Monday, February 25, 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 **(5-0-4)** or by e-mail to Joan@hgs.org (include your name, meeting you are attending, phone number, and membership ID#).

North American Explorationists Dinner Meeting

by K. M. Stevens[1], J.B. Wagner[2], T. D. Sheffield[1], L. L. Brooks[1], P. Zippi[3], M. A. Dablain[1], B. Brown[1], and R. Offenberger[1].

(1) Pioneer Natural Resources, Irving, TX
(2) Nexen Petroleum, Dallas, TX
(3) Biostratigraphy.com, Richardson, TX

Integrated Analysis of the Upper Jurassic Bossier Deltaic Complex, East Texas

The sandstones encased within the Bossier Shale member of the Cotton Valley Sandstone in East Texas are subdivided into three genetically related stratigraphic cycles. The lower deltaic cycle is a seaward-stepping unit that becomes reworked as a result of delta switching with the upper cycles characterized primarily as aggradational to progradational units. Facies range from delta-fed gravity-flow to delta-front to distributary-channel deposits.

Previous interpretations have ranged from submarine-fan to braided river, with individual cycles interpreted to be bounded by regionally extensive marine flooding surfaces. However detailed sedimentologic, petrologic, and biostratigraphic analyses of well logs and cores indicate that the stacking pattern of the Bossier deltaic complex is controlled by autocyclic lobe-switching as a result of varying sediment supply (overall increase) associated with the large Cotton Valley fluvial system. In particular, detailed biostratigraphic analysis (i.e. palynology, micropaleontology, etc.) suggests that bounding shale intervals and "flooding surfaces" exhibit a high terrigenous/marginal marine signature. True marine flooding events are associated only with the source-rock shales in the underlying Lower Bossier shale interval. Additionally, the abundance of distributary channels associated with all cycles suggests the entire Bossier sandstone section is a river-dominated system subordinately influenced by marine processes.

Rock physics and seismic modeling of the Bossier sands have demonstrated a seismic response strongly dominated by large acoustic impedance contrasts associated with porous sandstones, low porosity siltstones and over-pressured shales. Depositional and sedimentological characteristics of the Bossier sands strongly resemble characteristics of a modern-day fluvially dominated deltaic system (i.e. Mississippi River) undergoing processes of delta-switching and abandonment.

Biographical Sketch:

JOHN B. WAGNER received both his BS and MS degrees in geology from Louisiana State University in Baton Rouge and his PhD in geology at The University of Texas at Dallas. From 1989 to 1998, John worked for Mobil Oil beginning as an exploration geologist for Mobil Exploration and Producing U. S. in New Orleans, Louisiana. He then transferred in 1991 to work as an international consultant for depositional systems analysis at Mobil Exploration & Producing Services in Dallas, Texas and in 1995 to Senior Staff Geologist for Mobil's Exploration & Producing Research Technical Center in Dallas, Texas. From February of 1998 to December of 2000, John worked for Pioneer Natural Resources as Sedimentologist/Stratigrapher for Worldwide Exploitation and Development. He joined Nexen Petroleum in December of 2000 (previously known as Canadian Occidental) as Sedimentologist for Deep-water Exploration and Development. Prior to his 10 years at Mobil, his work ranged from field geologist in Alaska, to manager of a seismic crew, to coastal geologist for the Louisiana Geological Survey Coastal Geology Program. He was a scientist on board the 1985 USGS/IOS GLORIA survey of the deep-water Mississippi Fan, Gulf of Mexico. He is a member of both the AAPG and SEPM and has served on Program Committees for the Gulf Coast Section Society of Economic Paleontologists and Mineralogists (GCSSEPM) Foundation Annual Research Conferences. John's teaching interest began in 1995 when he began co-leading the Mobil sandstone field seminar and lecturing abroad to international offices. His work travels have taken him from the rivers and streams of Sakhalin Island Russia, to the coast of Vietnam, to the jungles and mountains of Bolivia and Argentina. His research interests are in sandstone sedimentology, depositional systems analysis, and understanding the various allocyclic and autocyclic controls that influence deposition. □