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## **A Tale of Two Basins: Sources and Timing of Petroleum and Natural Gas Generation in the Mature Gulf Coast/Gulf of Mexico and West Texas (Permian) Basins**

**Thomas E. Ewing** | *AAPG Distinguished Lecturer, Yegua Energy Associates*

March 13, 2018

Doors open 11:30am | Announcements begin at 11:45 am

Marriott Hotel, Kensington Ballroom | 110 9 Avenue SW, Calgary, AB T2G 5A6

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*Please note: The cut-off for ticket sales is 1:00pm, five business days before the event. March 6, 2018.*

### **ABSTRACT**

Comparison of the hydrocarbon systems and geometries of the complex intracratonic West Texas (Permian) Basin and the complex postrift subsidence basins of the Gulf Coast / Gulf of Mexico yield useful insights for basin evolution and play development. The West Texas basin contains source rocks in the Ordovician and Devonian, but much generation comes from the Late Mississippian, Pennsylvanian and Permian basinal sediments. These were deposited in a poorly ventilated remnant basin during compression and strike-slip of the Ancestral Rocky Mountains orogeny, and subsidence of the intracratonic Permian Basin. Maturation resulted from Permian intracratonic subsidence, with hydrocarbons sealed from later leakage by late Permian salt and a fortunate tectonic setting. By contrast, the major Jurassic source rocks of the Gulf basins are at the base of the postrift subsidence, and are matured by further subsidence. Later Cretaceous source rocks (Eagle Ford) are mature in the main Gulf basin, but again lie near the bottom of the thick sedimentary package in the area. The younger part of the succession yields mostly gas formed during outbuilding of the shelf margin by Cenozoic deltaic progradation. No cap is present on the basin (except for subsalt plays), and seepage is widespread.

### **BIOGRAPHY**



Tom Ewing, noted geoscientist and author, is owner and operator of Frontera Exploration Consultants in San Antonio. In his 35-year career, Ewing's primary research interest has been integration of structural and stratigraphic history in the evolution of major petroleum-producing basins. He also has a long-standing interest in the geology of San Antonio, and Central and South Texas – integrating surface and subsurface data, and applying it to historical development of the area. The Bureau of Economic Geology recently released Ewing's book, "Texas Through Time – a full-color, lavishly illustrated look at the geology of Texas and its relation to human history and human needs," and "Landscapes, Water and Man: Geology and History in the San Antonio Area of Texas."

During his tenure with the Bureau of Economic Geology, 1980-84, he worked on the Gulf Coast expansion faults and over-pressured reservoirs, and co-authored "Atlas of Texas Oil Reservoirs" and compiled the Tectonic Map of Texas. Ewing previously worked with an exploration team for Venus Oil in the expanded Yegua Trend, achieving significant successes at Vidor Ames, Nome and Constitution fields. The team also worked in West Texas, Kansas and Oklahoma. He has worked with clients in New Mexico, as well as regional ground-water studies in Texas.

Ewing is currently the AAPG Gulf Coast Section president(2016-2017). He is a past president of Sections for AAPG and previously served as president for both the Energy Minerals Division and the Division of Professional Affairs.

He is a three-time recipient of the AAPG A.I. Levorsen Award and recipient of the Distinguished Service Award. He also received Honorary membership from GCAGS and the South Texas Geological Society.