

Thursday, February 7, 2002

Westchase Hilton • 9999 Westheimer
Social 5:30 p.m., Dinner 6:30 p.m.

Cost: \$25 Preregistered members; \$30 Nonmembers & Walk-ups

Make your reservations now by calling 713-463-8920 (5-0-6) or by e-mail to Joan@hgs.org (include your name, meeting you are attending, phone number, and membership ID#).

Emerging Technology Dinner Meeting

by **Scott W. Tinker**

*Director, Bureau of Economic Geology
The University of Texas at Austin
State Geologist of Texas*

Oil and Water: Rocks and Models Improve Resource Understanding

Sedimentary processes result in the deposition of 3-D geologic bodies that are buried and lithified, and then undergo diagenesis and structural deformation over time. These post-depositional changes cause overprints that modify, and often complicate, the pore-space distribution of the original deposit. Although geologists have had tremendous success describing 3-D and 4-D problems using 2-D renderings (maps, cross sections, tables, and graphs), the number of computer hardware and software tools has exploded over the past decade so that we can now address the 4-D nature of the problem. In some cases, original interpretations have held up nicely; in other cases, we are seeing things that we never imagined possible.

Nowhere does the application of 3-D and 4-D modeling tools have more impact than in the description and modeling of oil and water subsurface reservoirs. The modeling and visualization of complex subsurface geology, combined with the ability to model the movement of fluids and gases within and through the volume, have revolutionized our understanding of subsurface behavior. Models now help oil companies extract incremental reserves previously thought to be unrecoverable, and help hydrologists model the volume and quality of water in aquifers to forecast future resource allocations.

I will emphasize the importance of rocks to construct accurate stratigraphic and structural frameworks, and the impact of accurate frameworks on 3-D and 4-D models, using animated examples of 3-D hydrocarbon and aquifer models, mainly from Texas. We will even catch a ride on the back of a camcorder with

a headlamp and head into the subsurface of West Texas to visit a classic Texas giant up close and personal!

Biographical Sketch

SCOTT W. TINKER is Director of the Bureau of Economic Geology, The University of Texas at Austin, a major international energy and environmental research organization. He is the State Geologist of Texas and a Professor in UT's Department of Geological Sciences. He is also a member of the Steering Committee of the new John A. and Katherine G. Jackson School of Geosciences.



Before joining the Bureau in 2000, he was an Advanced Senior Geologist at Marathon Oil's Petroleum Technology Center in Littleton, Colorado, where he designed and managed studies of large oil and gas fields. He earned a PhD in geological sciences from the University of Colorado. He is an expert in energy issues and reservoir characterization of carbonate systems. A recipient of best paper awards in two major journals and former AAPG Distinguished Lecturer, he was recently selected for the 2002 inaugural series of the joint SPE/SEG/AAPG Distinguished Lecturer program. He is a member of many professional and honor societies, and is actively involved in several technical and steering committees. He is also a member of the Board of Visitors at Trinity University, the American Geological Institute Foundation, and following a recent appointment by the Lt. Governor of Texas, the Oil Field Cleanup Advisory Committee. □