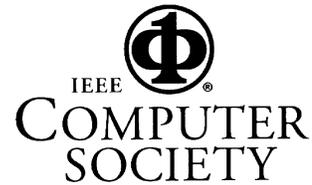# The Life of SPICE

(cosponsored by **Princeton IEEE AP/ED/MTT Chapter**)

Larry Nagel, Omega Enterprises

The integrated circuit industry thrives on constant change and is not particularly known for tradition. It is curious, then, that the SPICE circuit simulation program, in one form or another, has been around the industry for over thirty years. That means that many engineers entering this booming business today weren't even born when I released the first version of SPICE! In this talk, I will chart the journey of SPICE, starting as a teaching program at the University of California, Berkeley, and spreading into industry, launching a cottage industry of software houses writing and supporting "alphabet SPICE." I also will give credit to all of the early principals in this journey, and share some of my more amusing experiences during the journey. Nobody can say for sure, but I will offer my opinions on how this particular program has evolved in thirty years and yet stayed pretty much the same. I can think of no other computer program that can make that claim.

Laurence W. Nagel has worked in the integrated circuit industry for about 29 years. While earning his BS, MS, and PhD degrees at the University of California, he developed the SPICE circuit simulation program and launched a cottage industry of SPICE simulation tools. Mr. Nagel then began a 20 year career at Bell Laboratories which included developing the ADVICE circuit simulation program; participating in the development of process and device simulation tools; participating in the development of the Kull-Nagel bipolar model; designing analog circuits for submicron NMOS processes; working in the AT&T Intellectual Property Division working on assertion of patents and negotiation of patent licenses; and serving as project manager in the development of the Celerity circuit simulation program. Mr. Nagel joined Anadigics, Inc. in 1995, where he worked on supporting simulation of RF integrated circuits; modeling and characterization of GaAs MESFET device processes; and importing silicon CMOS design tools and foundry support. In 1998, Mr. Nagel founded his own company, Omega Enterprises, which offers consulting services in analog and RF integrated circuit design, device modeling, circuit simulation, and expert witness work in patent and trade secret litigation.

Date: Thursday, January 15, 2004, 8:00 pm (Refreshments at 7:30 pm)
Place: Sarnoff Corporation, Routes 1 and 571, Princeton, NJ
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On-line info: **http://www.acm.org/chapters/princetonacm**

All ACM / IEEE-CS meetings are open to the public. Students and their parents are welcome. There is no admission charge, and refreshments are served.

A pre-meeting dinner with the speaker is held at 6:00 p.m. at Ruby Tuesday's Restaurant on US 1. Please send e-mail to **princetonacm@acm.org** in advance if you plan to attend the dinner.