

[Register to Attend](#)[About the Meeting](#)[Schedule & Program](#)[Jobs Center](#)[Call for Papers](#)[Grants & Awards](#)[Get Involved](#)**Abstract Title:**

Development of a Midge-Based Inference Model to Assess late Holocene Climate Change in Costa Rica

is part of the Paper Session:

Reconstructing Paleoenvironments since the Last Glacial Maximum: II

scheduled on Monday, 2/27/2012 at 14:40 PM.

Author(s):

Jiaying Wu* - The University of Georgia

David F. Porinchu - The University of Georgia

Sally P. Horn - The University of Tennessee

Kurt A. Haberyan - Northwest Missouri State University

Abstract:

Costa Rica possesses a large diversity of lakes, natural and artificial, some of which contain undisturbed sedimentary archives that may be used to reconstruct various aspects of Holocene environmental change. Previous multi-proxy paleolimnological research, based on pollen, diatoms, charcoal and stable isotope analyses has documented the nature, timing and spatial pattern of pre-historic land-use in southern Costa Rica and provided valuable evidence of the role that forest clearance, agriculture and fire played in modifying the landscape. However, the degree to which thermal conditions contributed to observed landscape alteration is poorly known. Chironmids have been used to reconstruct late Quaternary thermal conditions in a variety of environments including the alpine and arctic regions of North America; however, little to no sub-fossil midge analysis has been undertaken in Costa Rica. Analysis of midge remains from a suite of 71 Costa Rican lakes has provided valuable information on the modern distribution of midges in this region. The relationship between midge distribution and measured environmental and limnological variables, which was established using canonical correspondence analysis (CCA), reveal that water temperature and elevation can account for statistically significant amounts of variance in midge distribution. The development of a midge-based inference model for water temperature is currently underway. This inference model will be applied to sub-fossil midges assemblages recovered from Zoncho Lake, a small (0.75 ha), shallow (~ 2.6 m), circum-neutral lake located in the tropical premontane rain forest life zone, to develop a high resolution record of regional climate change.

Keywords:

Chironomids, global change, paleolimnology, paleoclimatology, Meso-america

[New Query](#)