

Date: THURSDAY, October 6, 2016

Time: 3:30-4:45 PM

Place: Buchanan 1930

Speaker: Dr. Tommy Dickey; Professor Emeritus, Department of Geography, UC Santa Barbara

Title: "Reflections on Research Around the World Ocean in 40 Years"

Abstract:

Highlights of research and teaching experiences over four decades will be presented in this farewell colloquium. The ocean is a complex fluid medium, which is vital to life on earth and highly influential on weather and climate and vice versa. Much progress has been made in quantifying horizontal variability in many ocean properties at the surface using satellite-based electromagnetic (EM) sensors. However, the upper ocean is highly variable in its properties at depths, which cannot be probed using EM sensors because of water's strong EM absorption. As a consequence, much of our group's ocean research has focused on the development of new in situ interdisciplinary measurement systems. These systems have enabled us to identify, study, quantify, and model several subsurface interdisciplinary ocean processes. The geographic regions of our studies have ranged from the equator to the subarctic and have included most of the northern hemisphere seas. In this talk, I will describe our approach to ocean problems with scales of centimeters and seconds to over 100's of kilometers and years. Our interdisciplinary research has been devoted to the effects on biological and biogeochemical processes by physical phenomena including: turbulence, internal gravity waves, bottom boundary layers, hurricanes, mesoscale eddies, seasons, monsoons, and equatorial dynamics and waves. In summary, our research has contributed to the development of improved observations and predictive numerical models of the ocean's physics, biology, and biogeochemistry.