 to 1970 he was Project Manager of the Microwave Semiconductor Devices and Integrated Circuits Program. Presently, Dr. Pucel is a Consulting Scientist at the Research Division. His work has involved theoretical and experimental feasibility studies of new semiconductor device concepts and the design of high-frequency semiconductor devices; for example, the tunnel diode, varactor, avalanche diode, Gunn and LSA structures, metal–semiconductor–metal (MSM) diodes, and bipolar transistors. His activities also have included theoretical and experimental studies of microstrip propagation on dielectric and magnetic subtrates, thin-film components for microwave integrated circuits, and miniature dielectric cavities. His recent studies are concerned with noise and signal properties of microwave field-effect transistors and Read diodes. He has published extensively on these topics.

Dr. Pucel is a Senior member of the Professional Group on Electron Devices and the Professional Group on Microwave Theory and Techniques. He is also a Registered Professional Engineer of the Commonwealth of Massachusetts.

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Kenji Sekido was born in Tokyo, Japan, on May 23, 1934. He received the B.E. degree in 1957 and the Dr.Sci. degree in 1965, both from the Tokyo Institute of Technology.

He joined the Nippon Electric Company, Ltd., Tokyo, Japan, in 1957, and had worked in NEC's Central Research Labs until April 1975, on research and development of silicon and compound semiconductor devices, particularly microwave active semiconductor devices. During that period he was at the Institute for Solid State Physics, the University of Tokyo, from 1962 to 1963, working on cyclotron resonance in semiconductors. About a year ago he shifted from the Central Research Labs to the Semiconductor Division of the Nippon Electric Company, and is now Engineering Manager of the Microwave Devices Department, in charge of device developments.

Dr. Sekido is a member of the Institute of Electronics and Communication Engineers of Japan and the Japan Society of Applied Physics.

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Nicholas A. Slaymaker was born in Surrey, England, on September 24, 1945. He was elected a scholar of Downing College, Cambridge University, Cambridge, England, where he received the B.A. degree in electrical sciences in 1968, and the M.A. degree in 1971. Research at the Cambridge University Engineering Department into avalanche diode oscillators led to the Ph.D. degree in 1971.

Since 1971 he has been employed by the Plessey Company Limited at the Allen Clark Research Centre, Towcester, Northants., England, working on GaAs MESFET's and their use in small-signal amplifiers at frequencies above 5 GHz. During 1975 he spent three months at the Technical University of Denmark, Lyngby, Denmark, working on the computer-aided design of GaAs MESFET amplifiers. He is at present interested in GaAs MESFET logic designs and the use of high-speed, medium-power devices as modulators for laser or LED transmitters in fiber-optic communication systems.

Dr. Slaymaker is an associate member of the Institution of Electrical Engineers, London, England.

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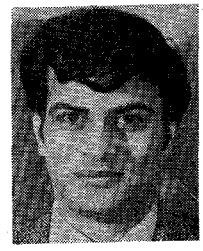

R. A. Soares was born in Bombay, India, on May 30, 1946. He emigrated to the United Kingdom in 1964. He received the B.Sc. (Hons.) degree in electrical engineering in 1967 and the Ph.D. degree in 1975 from the University of London, London, England.

From 1967 to 1970 he worked at the Central Applications Laboratory of the Mullard Company on the high-frequency applications of small-signal JFET's and MOSFET's. From 1970 to 1973 he was a Research Scientist at the Hirst Research Centre of the General Electrics Company, U.K., working on microwave amplifiers using bipolar transistors. Since January 1974 he has been a Senior Research Scientist at the Allen Clark Research Centre of the Plessey Company in Northamptonshire, England, where he is currently engaged in research on the *X*-band applications of GaAs MESFET's.

Dr. Soares is a member of the Institution of Electrical Engineers, London, England.

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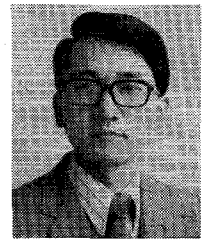

Katsuhiko Suyama was born in Tokyo, Japan, on May 12, 1947. He received the B.S. and M.S. degrees in electrical engineering from Keio University, Yokohama, Japan, in 1970 and 1972, respectively.

In 1972 he joined the Semiconductor Laboratory of Fujitsu Laboratories Ltd., Kawasaki, Japan, where he has been engaged in the research and development of low-noise and high-power GaAs MESFET's.

Mr. Suyama is a member of the Institute of Electronics and Communication Engineering of Japan.

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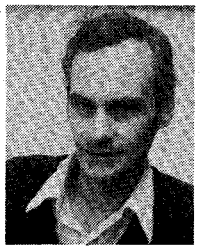
Hidetake Suzuki was born in Shizuoka, Japan, on July 31, 1945. He received the B.S. and M.S. degrees in applied physics from the Science University of Tokyo, Tokyo, Japan, in 1969 and 1971, respectively.

In 1974 he joined the Semiconductor Laboratory, Fujitsu Laboratories Ltd., Kawasaki, Japan. He has been engaged in the research and development of power GaAs MESFET's.

Mr. Suzuki is a member of the Japan Society of Applied Physics and the Institute of Electronics and Communication Engineering of Japan.



Douglas A. Tremere was born in Sioux Falls, SD, on April 12, 1932. He received the B.Sc. degree in chemistry from the South Dakota School of Mines and Technology, Rapid City, SD in 1954.

He joined the Schockley Semiconductor Corp. in 1958 and the Fairchild Semiconductor Co. in 1959 where he was involved in semiconductor research. From 1970 to 1972 he was with the Qualidyne Corp. where he worked on MOS integrated circuits development. Since 1972 he has been with the Westinghouse Research Laboratories where he is presently engaged in ion-implantation studies of InP and silicon epitaxial growth technology.

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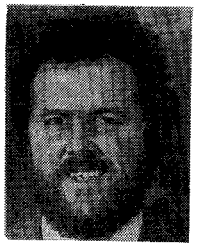

James A. Turner received a B.Sc. Honors degree in Physics at Sheffield University, England, in 1960.

Since that time he has been with the Plessey Company at their Research Laboratories at Caswell, Towcester, Northants., England. For some time he worked on bipolar transistors in silicon and then in gallium arsenide, but since 1965 he has worked on gallium arsenide field-effect transistors and their applications. At present he leads the GaAs FET device and applications Group at the Allen Clark Research Centre of the Plessey Company.

Robert A. Wickstrom was born in Pittsburgh, PA, on August 10, 1928. He attended the University of Pittsburgh and subsequently joined the Westinghouse Electric Corporation in 1947.

During recent years he has worked on the design and fabrication of numerous semiconductor devices, including the Mirror Matrix Tube light valve and the Resonant Gate transistor. He is currently involved in the development of microwave MOS transistors using a vertical mesa side as the active region.

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Harry A. Willing (A'54–M'58) received the B.S.E.E. degree from the University of Connecticut, Storrs, in 1952 and the M.S.E.E. degree from the University of Florida, Gainesville, in 1963.

From 1963 to 1967 he was with the Sperry Microwave Electronics Division, where he was engaged in the studies of microwave properties of ferrite materials and the microwave acoustic properties of various single-crystal media. From 1967 to 1971 he was with Texas Instruments, Incorporated, where he was engaged in the design and development of MIC Modules. From 1971 to 1975 he was with the Communications and Electronics Division, Martin Marietta Aerospace, where he designed solid-state RF power amplifiers for commercial microwave applications. He is presently with the Naval Research Laboratory, Washington, DC.