

**AAPG Annual Convention
Salt Lake City, Utah
May 11-14, 2003**

Dennis A. Sylvia¹, William E. Galloway², Ricardo Combellas¹ (1) Department of Geological Sciences and Institute for Geophysics, The University of Texas at Austin, Austin, TX (2) The University of Texas at Austin, Austin, TX

Evolution of the Northern Gulf of Mexico Through the Cenozoic—a 3-D Visualization Tour

The Gulf Basin Depositional Synthesis project's (Galloway, et al., 2000) interpretive GIS database has been combined with the published MMS paleodata (planktonic marine markers) and reconstructed paleoshorelines to produce a suite of 2-D and 3-D images that relate major depocenter evolution to the paleostructure and paleobathymetry of the northern Gulf of Mexico (GOM). Paleobathymetric surfaces were constructed for thirteen time steps during the Cenozoic. The reconstructions illustrate how 3-D visualization can be used to assess the effects that eustatic and continental climate change, and tectonics have on the sedimentation history of the GOM basin. Bathymetric surfaces were modeled for each of the major Oligocene and younger depositional episodes. Doppler maps that illustrate depositional pattern change also were constructed. Three-dimensional visualization takes advantage of the natural human ability to see patterns in pictures and help uncover hidden trends in the data. The constructs can be navigated in 3-D space and time to better understand the depositional history and focus the petroleum explorationist's attention on those geographic areas and stratigraphic intervals with the greatest reservoir potential.