LV-SSCS Meeting Oct. 20, 2016

Bipolar Transistors/ICs in the Lehigh Valley and Beyond
by Paul C. Davis, IEEE Fellow

Location: Packard Lab, Lehigh University

AGENDA

6:00 Rm 324 Refreshments (please register at http://meetings.vtools.ieee.org/m/41594 )
7:00 Rm 416 Presentation

ABSTRACT

Many of you have worked at or have heard about the Western Electric Semiconductor Plants at Allentown and Reading, or the associated Bell Labs branch laboratories. Before Silicon Valley, some believe the birth place and youth home of military and commercial transistors and custom IC's was in eastern Pennsylvania. In 1961, starting with a single PNPN transistor that could switch 8 KW in 100 ns for military radar up to 1995 when Reading/Allentown Western Electric/ Bell Labs made the front page of Electronic News with a full chip set for GSM cellular, Reading and Allentown WE/BL have been among the leaders in semiconductors. This talk, by Paul Davis (in Reading/Allentown since 1962), will include a partial listing of major semiconductor and learning projects, and some anecdotes about them. In 1962, RF amplifiers above 1 GHz were being built with Reading transistors. In 1970, 30 years before smart phones, Picturephone © (using Reading IC's and light detector) was transmitting and receiving TV type pictures in real time over Bell System transmission systems. Included will be some old pictures of Reading people (some passed), list of major development projects, and a list of educational projects (such as conferences and in-hours courses). Also included will be a brief history of the BCTM Conference, which emphasizes bipolar transistors and IC's.

SPEAKER BIOGRAPHY

Paul C. Davis received the B.S. Degree from West Virginia University, the M.S. degree from MIT, and the Ph.D. degree from Lehigh University. He worked for Bell Telephone Labs and its successor Lucent Technologies from 1962 to 2001.
Paul was recognized as Bell Labs' expert on architectures and circuit topologies of bipolar ICs, particularly of complex systems such as transceivers. His bipolar GSM cell phone architectures from the late 1980's were the industry standard from 1995 until 2000.
He provided both marketing and technical contributions in negotiating specifications with prospective customers, defining chip architectures, and specifying subcircuit performance requirements.
He has also made major contributions to clock recovery circuits for fiber optics data transmission, line feed telephone circuits, single-chip telephone IC design, and T1C repeater circuits.
Paul has given nine graduate seminars at major universities in the US and abroad.
He has 20 publications and 18 US patents.
He is truly a major participant in ISSCC, where he has: given 7 ISSCC papers, one of which received the 1981 "Best Paper Award", served on ISSCC's Technical Program Committee for 11 years, and attended every ISSCC since 1962 – 56 consecutive years and counting!
Paul was named a Bell Labs Distinguished Member of Technical Staff in 1982, and an IEEE Fellow in 2011.