



SPRING 2014 SEMINAR SERIES

Annual Ludwick Lecture in honor of Professor Jack C. Ludwick

DEPARTMENT OF OCEAN, EARTH, AND ATMOSPHERIC SCIENCES
3PM – ROOM 200 IN THE OCEANOGRAPHY/PHYSICS BUILDING
THURSDAY APRIL 10th, 2014

“El Nino’s Family Tree.”

George Philander
Princeton University

ABSTRACT

Fluctuations in tropical Pacific rainfall and sea surface temperature (SST) patterns involve different processes on different timescales, but nonetheless have certain features (traits) in common so that all can be viewed as members of the same family. The well-known children El Niño and La Niña who perform the Southern Oscillation by moving warm surface waters back and forth across the Pacific, have nephews and nieces in the Atlantic and Indian Ocean. They all depend on the thermocline having a suitable depth which the parents El Padre and La Madre control and, at times, make so deep that oscillations are impossible and El Niño conditions become permanent. This is the spontaneous, natural branch of the family. Another branch responds to external forcing (externally imposed variations in sunlight) and has as members the cycles of the seasons, of obliquity, and of the precession of the equinoxes. Being acquainted with this family is an advantage because they can shed light on the recurrent Ice Ages, and can assist with improving complex climate models.

**AFTER THE SEMINAR, PLEASE JOIN US IN ROOM 404, THE ZANEVELD CONFERENCE ROOM,
FOR COFFEE AND COOKIES, AND TO MEET WITH THE SEMINAR SPEAKER.**