

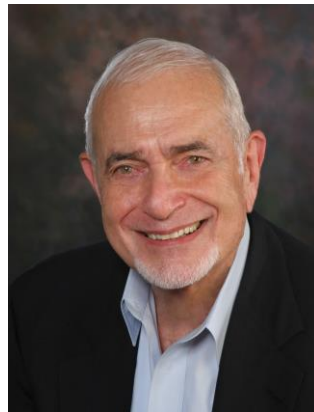


Systems Council Chapter Presents

IEEE Distinguished Lecture Series on

**The Things We Ought to Know About Digital
Communications: Part 4**

by Dr. Bernard Sklar



Date: March 23, 2017 (Thursday)

Time: 12:00-2:00 PM

Location: VEC 325, California State University, Long Beach

Abstract: The fourth part of this series on what we've been given by the "giants in our field," covers the area of Fading Channels: Characterization and Mitigation. We examine the phenomenon of multipath with four basic relationships: Multipath Intensity Profile, Spaced-Frequency Correlation, Spaced-Time Correlation, and Power-Doppler Spectrum. This model allows us to understand the mechanisms that cause all types of fading, and how to overcome their degrading effects. The talk is geared toward managers, software developers, and whoever wants to partake in the passion that drives communication engineers.

The details involve: Large-scale fading, small-scale fading, and their mechanisms. Differences between Frequency-Selective fading and Flat fading; Fast fading and Slow fading; Coherence bandwidth, Coherence time, and Doppler spread. Why is signal dispersion independent of fading rapidity? Degradation effects: loss in SNR, ISI distortion, irreducible error rate, pulse mutilation, and Doppler spreading. How to design a system that can withstand fading degradations.

About Speaker: Dr. Bernard Sklar has over 60 years of technical experience at the following companies: Republic Aviation, Hughes Aircraft, Litton Industries, and The Aerospace Corporation. At Aerospace, he helped develop the MILSTAR satellite system, and was the principal architect for EHF Satellite Data Link Standards. Currently, he is the Director of Advanced Systems at Communications Engineering Services, a consulting company he founded in 1984. He has taught engineering courses at several universities, including the University of California, Los Angeles and the University of Southern California. He was an External Examiner of Digital Communication Engineering at the University of Cape Town, South Africa, and has presented numerous training programs throughout the world.

Dr. Sklar has published and presented over 100 technical papers. He received the 1984 Prize Paper Award from the IEEE Communications Society for his series on digital communications, and he is the author of the book, *Digital Communications: Fundamentals and Applications*, 2nd Edition, Prentice-Hall, 2001. His academic credentials include a B.S. degree in Math and Science from the University of Michigan, an M.S. degree in Electrical Engineering from the Polytechnic Institute of Brooklyn, New York, and a Ph.D. degree in engineering from the University of California, Los Angeles.

For more information, please contact the secretary of IEEE Coastal Los Angeles Systems Council Chapter, Dr. Hengzhao Yang at hengzhao.yang@csulb.edu. □