

Monday, January 24, 2011

Westchase Hilton • 9999 Westheimer
Social Hour 5:30–6:30 p.m.
Dinner 6:30–7:30 p.m.

Cost: \$28 Preregistered members; \$35 non-members & walk-ups

To guarantee a seat, you must pre-register on the HGS website and pre-pay with a credit card.

Pre-registration without payment will not be accepted.

You may still walk up and pay at the door, if extra seats are available.

HGS Special Dinner Meeting

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HGS Special Dinner Meeting

Structural Provinces and Processes of the North-central Gulf of Mexico Deepwater

Structural provinces in the north-central Gulf of Mexico can be defined using different criteria. First, they can be delineated based on the Miocene gravitational failure of the passive margin in response to proximal clastic loading. Extension occurred near the advancing shelf-slope break, shortening was concentrated in the Atwater Foldbelt, and the area in between was dominated by translation with only minor extension or contraction. The eastern margin of this cell of basinward translation marks the lateral edge of the Miocene depositional system and occurs along several strike-slip structures in east-central Mississippi Canyon. The western margin, trending NNW in central Green Canyon, was controlled by the distribution of allochthonous salt, with gravitational failure to the west accommodated primarily above extensive canopies in more proximal positions.

Alternatively, structural provinces can be identified based on the styles of salt withdrawal, diapirism, and canopy formation. A distal domain is characterized by vertical feeders, broadly symmetrical evacuation structures, and salt that spread radially to form salt-stock canopies. In contrast, a much larger, more proximal domain is dominated by inclined, welded feeders, asymmetrical expulsion rollovers, and salt that extruded primarily basinward to form salt-tongue canopies. In some cases, salt tongues were emplaced above deeper, still inflated Louann Salt, so that subsequent evacuation of the underlying salt resulted in anomalously deep canopies. Secondary minibasins later formed, producing deep, young minibasins floored by allochthonous welds only slightly above the Louann weld. The boundary between the salt-stock and salt-tongue provinces is unlikely to be related to basement architecture or Louann Salt thickness.

Instead, it is interpreted to represent a toe-of-slope that varies in age from west to east. ■

Biographical Sketch

MARK ROWAN received a B.S. in biology from CalTech in 1976, an M.S. in geology from the University of California at Berkeley in 1982, and a Ph.D. in structural geology from the University of Colorado at Boulder in 1991. He spent three years at Sohio Petroleum Co. in Denver (1982 to 1985), four years at Geo-Logic Systems in Boulder (1985-1989), and three years at Alastair Beach Associates in Glasgow, Scotland (1989-1992). He then returned to the University of Colorado, and in 1996 he was appointed a Research Assistant Professor and headed up a large industrial research consortium investigating Gulf of Mexico salt tectonics. Mark left this position in 1998 and founded his own company, where he consults and teaches for the petroleum industry worldwide and conducts research sponsored by industry.



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Although Mark's background includes many types of tectonic environments, his recent research and consulting interests are focused on the styles and processes of salt tectonics, salt-sediment interaction, the geometry and kinematics of passive margins, and the applications to petroleum exploration. He is the author or coauthor of over 65 papers and 150 abstracts, is the regular instructor for AAPG's Salt Tectonics school, was an AAPG Distinguished Lecturer, and is the AAPG International Distinguished Instructor for 2009-2011.