

# NORTHERN CALIFORNIA GEOLOGICAL SOCIETY



**SPEAKER: *Dr. Isabel P. Montañez*, U.C. Davis**

## ***CO<sub>2</sub> - Forced Climate and Vegetation Instability During Late Paleozoic Deglaciation***

This talk will focus on evidence for substantially changing atmospheric CO<sub>2</sub> levels and surface temperatures during a 40-million year period ~305 to 265 million years ago, which encompasses the deterioration of the most widespread and long-lived icehouse of the last half billion years. This time period is our only vegetated Earth analogue of how the global climate system responds to natural global warming, and the consequent biotic impacts. Our results document strong linkages between atmospheric *p*CO<sub>2</sub>, climate and ice volume during the final stages of this ancient Ice Age (referred to as the Late Paleozoic Ice Age) that are consistent with greenhouse-gas-forcing of climate and epic deglaciation. Notably, these changes in atmospheric CO<sub>2</sub> contents are associated with substantial climate instability and climate-driven evolutionary-scale changes in tropical flora.

**Biography:** **Dr. Isabel P. Montañez** is a Full Professor in the Department of Geology, University of California, Davis, where she carries out research in reconstructing ancient climate regimes and their associated carbon-water cycle feedbacks and ecosystem impacts using an integration of field, geochemical, geochronologic and paleoecologic studies. She has served on numerous scientific, professional society, and editorial boards including the review panel of the NSF Geology and Paleontology Program; Co-Editor of *Sedimentology*; the Editorial Boards of *Geology* and *GeoBiology*, Associate Editor for *GeoSpheres*; AAPG's Committee on Global Climate Change, the Steering Committee of the NSF-directed initiative in 'deep-time' paleoclimatology, *GeoSystems*; and Research Councilor for the Society for Sedimentary Geology (SEPM). She and her research group have published regularly on topics related to paleoceanography and paleoclimatology including studies of marine and terrestrial depositional systems as well as diagenetic signatures of basinwide fluid-flow and regional dolomitization. She is the recipient of the Society for Sedimentary Geology's (SEPM) *James Lee Wilson Medal* for Excellence in Sedimentary Geology by a Young Scientist, the AAPG *Cam Sproule Award* for best publication in the AAPG Bulletin or other affiliated publications, and SEPM's award for *Outstanding Paper in the Journal of Sedimentary Research* (1992).