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The **C**enter for **O**cean **S**ciences **E**ducation **E**xcellence-**West** invites you, your colleagues and students, family and friends to learn more about clouds! Admission is FREE.

COSEE-West and the Jet Propulsion Laboratory

present the third free lecture in the 2009-2010 series

"Cloud Structure, Composition, and Feedbacks in the current climate and a warming world"

Speaker: Dr. Terence Kubar

Postdoctorate Research Associate/NASA Fellow, Jet Propulsion Laboratory

at the Natural History Museum of Los Angeles County, Exposition Park

in the Mammal Hall

Wednesday, February 3, 2010

6:30 - 7:30 pm: Public lecture and Q&A
7:30 - 8:30pm: Educators' Session

Clouds have long astounded us with their beauty and vast variety of sizes, distributions, and thicknesses. In addition to their aesthetics, they are a critical component of the Earth climate system because they modulate the amount of sunlight reaching the surface and also emit infrared radiation, controlling the amount of outgoing longwave energy. The vertical structure, horizontal extent, and cloud type are important for determining surface temperature as well as the location and intensity of drizzle, rain, and snow. The appearance, horizontal coverage, and vertical extent of clouds are influenced by many spatial and temporal scales. Thus, an understanding of the factors that control clouds requires an understanding spanning from the cloud-droplet scale to the underlying meteorology and circulation of the atmosphere. Cloud feedbacks, cloud changes that occur as a result of a forcing such as global warming, are challenging to predict quantitatively and are key to understanding the range of projected global temperature rise. Extensive suites of cloud satellite data allow us to understand cloud variability versus meteorology in our current climate, which can lead to insights about predicting how clouds may change with climate change.

Terence Kubar, born in Fresno, CA, was able to pursue his early passion for meteorology by attending San Jose State University as a President's Scholar. He graduated in 2003 with a B.S. in meteorology and a minor in applied mathematics. Thereafter, he commenced graduate school at the University of Washington and completed his Ph.D. in atmospheric science in 2008 with his dissertation: "Cloud Structure, Microphysics, and Precipitation in Tropical Clouds Inferred from Satellite Data". Since then, Terry has been a NASA postdoctoral program fellow at Jet Propulsion Laboratory where he uses multi-sensor satellite and operational weather output data to examine the large-scale dynamical and stability controls on clouds in the tropics and subtropics. Terry is also an active member of the JPL Green Club which houses weekly meetings to discuss native gardening, connections between food production and the environment, energy and water conservation, solar and alternative energy technologies, and collaborations with local communities to monitor greenhouse gas emissions and suggest reductions goals.

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Please allow yourself extra time to navigate traffic and street construction. If you register with COSEE-West in advance, we will put your name on a list and you should be allowed to park for free in the lot on Menlo Ave across the street from the museum.

For map and directions, visit http://www.nhm.org/information/directions.htm

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K-12 teachers may get documentation for Professional Development hours upon request.

Educators: Pre-register for the educators' session to receive content materials
by e-mail to cosee.west@gmail.com or call the UCLA COSEE-West office at 310-206-8247.

For information about the COSEE-West program, visit http://www.usc.edu/org/cosee-west/

Supported by grants from the National Science Foundation to USC, UCLA & the College of Exploration for COSEE-West