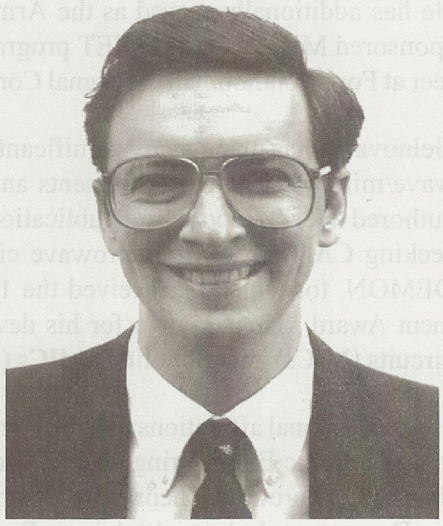
1997 DISTINGUISHED EDUCATOR AWARD

Dr. David B. Rutledge

This Award was inspired by the untimely death of Professor F. J. Rosenbaum (1937-1992), an outstanding teacher of microwave science and a dedicated MTT-S AdCom member/contributor. The award is given to a distinguished educator in the field of microwave engineering and science who exemplifies the special human qualities of the late Fred J. Rosenbaum. Fred considered teaching a high calling and demonstrated his dedication to MTT-S through tireless service.

The award consists of a plaque and an honorarium of $1,000. The awardee must be a distinguished educator, recognized, in general, by an academic career coupled to many years of service to the microwave profession. The effectiveness of the educator should be supported by a list of graduates in the field of microwave science who have become recognized in the field. The candidate shall also have an outstanding record of research contributions documented in archival publications. The candidate shall also have a record of many years of service to MTT-S.

The honored recipient of this year's award is Dr. David B. Rutledge, Professor of Electrical Engineering at the California Institute of Technology. The citation reads: "FOR LEADERSHIP IN TEACHING, RESEARCH AND IN THE MICROWAVE PROFESSION."



David B. Rutledge (M'75, S'77, M'77, S'78, M'80, SM'89, F'93) grew up in Fort Worth, Texas. He attended Williams College, in Williamstown, Massachusetts, receiving a B.A. in Mathematics in 1973, and Cambridge University, Cambridge, England, receiving an M.A. in Electrical Sciences in 1975. He worked as an Aerosystems Engineer on microwave data links for General Dynamics (now Lockheed-Martin) in Fort Worth, Texas in 1975 and 1976. He received his Ph.D. in Electrical Engineering in 1980 from the University of California, Berkeley. His advisor was Professor Steven Schwarz, and the thesis topic was *Submillimeter-Wave Integrated-Circuit Antennas and Detectors*.

Since 1980, he has been teaching at Caltech and working on microwave circuits and antennas. His research group developed key ideas in integrated-circuit antennas, including lens-coupled antennas, which appear widely in radio-astronomy receivers. His group demonstrated anisotropic etching for fabricating horns and membrane technology for suspending metal antennas. The group first described leakage from planar transmission lines, and first demonstrated many active quasi-optical components, including phase shifters, oscillators, mixers and amplifiers. Recently the group has developed Class-E HF power amplifiers for industrial and amateur use. He is co-author with Scott Wedge and Richard Compton of the widely distributed educational microwave computer-aided design package, *Puff*, with 15,000 copies worldwide.

He was a visiting scientist at CSIRO, New South Wales, Australia, in the summer of 1985, at the Research Institute for Electrical Communication, Tohoku University, Sendai, Japan, in the spring and summer of 1988, and at the National Defense Academy, Yokosuka, Japan in the fall of 1995. He has been a Distinguished Lecturer for the Antennas and Propagation Society from 1991 to 1993 and is a member of the AP-S AdCom. He was honored with the Teaching Award of the Associated Students of Caltech, and five of his students have been awarded Presidential Investigator and Career Awards.

He has served as Chairman for nineteen doctoral candidates and has authored or co-authored over 200 publications. He is an IEEE Fellow and was one of the recipients of the MTT-S Microwave Prize in 1993.