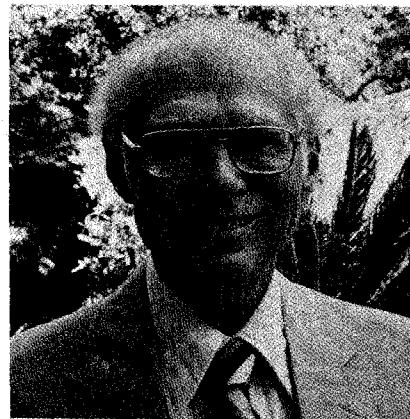


MICROWAVE CAREER AWARD

JOHN ROBINSON PIERCE

The Microwave Career Award is presented to an individual "for a career of meritorious achievement and outstanding technical contribution in the field of microwave theory and techniques." The 1984 Microwave Career Award has been awarded to Dr. John Robinson Pierce.



John Robinson Pierce was born March 27, 1910 in Des Moines, Iowa. He received the B.S., M.S. and Ph.D. degrees in electrical engineering in 1933, 1934, and 1936, respectively. All degrees were conferred by California Institute of Technology, Pasadena, California.

Dr. Pierce was employed by Bell Telephone Laboratories from 1936 to 1971. He progressed from a Member of the Technical Staff to Director of electronics research (1952-55), and eventually to Executive Director of the research and communications sciences division (1965-1971). From 1971 to 1980, Dr. Pierce was a professor at the California Institute of Technology. From 1979 to 1982, he served as Chief Technologist at the Jet Propulsion Laboratory. As of mid-December, Dr. Pierce has been with the Department of Music at Stanford University.

Dr. Pierce has made major and fundamental contributions to the development of high-frequency electron tubes, particularly traveling wave tubes. He has been granted more than eighty patents for his inventions in electron tubes and communication circuits, especially electron multipliers, electron guns, and microwave tubes. The "Pierce gun," built to design principles laid down by him, is an ubiquitous device in modern electronics.

In 1954, Dr. Pierce analyzed the possibilities of radio relay by way of an artificial satellite and in 1955, two years before the first satellite, offered the first concrete proposals for satellite communications. The Echo I satellite embodied his ideas. He was instrumental in initiating the Echo program and the last coast ground station was constructed in his department. Telstar resulted from satellite work that he initiated.

His career interests, responsibilities, and influence spanned such fields of interest as radio, electronics, acoustics and vision, mathematics, economic analysis, psychology and even computer music. Dr. Pierce has published nearly four hundred papers and articles, a number of science fiction stories, some published under the name of J. J. Coupling.

Some of his published books include: *Theory and Design of Electron Beams* (1949); *Traveling Wave Tubes* (1950); *Electrons, Waves and Messages* (1956); *Symbols, Signals and Noise* (1961); *Electrons and Waves* (1964); *Quantum Electronics* (1966); *Waves and Messages* (1967); *The Beginnings of Satellite Communications* (1968); *Science, Art and Communication* (1968); *Almost All About Waves* (1974); *Introductions to Communication Science and Systems* (1980); *Signals, the Telephone and Beyond* (1981); and *Information Technology and Civilization* (1983).

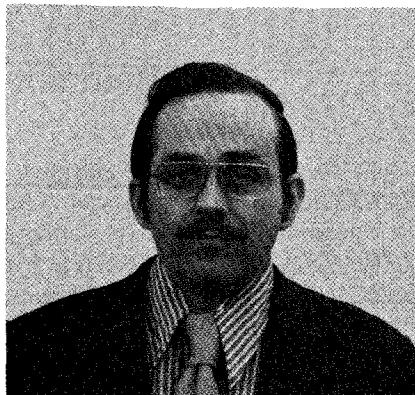
Dr. Pierce is a Life Fellow of the IEEE, a Fellow of the American Physical Society, a Fellow of the Acoustical Society of America, a member of the American Academy of Arts and Sciences, the American Philosophical Society, the National Academy of Engineering, the National Academy of Sciences and is a foreign member of the Royal Academy of Sciences (Sweden). He is also a member of Tau Beta Pi and Eta Kappa Nu. From 1963 to 1966, he served as a member of the President's Science Advisory Committee. He has been a Trustee of the Aerospace Corporation and of the Battelle Memorial Institute. Dr. Pierce has been granted ten honorary degrees, including a doctor of engineering from the University of Bologna in Italy in 1974.

Dr. Pierce has received a number of honors and prizes during his 46 year career. These include the IRE Morris N. Liebmann Memorial Prize in 1947, the IEEE Edison Medal in 1963 and the IEEE Medal of Honor in 1975. He also received the Stuart Ballantine Medal from the Franklin Institute (1960), the Certificate of Achievement from the American Astronautical Society (1961), the H. H. Arnold Trophy as the Aerospace Man of the Year from the Air Force Association (1962), the Golden Plate Award of the Academy of Achievement (1962) and the General Hoyt S. Vandenberg Trophy from the Arnold Air Society (1963). Dr. Pierce also received the National Medal of Science in 1963, the Valdemar Poulsen Gold Medal from the Danish Academy of Technical Sciences in 1963, the H. T. Cedergren Medal in 1964, and the John Scott Award from the Franklin Institute in 1974. He has also been the recipient of the Marconi Award (silver medal) in 1974, the National Academy of Engineering Founder's Award in 1977, and the Marconi International Fellowship in 1979.

MICROWAVE APPLICATIONS AWARD

Paul J. Meier

The *Microwave Applications Award* is presented to an individual for outstanding application of microwave theory and techniques. The eligibility requirements are creation of a new device, component or technique, novel use of a device or component, or a combination of all of the above.



The recipient of the 1984 Microwave Applications Award is Paul J. Meier of the AIL Division of Eaton Corporation. Mr. Meier is cited "for pioneering development of fin-line transmission medium and related components using photo-lithographic techniques."

Paul J. Meier was born in New York, NY in 1936. He received the B.E.E. degree from Manhattan College, New York, NY in 1958 and the Master of Science from Long Island University, Greenvale, NY in 1969.

From 1958 to 1965, Mr. Meier was employed by Wheeler Laboratories (now part of Hazeltine Corporation), first as a Development Engineer and then as a Senior Development Engineer. At Wheeler Laboratories his work included the study of dielectric-lined and periodically-loaded circular waveguides and their application to phased-array radiators and polarization converters.

In 1966, Mr. Meier joined Airborne Instrument Laboratories, now the AIL Division of Eaton Corporation. As a Project Engineer in the Radar Techniques Department, he was responsible for the development of phased-array antenna elements and ferrite phase-shifters. He later served as a Project Engineer in the Applied Electronics Division, where he was engaged in the development of a high-power, solid-state switch, an X-band sweeping receiver, and a multibeam quasi-optical millimeter-wave receiver. He is currently a Staff Consultant in the Receiver Systems and Technology Department, where he is developing millimeter-wave hybrid and monolithic integrated circuits.

Mr. Meier appropriately holds the U.S. patent for Integrated Fin-Line and has developed switches, mixers, filters, oscillators, circulators, and attenuators using fin-line in the 30 to 100 GHz range.

Mr. Meier has published over 30 papers on microwave and millimeter-wave components. He is a member of the IEEE, its Microwave Theory and Techniques Society, and Eta Kappa Nu. He served on the Executive Committee of the New York/Long Island Chapter of MTT-S from 1970 to 1975 and was its Chairman in 1972-1973. Mr. Meier served on the MTT-6 Technical Committee from 1977 to 1980 and is currently a member of the Standards Committee on Planar Transmission Lines.

1984 MTT-S MICROWAVE PRIZE

Reinmut K. Hoffman and Johann Siegl

The *Microwave Prize* is awarded annually to the paper making the most significant contribution to the field of interest of the Microwave Theory and Techniques Society. The paper must have been published in an official IEEE publication during the year ending June 30.

The 1984 Microwave Prize is awarded to Reinmut K. Hoffman and Johann Siegl for *Microstrip-Slot Coupler Design—Part I: S-Parameters of Uncompensated and Compensated Couplers* and—*Part II: Practical Design Aspects*. The pair of articles appeared in the IEEE Transactions on Microwave Theory and Techniques, Volume 30, Number 8, August 1982, pages 1205–1215.

Reinmut K. Hoffman was born in Hof/Saale, West Germany on July 9, 1942. He received the Dipl.-Ing degree in electrical engineering from the Technical University of Munich, West Germany in 1967.

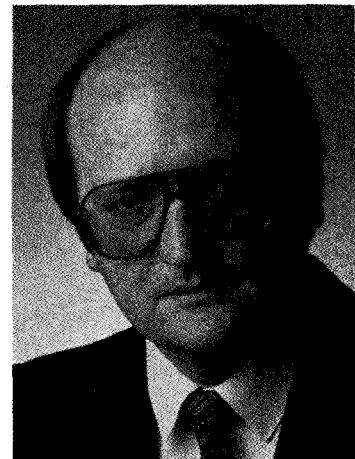
In October 1967, Mr. Hoffmann joined the Central Communications Laboratories of Siemens AG in Munich, where he was engaged in the development of microwave integrated circuits and in research on microstrip lines and couplers. Since 1973, Mr. Hoffmann has been in charge of a development group designing MIC components, such as mixers, amplifiers and phase-shifters, for radar and communications equipment and for developing computer-aided design methods for microwave integrated circuits.



Johann Siegl, born on June 5, 1947, received the graduate Ing. degree from the Ingenieurschule Munchen in Munich, West Germany in 1970 and the Dipl.-Ing. degree from the Technical University Berlin in 1973. In 1978, he received the Dr.-Ing. degree from the Technical University Berlin.

From 1973 to 1978, while at the Institute of High-Frequency Engineering, Dr. Siegl was a Research and Teaching Assistant at the Technical University in Berlin. During this time, he was engaged in the investigation of the properties of slot lines and fin lines in the millimeter-wave region.

At the beginning of 1979, Dr. Siegl joined the Communications Group at Siemens AG in Munich, West Germany. After initially working on the computer-aided design of MICs, Dr. Siegl has been involved in the development of digital transmission systems since 1981.



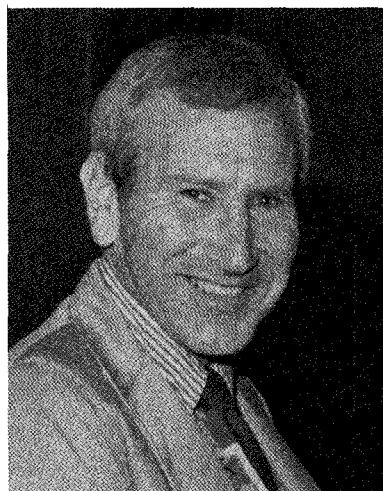
DISTINGUISHED SERVICE AWARD

Alvin Clavin

The *Distinguished Service Award* is a relatively new award, initiated by the Microwave Theory and Techniques Society in 1983 with Theodore S. Saad as its first recipient.

The award is presented to honor an individual who has given outstanding service over a period of years for the benefit and advancement of the Microwave Theory and Techniques Society.

The Administrative Committee of the Microwave Theory and Techniques Society has selected Alvin Clavin as the recipient of the 1984 Distinguished Service Award "for his outstanding and dedicated service to the Society."



Al Clavin was elected to the MTT-S Administrative Committee in 1967 and served as Chairman of the Operating Committee and Editor of the MTT Newsletter. In the latter capacity, he was responsible for initiating the MTT Committees Directory. Al also served as the Chairman of the Membership Services Committee and was elected Vice-President in 1971 and President of the Society in 1972.

Al Clavin has served on the Technical Program Committee for many of the MTT Symposia and, when the International Microwave Symposium was held in Boulder, Colorado in 1973, he was its keynote speaker. Mr. Clavin has also been Publicity Committee Chairman for the 1970 Microwave Symposium and Chairman of the Steering Committee for the 1981 MTT-S Symposium.

Al has served as the MTT Society's representative to the IEEE Technical Activities Board (TAB) and has been a member of the MTT Society Awards Committee and the President's Advisory Committee under several Society Presidents.

Mr. Clavin is a Fellow of the IEEE. The Microwave Theory and Techniques Society has awarded Al Clavin the MTT Certificate of Recognition and its Distinguished Service Certificate.

In addition, Al Clavin has served as Vice-Chairman and Chairman of the Los Angeles Chapter of the Microwave Theory and Techniques Society.

Al Clavin's technical career began in 1948 as a member of the technical staff of Hughes Aircraft Company, Culver City, California after receiving the B.S.E.E. from the University of California at Los Angeles as a Hughes Fellow also in 1948. His duties included the design of radomes, antennas, and other microwave components. Mr. Clavin received the M.S.E.E. in 1954, also on a Hughes Fellowship and also from UCLA. In 1956, he helped found Rantec Corporation, Calabasas, California, where he served as Manager of the Microwave Department and a Corporate Director. He rejoined the Hughes Aircraft Company, Missile Systems Division in 1966 and became the Manager of the Radar Laboratory. In 1981, Mr. Clavin was appointed Manager of the Technology Development Staff in the Missile Development Division. Al Clavin retired from Hughes Aircraft Company on July 1, 1983 at the "old age" of 59 years, 14 days.

CENTENNIAL AWARDS

To commemorate the centennial year of the IEEE, a special award is to be given to the following recipients.

Stephen F. Adam

Alfred C. Beck

Alvin Clavin

Seymour B. Cohn

Marion E. Hines

Donald D. King

William W. Mumford

Arthur A. Oliner

Don Parker

Theodore S. Saad

Phillip H. Smith

Harold Sobol

Richard A. Sparks

Kiyo Tomiyasu

Lawrence Whicker

John R. Winnery

NEW IEEE FELLOWS

Professor Saburo Adachi Department of Electrical Engineering Tohoku University Aramaki Aoba Sendai, Japan 980	For contributions to the theory and practice of antennas in plasma.
Dr. Carl E. Baum 5116 Eastern SE Unit D Albuquerque, New Mexico 87108	For pioneering the singularity expansion method and electromagnetic topology in electromagnetic theory and for development of EMP simulation and electromagnetic sensors.
Professor Heinz Beneking Department of Electrical Engineering Technical University of Aachen Templeraben 55 D-1500 Aachen, West German	For innovation in the field of compound semiconductor technology and devices, especially for work on heterostructure bipolar transistors.
Mr. Wallace H. Coulter 590 West 20 Street Hialeah, Florida 33010	For developments in automated instrumentation for clinical hematology and contributions to the technology of cytological instrumentation.
Mr. Julian W. Dees Office of Contract Administration Georgia Institute of Technology Atlanta, Georgia 30332	For advancing infrared and millimeter wave instrumentation through the application of the metal-oxide-metal detector.
Dr. Glenn F. Engen U. S. Department of Commerce National Bureau of Standards 724.01 Boulder, Colorado 80303	For contributions to microwave metrology, particularly the development of the "six-port" measurement technique.
Professor Wolfgang Harth Technische Universitat Munchen Arcisstrasse 21 D-8000 Munchen 2, West Germany	For contributions to optoelectronic and high-frequency semiconductor devices.
Dr. Shoei Kataoka Ministry of International Trade and Industry Electrotechnical Laboratory 1-1-4 Umezono Sakura, Niihari Ibaraki, Japan 305	For contributions in the field of compound semiconductor devices.

Dr. Anthony R. Kerr
National Aeronautics and Space
Administration
Goddard Institute for Space Studies
2880 Broadway
New York, New York 10025

For contributions to millimeter-wave receivers.

Dr. Hiroshi Kikuchi
3-8-18 Komagome
Toshima-ku
Tokyo, Japan 170

For contributions and leadership in plasma studies.

Mr. Louis F. Moose
Box 159, Route 5
Quakertown, Pennsylvania 18951

For contributions to microwave relay communication
systems.

Dr. Gentei Sato
4-1-37 Kamikizaki
Urawa
Saitama-ken, Japan 338

For research and development in the field of special-
ized antenna design.

Professor Erwin Schanda
Institute of Applied Physics
University of Bern
Sidlerstrasse 5
CH-3012 Bern, Switzerland

For theoretical and experimental contributions to
microwave emission from the earth and atmosphere.

Dr. Gunther U. Sorger
25 Lerida Court
Menlo Park, California 94025

For innovative contributions to the development of
precision, electronic measuring instruments, and
standards.

Dr. Kunihiro Suetake
3-10-11, Minami
Meguro-ku
Tokyo, Japan 152

For contributions to the theory and techniques of
microwave absorbers and the introduction of educa-
tional technology.

Dr. William R. Wisseman
5747 Melshire Drive
Dallas, Texas 75230

For technical leadership in the development of gal-
lium arsenide power field-effect transistors and inte-
grated circuits.

Professor Eikichi Yamashita
Department of Applied Electronics
The University of Electro-
Communications
1-5-1, Chofugaoka
Chofu-shi
Tokyo, Japan 182 TOS-100

For contributions to the analysis and design of micro-
strip networks.

1983-84 DISTINGUISHED MICROWAVE LECTURER

MODERN MICROWAVE MEASUREMENTS



The use of digital computers made manifold changes/improvements in Microwave Measurement accuracies and speeds in the late sixties and were applied more broadly during the seventies. On board microprocessors are now being designed into measurement systems providing even more flexibility and accuracy enhancements. Automatic Spectrum Analyzers do a multitude of sophisticated measurements from simple modulation analysis through phase noise measurements. Network Analyzers are also expected to go through further improvements with a number of on board performance enhancements. A number of measurement techniques will be discussed dealing with power, frequency, noise and scattering parameters.

Dr. Adam has been involved with microwave research and development since 1952 and has held various R&D and engineering management positions at Hewlett Packard Company since 1957. He is the author of the book "Microwave Theory and Application," Prentice Hall, 1969 and is a Fellow of the IEEE. He has served the IEEE Microwave Theory and Techniques Society in many capacities including the Presidency in 1980.