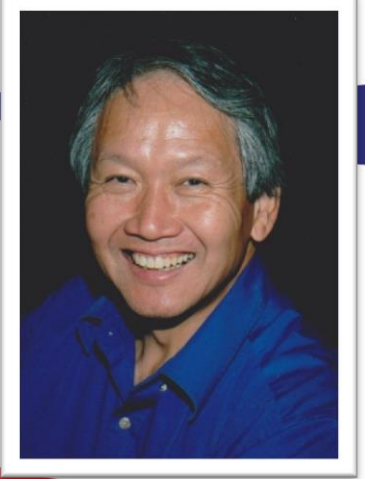




CASPER



Baylor University and CASPER present:

Gary Lum, Ph.D

Lockheed Martin Engineering Fellow, Lockheed Martin Space Systems Company Sunnyvale, CA

Survival of Electronics in a Space Environment

Abstract: Dr. Lum will present a lecture about the survival of electronics in a space environment. In this lecture he will first describe the radiation environment of space, and then will cover the interaction of radiation in materials and how radiation affects electronics. Finally, he will describe hardening solutions.

Gary received his BS in physics at University of California, Berkeley in 1970 and his MS and Ph.D. in physics in 1973 and 1979, respectively at University of Oregon, Eugene. In 1980 Gary joined Lockheed Missiles System Division, Sunnyvale, CA, heading a radiation effects analysis group. Between 1984 and 1986 he worked at Intel Corporation, Santa Clara, CA, as a device physicist on nonvolatile memories. Shortly after 1986, he returned to Lockheed to support the Trident II strategic missile research program and a number of space programs. From 1987 to 1990 Gary headed a study to understand the effects of neutral particle beams on electronics and the effect of the space environment in the electronics of the Fleet Ballistic Missile (FBM) systems. His areas of expertise are: (1) IC fabrication processes and modeling of CMOS and bipolar technologies and (2) the understanding of radiation effects in semiconductor devices in a nuclear and the natural space environments

Gary continues to support both satellite and missile programs in radiation testing and in risk assessment analyses of electronic components. This involves deriving the radiation environment for the system, transporting the environment into a package and assessing the radiation impact for the system and making recommendations for hardening solutions. Satellite and missile programs that he supported include: IMAX Inc, Iridium, Gravity Probe B, International Space Station, HIRDLS, Hubble Space Telescope and Star Tracker. Gary has collaborated research with Sandia National Laboratories and the Trident FBM program since 1998 in understanding the radiation effects of COTS components for strategic and tactical applications.

Friday, November 7, 2014, 2:30 PM

Baylor Sciences Building C.206

For more information, contact Sherri Honza at 254-710-1271