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Tina R. Foster and Robert K. Goldhammer, University of Texas at Austin, Austin, TX

**High Resolution Sequence Stratigraphy of the Lower Cretaceous Cupido Carbonate Platform, Sierra Madre Oriental (Northeast Mexico)**

The Cupido Formation (Sierra Madre Oriental, northeast Mexico) is a Barremian to Aptian (127-112 Ma) aged carbonate platform that followed the coast of the Early Cretaceous Gulf of Mexico (G.O.M.). Outcrops in northeast Mexico are equivalent to the subsurface Sligo Formation of the onshore U.S. G.O.M. Regionally the Mesozoic stratigraphy of the G.O.M. can be subdivided into five 2nd-order supersequences. The lower two-thirds of the Cupido Formation depict the 2nd-order HST of the Barremian-Aptian supersequence (the "112 my" supersequence), whereas the upper third comprises the 2nd-order TST of the regional Albian supersequence (the "98 my" supersequence).

Two separate and very distinct depositional models have been developed for each of the 2nd-order systems tracts using data obtained by measuring stratigraphic sections. The 2nd-order HST depositional model is that of a rimmed shelf with a steeply-dipping fore-reef of appreciable relief. The 2nd-order TST consists of a distally-steepened carbonate ramp with marginal buildups and shoals that maintained some significant depositional topography. These models reflect the changes in facies and environments between 2nd-order systems tracts. Nine subfacies, and their corresponding subenvironments, of the Cupido have been identified in order to construct the depositional models. The vertical succession of subfacies defines high-frequency cycles, the building blocks of lower-order sequences.

The vertical and lateral cycle stacking patterns within the separate systems tracts are being compared to better understand HST versus TST models of cyclic architecture. Such a high-resolution cyclic framework could serve as an outcrop analog for the subsurface Sligo carbonates of the G.O.M.