MEETING

HGS DINNER MEETING—
DECEMBER 14, 1992
Social Period, 5:30 p.m.
Dinner and Meeting, 6:30 p.m.
Post Oak Doubletree Inn

GREGORY R. SIMMONS—Biographical Sketch

Gregory R. Simmons received B.S. and M.S. degrees in geology from Oklahoma State University in 1978 and 1982. For his thesis, he investigated the depositional environment and diagenetic history of a Late Pennsylvanian basinal sandstone in the northern Midland Basin.

He worked as development and exploration geologist in the Anadarko Basin for several companies, most notably Coquina Oil Company, before moving to College Station in 1985 to pursue a Ph.D. in Geological Oceanography at Texas A&M University. While at Texas A&M, Greg worked for the Ocean Drilling Program and the Gulf of Mexico Structural and Stratigraphic Synthesis Project. The title of his dissertation is "Regional Distribution of Salt in the northwestern Gulf of Mexico: styles of emplacement and implications for early tectonic history."

Greg began working as a seismic stratigrapher for Exxon Production Research Company in 1992 and is currently assigned to a deep-water reservoir study in the Gulf of Mexico.

THE REGIONAL DISTRIBUTION OF SALT AND EVOLUTION OF INTRASLOPE BASINS ACROSS THE TEXAS-LOUISIANA SLOPE

Sedimentation across the Texas-Louisiana slope is intimately associated with a variety of salt structural styles. The lower slope is characterized by isolated supralobal basins subsiding into a nearly continuous substrate of allochthonous salt. Circular to elliptical depressions represent unfilled space evacuated by underlying salt.

The upper to middle slope is characterized by allochthonous salt fronts forming distinct, interlobal basin margins. Bathymetric relief of interlobal basins is due to uplift associated with the lateral intrusion of salt. Although a salt substrate is generally unresolved, the interlobal-basin fills often include depositional geometries attributed to halokinesis (i.e. turtle-structure anticlines) overlying apparent salt-evacuation surfaces.

Studies of slope to shelf margin development within the overall progradation of the Cenozoic clastic wedge commonly show development initially as isolated depocenters across the lower slope, presumably above an allochthonous salt substrate. Initial subsidence is apparently accomplished by differential loading from sediments that are buoyant with respect to the underlying salt. Density-depth relationships for typical marine sediments suggest that sand could represent a major component of the supralobal-basin fills. Rapid subsidence and complete evacuation of salt is accomplished locally when sediments reach a critical thickness with average densities exceeding that of the underlying salt. Supralobal basin development involves onlapping fill of the depressions created by salt evacuation. Supralobal basin flanks are further evacuated with continued burial, the surrounding salt becomes increasingly isolated, and the supralobal-basin geometries are inverted into turtle-structure anticlines. With further burial the isolated salt domes and massifs develop extensive allochthonous overhangs, spreading laterally over interlobal basins across the upper to middle slope. Eventually shallow canopies of coalesced salt structures may cover fairly extensive areas of the slope.