

# HGS Bulletin

Volume 57, Number 2

Houston Geological Society

October 2014

## FROM THE ARCH TO THE UPLIFT: DEPOSITIONAL CHANGES IN THE CENOMANIAN-TURONIAN INTERVAL (EAGLE FORD AND WOODBINE GROUPS) ACROSS CENTRAL AND EAST TEXAS

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## GRAND CANYON FIELD TRIP: ANOTHER SUCCESS

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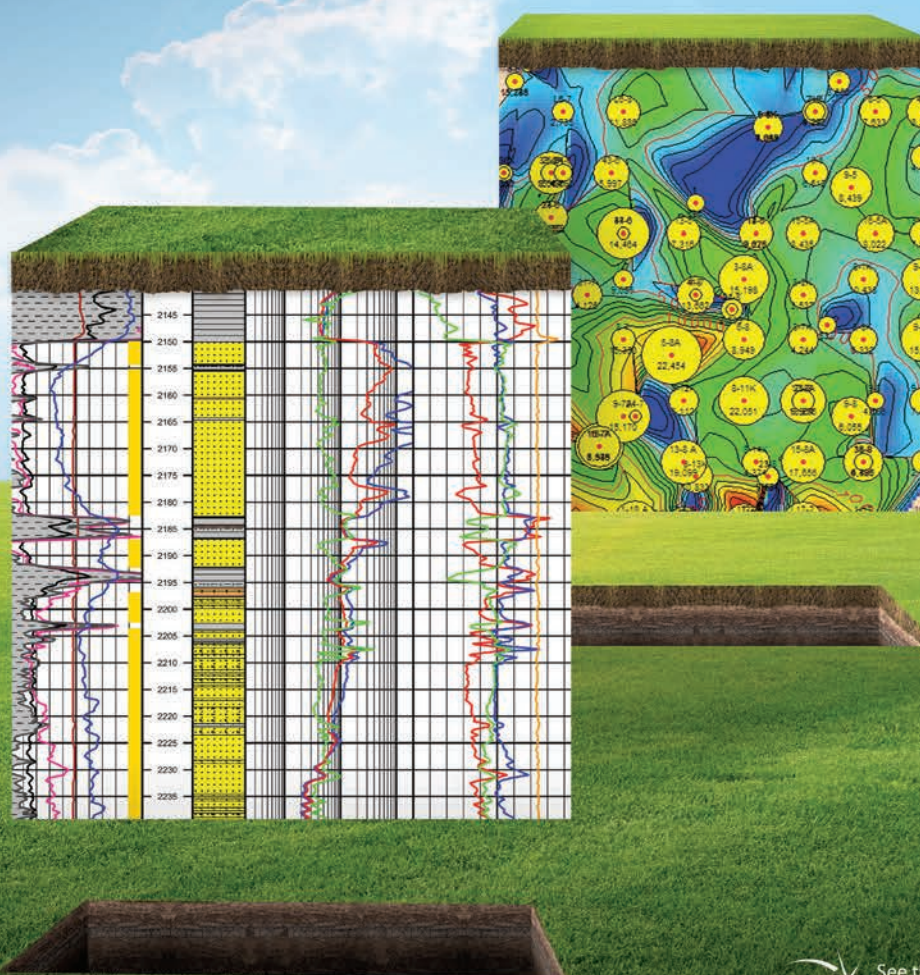
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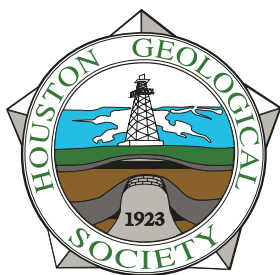
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# The Bulletin

## Houston Geological Society

Volume 57, Number 2

October 2014

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The Houston Geological Society Bulletin (ISSN-018-6686) is published monthly except for July and August by the Houston Geological Society, 14811 St. Mary's Lane, Suite 250, Houston, Texas 77079-2916. Phone: 713-463-9476; fax: 281-679-5504

**Editorial correspondence** and material submitted for publication should be addressed to the Editor, Houston Geological Society Bulletin, 14811 St. Mary's Lane, Suite 250, Houston, Texas 77079-2916 or to [dwmiller.hgs@gmail.com](mailto:dwmiller.hgs@gmail.com).

**Subscriptions:** Subscription to this publication is included in the membership dues (\$28.00 annually). Subscription price for nonmembers within the contiguous U.S. is \$50.00 per year. For those outside the contiguous U.S. the subscription price is \$75.00 per year. Single-copy price is \$8.00. Periodicals postage paid in Houston, Texas.

**POSTMASTER:** Send address changes to Houston Geological Society Bulletin, 14811 St. Mary's Lane, Suite 250, Houston, Texas 77079-2916

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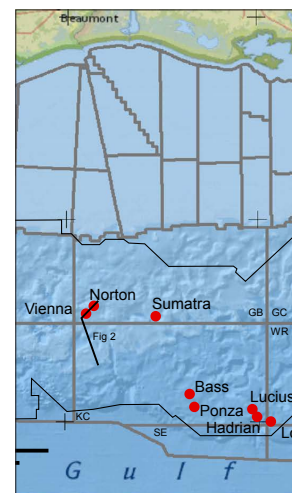
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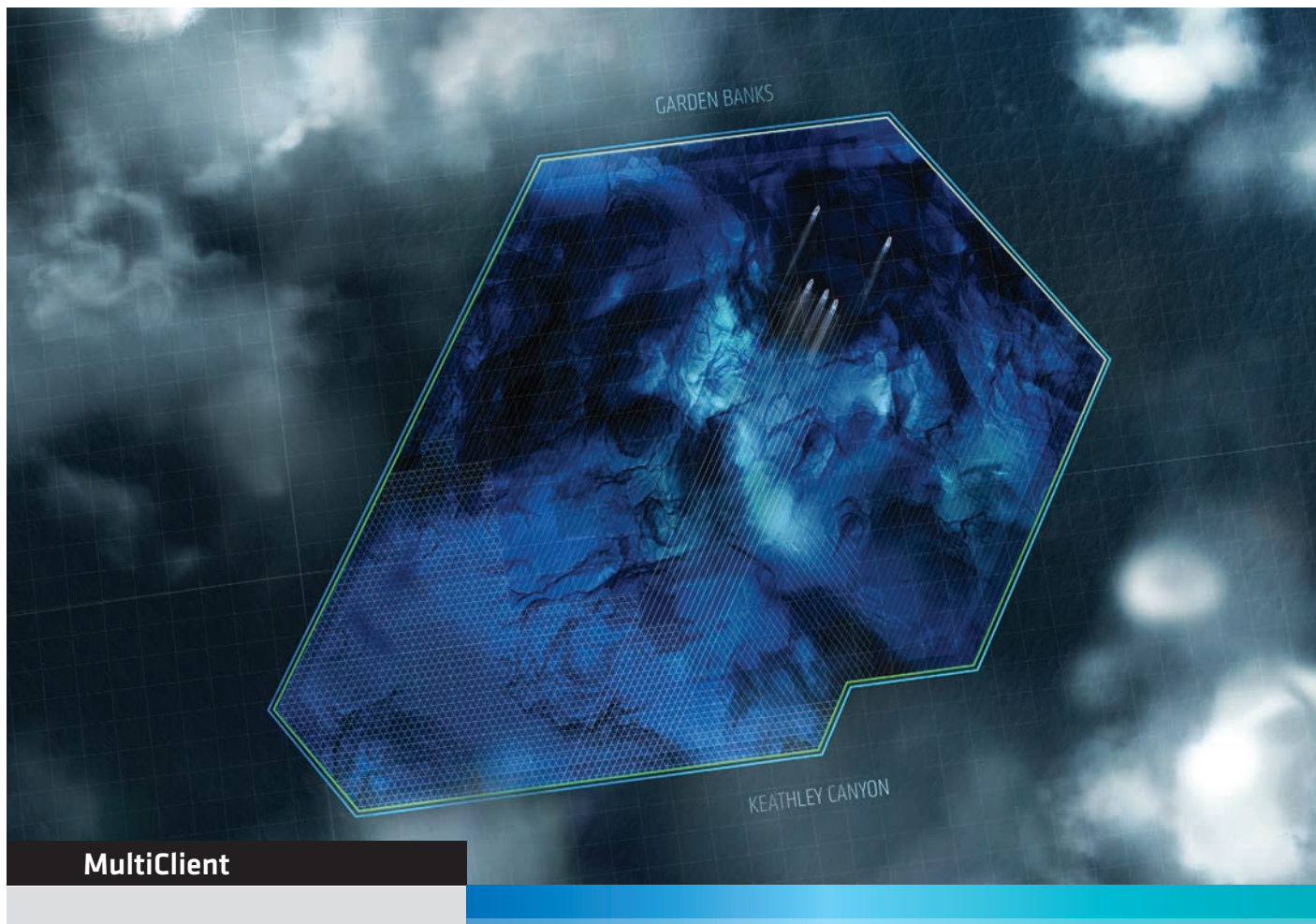


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**About the Cover:** The Grand Canyon near Bass Creek, day 5; photo courtesy Shiela Hall.



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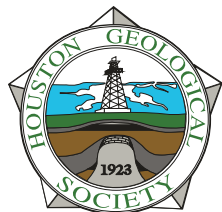
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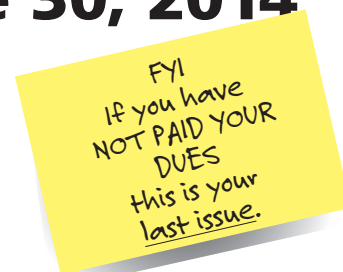
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## Presidential Ponderings

If it's August in Houston it's October HGS *Bulletin* time!

I attended the AAPG Leadership Days in Snowbird, Utah from August 8 to 10. Getting that close to awesome geology was quite an experience. Walking at 8,400' elevation was not such an awesome experience though. Meeting old friends from around the world and making new ones reminded me of two key points:

- Geologists have a passion for science.
- Participation in a professional society should be part of everyone's development plan.

A geologist's passion for science is life-long. It is rocks and minerals, electric logs and seismic lines, geochemistry and basin analysis, lease sales and well sites; just to mention a few items. The passion is applied to "solving the puzzle" by creating a prospect and the satisfaction of seeing it drilled and completed. That passion can be seen in the euphoria of success and the woes spawned by a dry hole.

I met several young professionals from Houston at this meeting. These young professionals have that passion for science and want to nurture it as part of their professional development. Experienced professionals have a passion for science that can provide the nurturing, encouragement, and mentoring that will develop our future professional society leaders.

My desire is to bring those two passions together. Houston is well-represented in this group. One is a co-chair of the YP (Young Professionals) Committee of the AAPG. Another is the Gulf Coast liaison for student chapters. Two others represented Houston at the Young Professionals summit that took place the days preceding the conference. Those who will lead us in the future are the volunteers of today. I hope to have our own "summit" with these people in the near future and see how they can bring their passion to HGS in the best way.

Not every young professional can find a spot in the national society. However, local and sectional societies offer opportunities

to learn skills, find mentors, and take on leadership roles. I was amazed to see the number of young professionals in leadership positions in the Rocky Mountain Association of Geologists and the San Joaquin Geological societies. In fact, I believe that five of the six officers (including the President) for the San Joaquin Society are young professionals! The AAPG YP group is a little different than our NeoGeos because its members can have up to ten years of industry experience before moving out of the "young" category. I want to see a few passionate young professionals and NeoGeos in Houston become part of the future leadership for the HGS. The active participation and commitment of our young professionals is a must if we are to meet our vision and succeed in our mission.

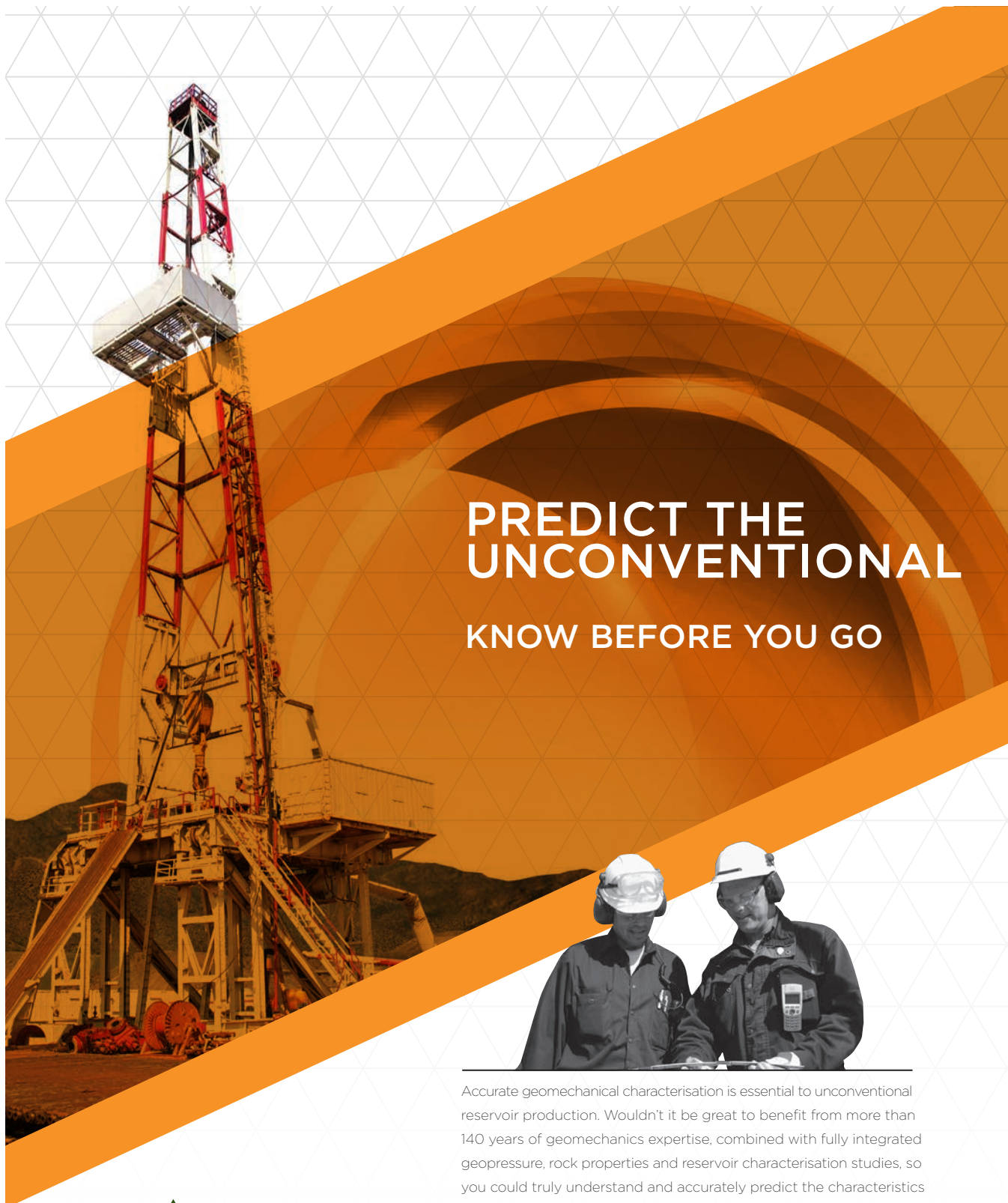
October brings us many events that offer educational opportunities, not only for the young professionals, but for the public as well. I encourage you to look at the events calendar and participate in these events. The 8th annual GeoScience Day will be held on October 16th (<https://www.hgs.org/civcrm/event/info?reset=1&id=1471>).

This year's theme is The Life of an Oilfield, a valuable learning experience for those new to our industry.

The experienced professionals will have an opportunity to get out twice this month and promote geology to the public. If it's October, it's time for Earth Science Week! This year's Museum Day is set for October 11 while the popular field trip to Whiskey Bridge will be on October 19. The ESW committee again this year has arranged with AGI to publicize Earth Science Week which has been rebranded as Earth Science Week Houston (<http://www.earthsciweek.org/eswhouston/index.html>). There are a lot of neat things to discover on that page. This year's theme is *Mapping Our World* and it presents a wonderful opportunity to go through the Wiess Energy Hall with your family. There are also webcasts available on the AGI web site that discuss the upcoming events.

*A geologist's passion for  
science is life-long...  
That passion can be seen  
in the euphoria of success  
and the woes spawned by  
a dry hole.*

From The President continued on page 9



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## Always Have Firewood

In my first column I wrote that I planned to share at least one of my more embarrassing professional moments. My hope is that other members will do the same, as I do believe that we are, as a profession, particularly good at laughing at ourselves. Now that the time has come in fact to write about one of my more embarrassing moments, I find I have quite a few to choose from!

Many years ago, with my previous company, we hosted senior management at least once a year for a review of our activity, and look ahead at our plans for the upcoming year. If possible, we liked to add something a bit “special” to these visits. This particular year, the decision was made to organize a field trip to the Wyoming Overthrust Belt, concentrated around the Jackson Hole, Wyoming area. A co-worker and I spent about two weeks in the field preparing the trip and putting together a guidebook, with photos, sketches, maps and commentary to help orient our visitors and provide a record of the trip. All was going well – we had the guidebooks prepared, the logistics arranged and a forecast of good weather for the time we were going to be there.

There were three of us involved in running the trip. We arrived a day early to take an overflight of the area we would see on the ground, to make sure that this was a good option for the entire group as the last activity before everyone left to go back home. This was my first experience in organizing any type of field trip. I soon discovered, as anyone who has done this themselves can probably appreciate, that there is an incredible amount of behind the scenes effort required to run a smooth and successful trip.

Everyone arrived as planned and got checked into the hotels. Dinner was fun and we were all looking forward to starting off early the next morning to see some geology. The first day went great. The weather was perfect and we were able to have very enthusiastic discussions while standing in front of some pretty spectacular outcrops. We got back to town relatively late, and

while the others were refreshing themselves in preparation for the evening’s entertainment, the three of us were scrambling to gas up the cars, make sure that we really did have dinner reservations, ensure that box lunches for the next day were ready to pick up at 5:00 a.m. and go over the program for the second day.

Finally, after dinner, it was time to collapse for a few hours – or so I thought. About 10:30 my phone rang and one of my co-organizers was on the line. One of the senior managers wanted to take us out to celebrate our successful first day and thank us for our efforts. This was probably one of the last things that I wanted or needed to do, but off we went. Of course, the senior manager felt that it was somehow rude to leave the bar before closing time, and we couldn’t very well leave him on his own. Return to the comfort of my hotel room was late, or early, depending on your point of view.

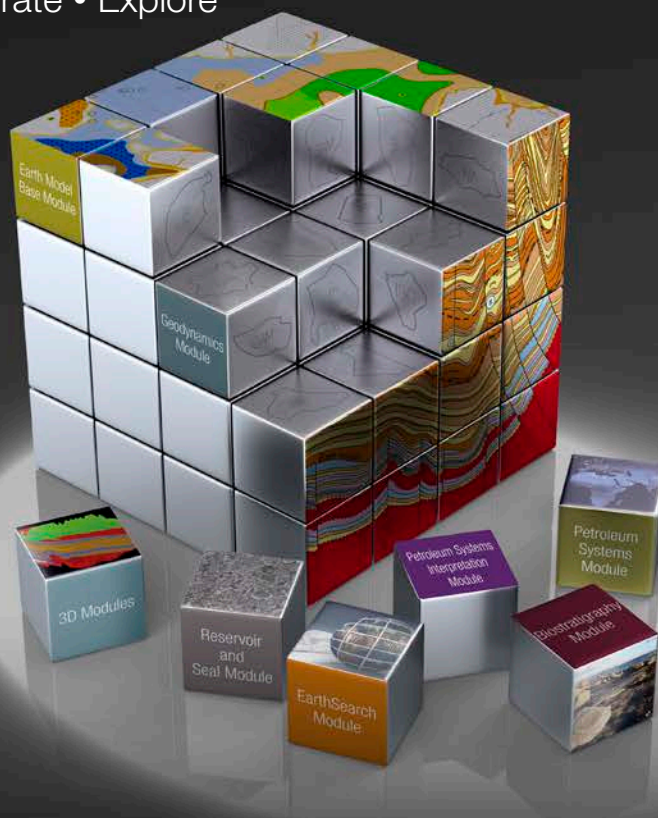
The next morning, after about two hours of sleep, we gathered everyone together and headed off to see our first outcrop of the day, one we felt was particularly important. We arrived at our destination and I began a fairly detailed explanation of why we were here and what we were seeing. Everyone was nodding in agreement. This was a good start to the second day, or so I thought. As we were returning to the cars, my co-organizer took me aside and told me that we had stopped at the wrong outcrop and the one we really planned to discuss was about a mile down the road. I called the participants together and admitted my mistake, asking that they remember everything that I had said so we could make more efficient use of our time once we arrived at the proper outcrop. I wanted to find a hole to crawl into and couldn’t believe that I had made this mistake. I had visions of my career dying before my eyes. Fortunately, the reaction of the group was fantastic. Comments along the lines of “If we were decent geologists, we should have noticed that we were in the wrong place.” “You had us convinced.” and “Can we build an open fire to cook lunch?” suggested that this was not the disaster I had feared.

*...as I do believe that we are,  
as a profession,  
particularly good at  
laughing at ourselves.*

From The Editor continued on page 9

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Now Explore



There has been a lot of activity “behind the scenes” by the many HGS committees but they can always use more help. The Society also has several vacant committee chair positions. If we are to promote our outreach programs we dearly need to fill those. If you have a leaning to education and youth, look into the Academic Liaison, Continuing Education, and Science and Engineering Fair Committees. If you like outdoor activities, the Tennis Committee Chair position is also vacant.

Some things to note this month and next:

- The Board is discussing the General Lunch meeting possibility. Vice President Jordan’s survey had a 66% favorable vote but was equally split on where to hold the meeting, west side or downtown. The majority of those voting in favor of bringing back the lunch meeting (80%) attended two or fewer (out of 5) meetings last year.
- I urge you to register for the Legends Night in January. Space is limited. Walk ups will not be accommodated! This is a great opportunity to see the Undergraduate Foundation scholarship winners, maybe the Graduate Scholarship winners, and learn about the AAPG Imperial Barrel (IBA) Award.

- There has been some discussion regarding the update of the Walking Tour of Downtown Building Stones. If you are interested in assisting with such an endeavor, contact me.
- After 3 ACE conventions in 7 years (2011, 2014, and the upcoming 2017), AAPG won’t return to Houston until 2022.

**Our Vision:**  
To be the essential organization  
serving earth science professionals  
in the Houston community

**Our Mission:**  
To provide earth science enrichment  
through technical education, networking  
opportunities,  
and community service

**Our Slogan:**  
A local geosciences society  
with global reach

Last month I urged experienced HGS members to take their favorite NeoGeo or Young Professional to a technical meeting. This month I am turning it around and asking the NeoGeos and Young Professionals to invite an Experienced Professional that they would like to meet to a technical meeting. Whether it is for networking, mentoring, history, or just plain storytelling, it will be a great way to make some new friends.

Passion is what drives us  
To do the work we do  
It’s why we go to the office  
And why we get to play  
...  
With rocks  
  
With apologies to Burma Shave

## From the Editor

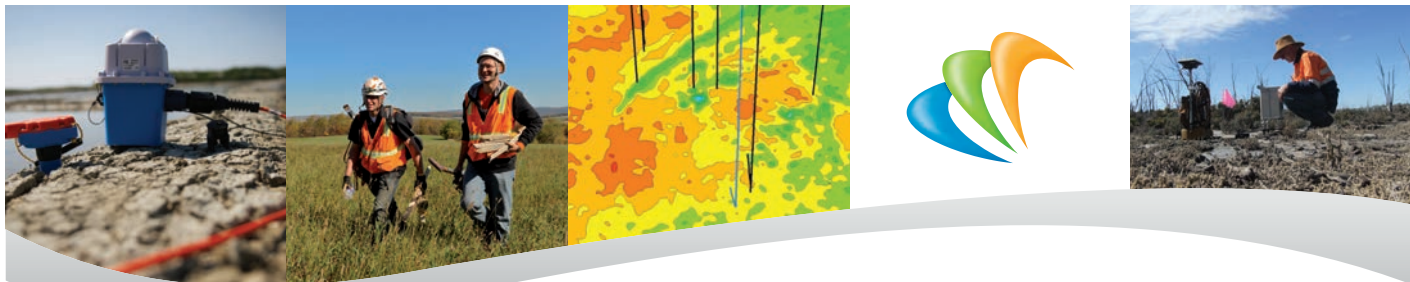
continued from page 7

The rest of the trip went off without a hitch. For the next several years our annual review meetings tended to include at least one or two references to this incident – all in good fun (I think). I learned from this that a good sense of humor, at the right time, can help one to survive potentially embarrassing moments. The

ability to find firewood and build a fire to cook lunch doesn’t hurt either.

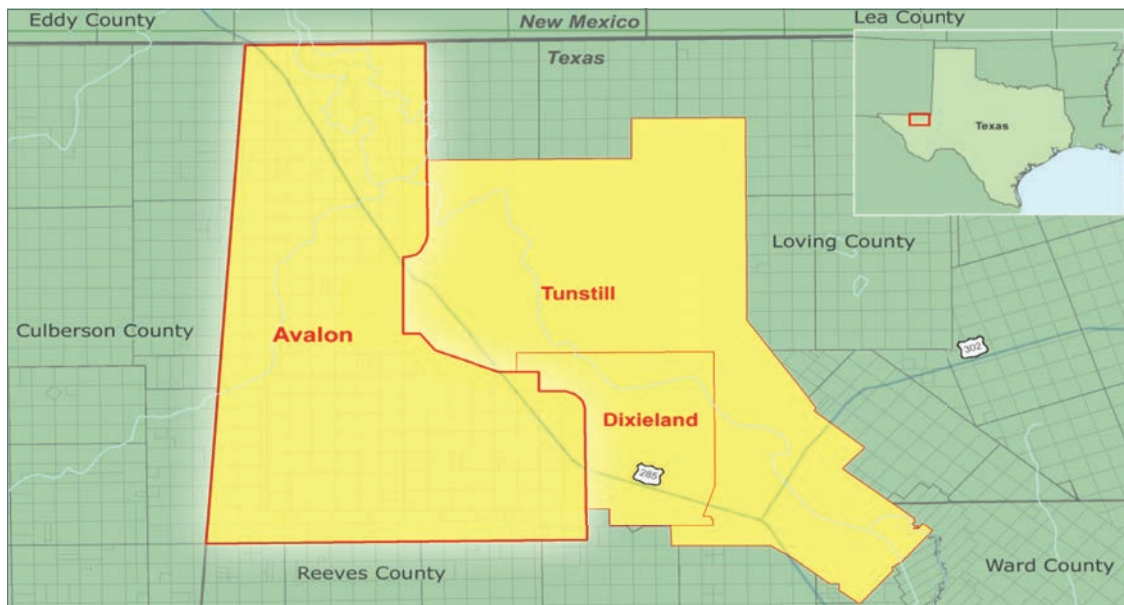
Until next month. Take care. ■

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# Avalon 3D Seismic Survey

A new state-of-the-art multi-client solution in the prolific Delaware Basin



Located in one of North America's most prolific basins, the newly acquired 282 square mile high-end 3D seismic survey offers four hundred fold broadband data. Setting a new standard, Avalon will allow better imaging to address the noise and statics challenges in the area.

Targeting the Bone Springs, Wolfcamp and Cline formations, the complete solution ties the geophysical data to the geology enabling enhanced sweet spot detection and improved hazard avoidance for optimal well placement. The project uses a multi-disciplinary approach comprising advanced imaging, reservoir characterization and microseismic monitoring.

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[cgg.com/multi-client](http://cgg.com/multi-client)



Monday, October 13, 2014

Westchase Hilton • 9999 Westheimer

Social Hour 5:30–6:30 p.m.

Dinner 6:30–7:30 p.m.

Cost: \$45 Preregistered members; \$50 non-members/walk-ups

To guarantee a seat, pre-register on the HGS website & pre-pay by credit card.

Pre-registration without payment will not be accepted.

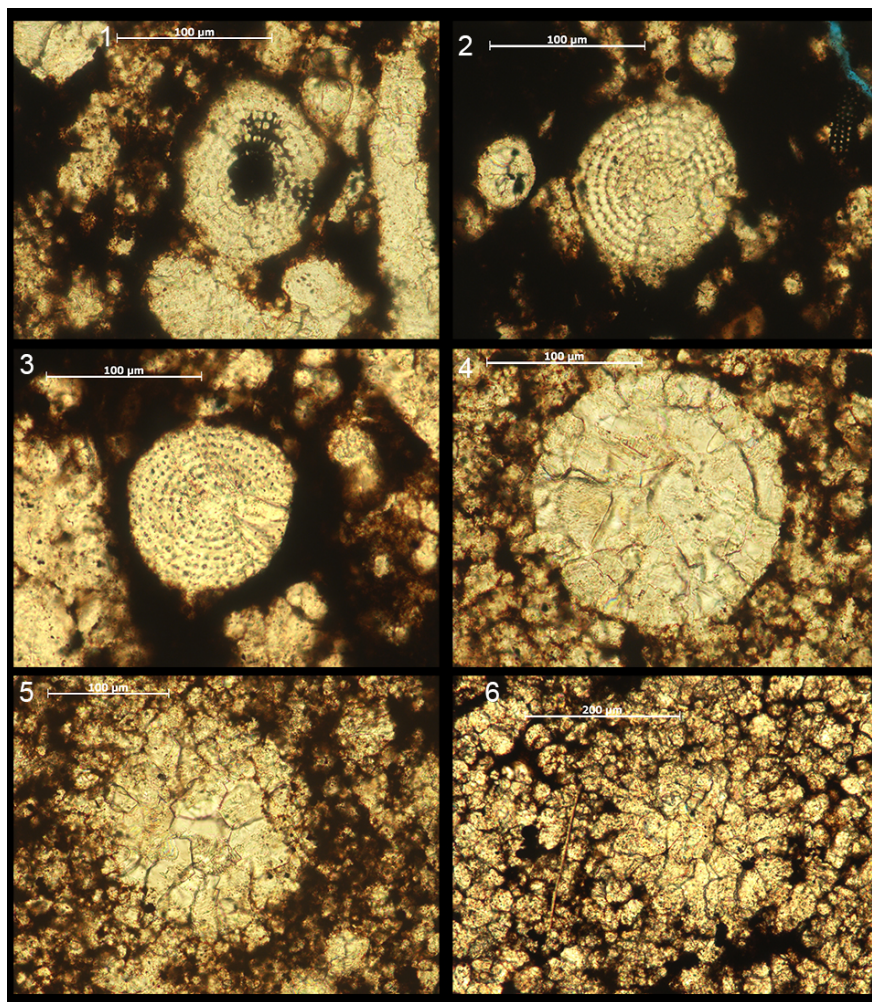
Walk-ups may pay at the door if extra seats are available.

## HGS General Dinner Meeting

J. A. Breyer, R. A. Denne  
and D. A. Bush  
Marathon Oil, Houston

HGS General Dinner Meeting

# From the Arch to the Uplift: Depositional Changes in the Cenomanian-Turonian Interval (Eagle Ford and Woodbine Groups) across Central and East Texas



**Figure 1.** Photomicrographs 1 through 6 show successive stages in the replacement of radiolarians by calcite leading to recrystallized limestone.

The Eagle Ford play in South Texas has increased oil production in the Lone Star state to its highest level in more than 25 years. Two lithologies comprise the bulk of the Eagle Ford Shale Group in the core of the play on the southwestern flank of the San Marcos arch: calcareous mudrock (marl) and recrystallized limestone. The marls consist mainly of clay-sized coccoliths with varying amounts of sand-sized planktonic foraminifera. The

limestones, which originally consisted mainly of radiolarians and calcispheres, range from partially to entirely recrystallized (Figure 1). The marls were deposited under euxinic conditions beneath a stratified water column. The limestones formed during periods of enhanced water column mixing which promoted primary productivity and increased bottom-water oxygenation.

HGS General Dinner continued on page 13

The Houston Geological Society Continuing Education Committee Presents



## Networking With Class: An Interactive Workshop On Business Dining Etiquette

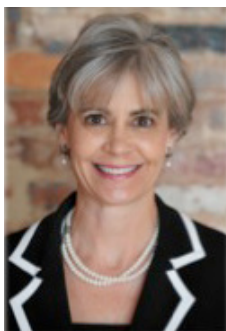
**Speaker: Randi Mays-Knapp, Certified Etiquette and Leadership Coach**

**October 23, 2014**

**6:00pm** Check-in and Social Time

**6:30pm** Instruction Begins

**7:00pm** Dinner is Served



Join the HGS at the renowned Petroleum Club of Houston for a fun and interactive evening of etiquette instruction to learn the do's and don'ts of cocktail etiquette and formal dining. Instruction will be provided by Certified Etiquette and Leadership Coach, **Randi Mays-Knapp**, returning to the HGS with enthusiasm after the successful 2007 etiquette dinner.

Reminisce, network, and learn with us in a meeting space that has been integral to the growth of the energy industry and professional community since 1963. It may be your last chance, as the Petroleum Club will be closing its doors at the ExxonMobil Building on Bell Street and will relocate to the Total Building on Louisiana Street in January, 2015.

Say farewell to an era in the historic banquet room that overlooks Downtown Houston as you enjoy a pre-dinner cocktail "mini-session" with beverages from the cash bar. Then, enjoy a multi-course meal while you are prepared for the many situations you may encounter throughout your career, including:

- Dinner meetings
- Company/Industry socials
- Job interviews over lunch/dinner
- Business lunches
- Networking events

**Topics that will be addressed include:**

- Cocktail etiquette
- Correctly entering & exiting conversations while socializing
- Knowing which utensil to use and how to use it
- Understanding the difference between American & Continental dining
- Tips for hosting your own events

**Price: \$50.00**

This event is open to all HGS and NeoGeos members, spouses, and guests.

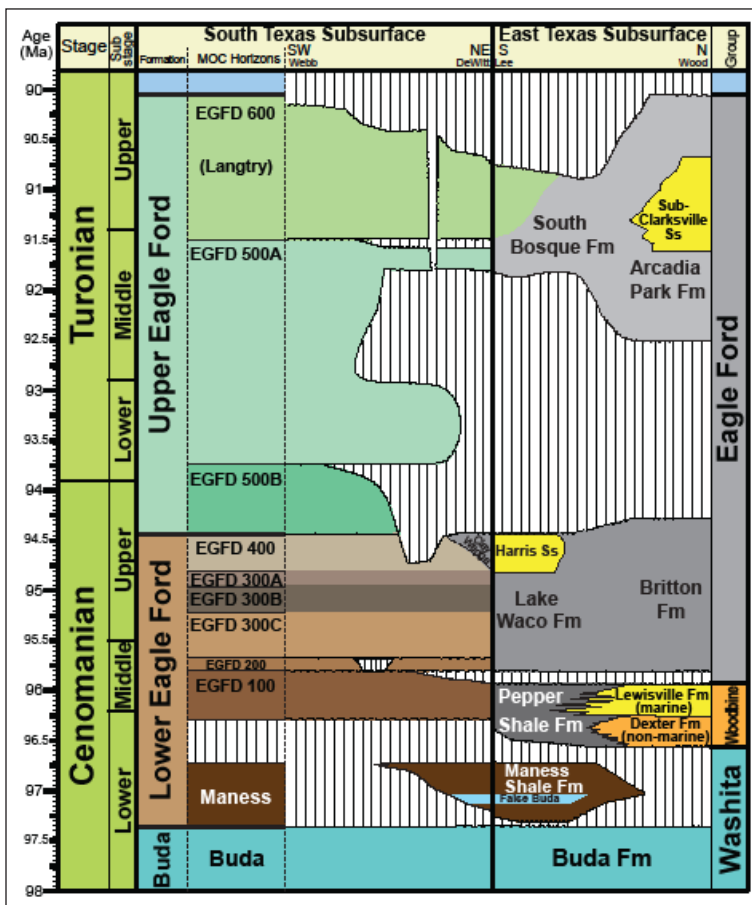
- Business dress or cocktail attire is required. Valet parking available.
- Seating is limited. Advanced registration and payment is required.
- Walk-ups will not be accepted.

**Date:** Thursday, October 23, 2013 • 6 p.m.

**Location:** Houston Petroleum Club – 800 Bell Street, 43rd Floor

**Please make your reservations on-line through the Houston Geological Society website at [www.hgs.org](http://www.hgs.org)**

For more information about this event, contact HGS Office • 713-463-9476 • [office@hgs.org](mailto:office@hgs.org)

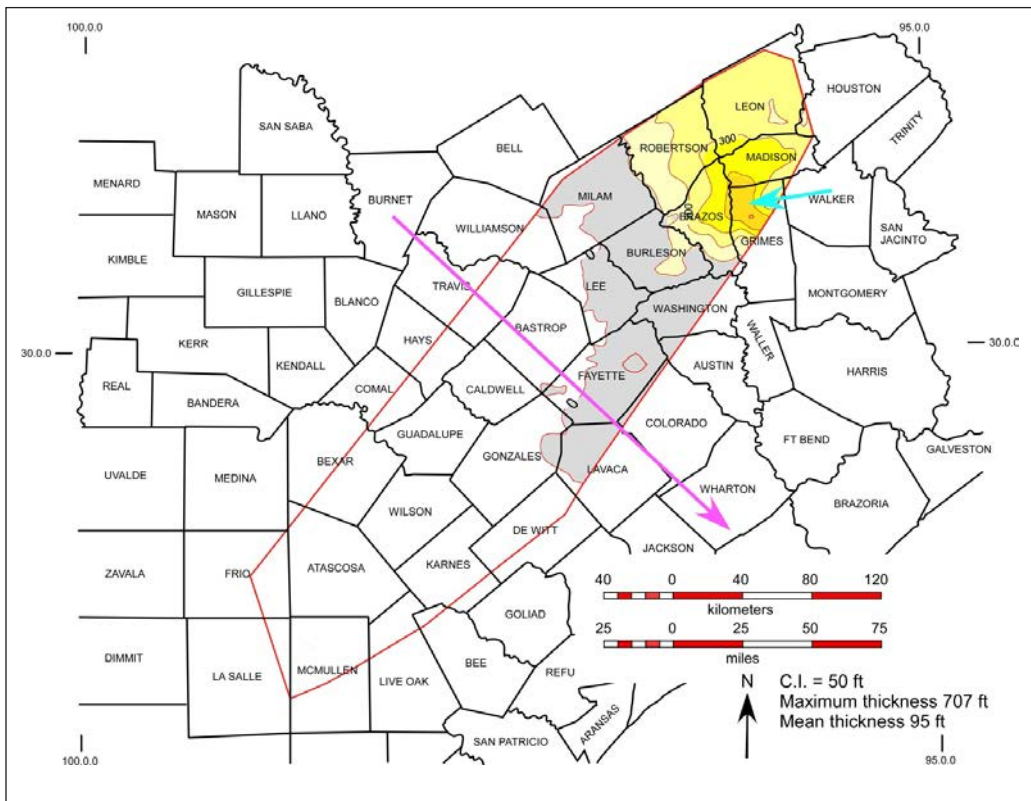


The Cenomanian-Turonian interval was dominated by pelagic sedimentation on the southwestern side of the San Marcos arch. To the northeast, toward the Sabine uplift, this interval was dominated by clastic sedimentation associated with Dexter and Lewisville (Woodbine), Harris and Sub-Clarksville delta systems.

Six stratigraphic intervals are recognized and mapped within the sequence of limestones and marls comprising the Eagle Ford Shale on the southwestern flank of the San Marcos arch. Changes in major, minor and trace element composition mark the boundaries of these units. The Maness Shale lies between the Buda and Eagle Ford in Karnes County and to the northeast, but it is absent to the southwest toward the Maverick basin, where the Eagle Ford Shale rests directly on the Buda. The EGFD500 and EGFD600 comprise the Upper Eagle Ford (Figure 2). The EGFD600 is equivalent to the Langtry Member of the Eagle Ford Group of the Del Rio/Langtry outcrop belt and the EGFD500 to the Scott Ranch Member. Neither of these units is present to the

HGS General Dinner *continued on page 15*

**Figure 2.** Stratigraphic column showing correlation of MOC units recognized on the southwestern flank of the San Marcos arch with age equivalent strata in the subsurface of east Texas.



**Figure 3.** Isopach map of the EGFD400a, which is equivalent to the Harris delta complex. Red arrow shows the position of the San Marcos arch. Blue arrow shows the main source of detrital sediment.

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# **Earth Science Week, 2014**

## **October 11-19**

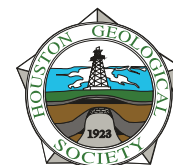
Information will be updated on the HGS Educational Outreach webpage at  
[http://www.hgs.org/education\\_EarthScienceWeek](http://www.hgs.org/education_EarthScienceWeek)



The HGS in partnership with American Geosciences Institute (AGI) is pleased to announce that the theme of Earth Science Week 2014 will be

### **“Earth’s Connected Systems”**

This year’s event will promote awareness of the dynamic interactions of the planet’s natural and human systems.



**The HGS will be hosting these two exciting events:**

**Saturday, October 11 (11:00am – 3:00pm)**

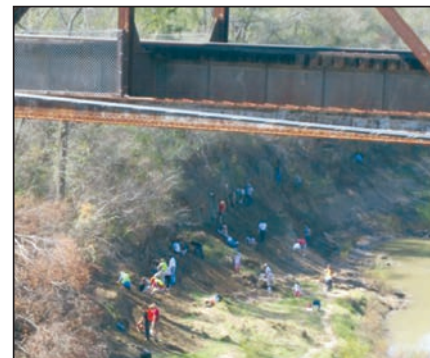
HGS presents: Earth Science Celebration at the Houston Museum of Natural Science, Come Rock with Us!

**Sunday, October 19 (12:00am – 3:00pm)**

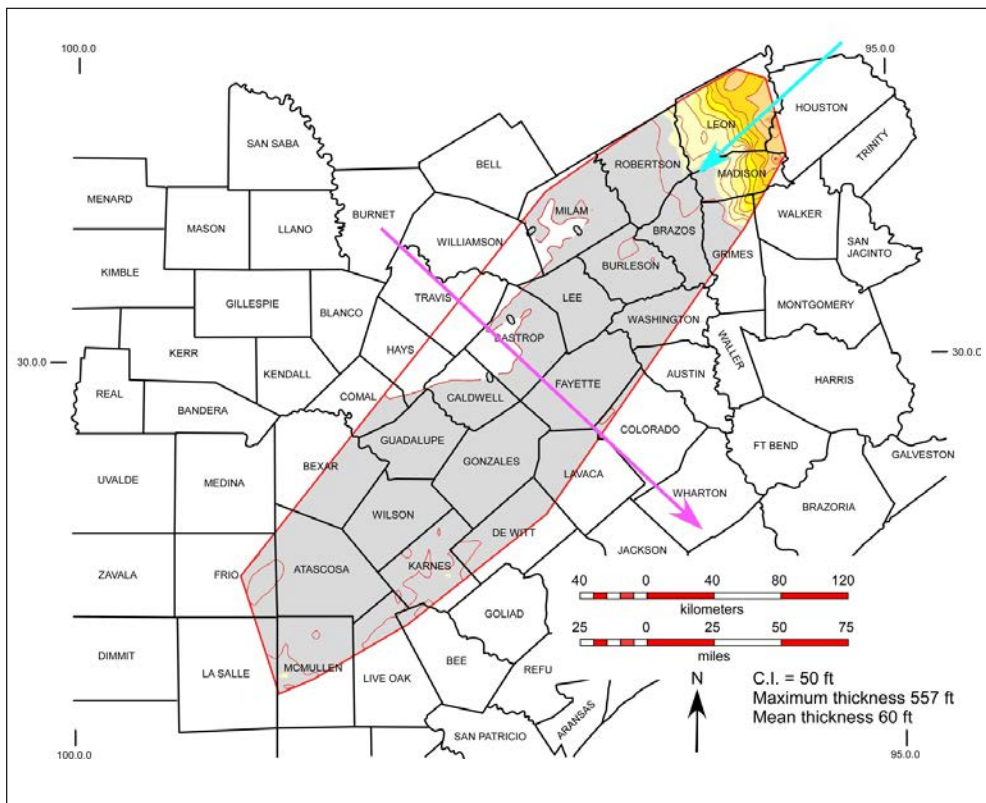
A family friendly, outdoor geology fieldtrip to Whiskey Bridge Over Brazos River, Highway 21, Bryan, Tx

**These are great opportunities to share your love of earth science with family and friends. HGS invites you to attend and to help make this year’s events a success.**

**Teachers** – please visit <http://www.earthsciweek.org/materials/index.html> to order your 2014 Earth Science Week ToolKit.



*Photos from past Earth Science Week events*



**Figure 4.** Isopach map of the EGFD100 interval, which is equivalent to the Woodbine in the East Texas field. Red arrow shows the position of the San Marcos arch. Blue arrow shows the main source of detrital sediment.

northeast of the San Marcos arch, where the Austin rests directly on the Lower Eagle Ford. The uppermost Lower Eagle Ford can be subdivided into two units (EGFD400a and EGFD400b). The EGFD400a is equivalent to the Harris delta complex. It lies above the “resistive shale” and below the Austin. This unit is over 400 ft thick in Brazos County but is largely absent on the southwestern side of the San Marcos arch where it forms only the upper part of the clay wedge present at the top of the Lower Eagle Ford. The isopach map suggests a source area to the east and south on the Sabine uplift (**Figure 3**). The bulk of the clay wedge in the Lower Eagle Ford in Gonzales, Lavaca and DeWitt counties is assigned to the EGFD400b, which correlates with the uppermost part of the resistive shale unit. The isopach map suggests this interval is an early, previously unrecognized phase of the Harris delta complex. From the San Marcos arch toward the Sabine uplift, the interval changes from interbedded marl and limestone to shale (argillaceous mudrock) to interbedded sandstone and shale. The isopach map shows a source area to the northeast rather than to the east as for the Harris delta complex. The lowermost Eagle Ford (EGFD100) is time equivalent to the Woodbine in the East Texas. This unit thickens to more than 500 ft in Madison County. The isopach map suggests a source area to the northeast. (**Figure 4**). ■

### Biographical Sketch

**JOHN A. BREYER** is a Senior Technical Consultant in the Subsurface Technology Group, Marathon Oil Corporation, Houston, Texas, and an Emeritus Professor of Geology at Texas Christian University. John joined Marathon in 2011 after teaching for thirty-three years at TCU, where he won numerous teaching, research and service awards. He took groups of eager students to Scotland every summer from 1993 until retiring from the University. Most of his former students are in the oil and gas industry. John has authored or co-authored more than sixty articles in international and national scientific journals. Based on his research contributions he was elected a Fellow of the Geological Society of America in 1991. His presentations at national meetings have twice

been recognized for excellence by his peers. John is an expert in the geology of shale resource systems. He edited and contributed to AAPG Memoir 97, *Shale Reservoirs—Giant Resources for the 21st Century*, which won the Robert H. Dott Sr. Memorial Award from AAPG as the Association’s best technical publication in 2012. A second AAPG Memoir with the working title *The Eagle Ford Shale—A Renaissance in U.S. Oil Production* is in the works. In October, 2013, John spent two weeks hiking in the Himalayas as a participant in the National Geographic Society sponsored trip, Bhutan: The Sacred Valley Trek. In July of this year, he spent three weeks taking in the sights of Saint Petersburg and Moscow, and he hopes to travel the Silk Road by railroad through the “stans” next year. Business and/or pleasure have also taken John to Abu Dhabi, Mexico, Canada, Costa Rica, Nicaragua, Honduras, Chile, Argentina, England, France, Poland, Norway, Germany, South Korea, Thailand, and Dallas-Fort Worth.



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### Seismic Data Conditioning

#### Challenge

Most seismic data are processed to optimize image quality for structural interpretation, with little regard to preserving characteristics for successful pre-stack and post-stack interpretation, whether qualitative or quantitative. The result:

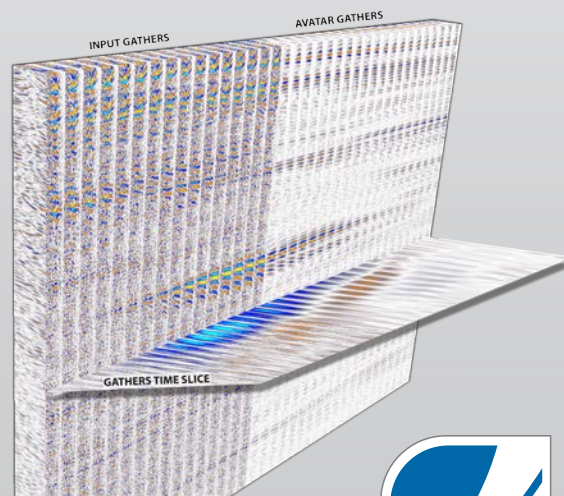
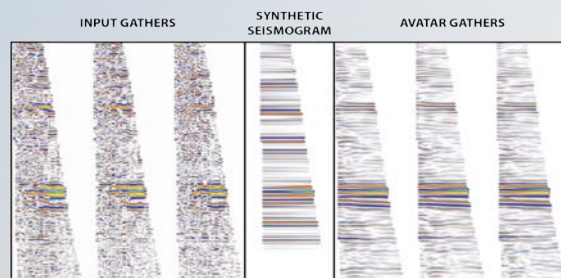
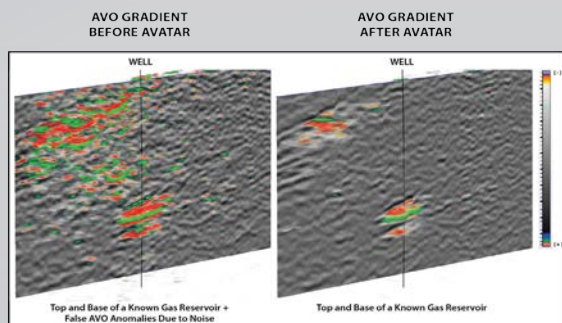
- Poorly imaged faults
- Unreliable horizon picking
- Erroneous AVO and impedance attributes
- Poor well ties

#### Solution

AVATAR: a sophisticated toolkit of pre and post stack data conditioning steps designed to improve the robustness and reliability of automatic interpretation algorithms, seismic attribute analysis, AVO, pre-stack or post-stack inversion and seismic facies classification.

#### AVATAR advantages

- Cost-effective alternative to new data acquisition or full reprocessing
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- Optimum well tie
- Improved property prediction



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Wednesday, October 8, 2014

Black Lab Pub, Churchill Room • 4100 Montrose Blvd.

Social 5:30 p.m., Dinner 6:30 p.m.

**Cost: \$30 Preregistered members; \$35 non-members/walk-ups**

To guarantee a seat, pre-register on the HGS website & pre-pay by credit card.

Pre-registration without payment will not be accepted.

Walk-ups may pay at the door if extra seats are available.

## HGS Environmental & Engineering Dinner Meeting

Robert E. Dedoes P.G.  
Geochemical Dynamics, Inc.  
Quest Consulting, Inc.

# Geoscience-Based Management of Soil during Oil and Gas Development, an Example from the Eagle Ford Oil and Gas Production Area

The importance of soil as a natural resource has been extensively documented in the scientific literature. Naturally occurring soil profiles are complexly structured mineral and chemical assemblages that may require thousands of years to form and evolve to support their current biological communities. Oil and gas development causes disturbance of soil due to installation of wells, pipelines, roads and other infrastructure. Petroleum and chemical spills or releases can have an adverse impact on soil productivity. Improperly managed disturbance to a soil profile through oil and gas development activities may alter the soil's ability to support its pre-disturbance usage such as wildlife habitat, agriculture, recreation, and residential land development. The large amount of acreage currently under oil and gas development makes proper management of soil an important consideration.

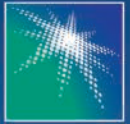
An essential part of developing a site-management plan that minimizes adverse impact to soil is to understand the physical and chemical properties of soil and how they may be affected during oil and gas development. Physical and chemical soil characterization has a long history of research, analytical techniques, and application that can be readily used to identify soil sensitivity to disturbance from oil and gas development. A study was conducted to demonstrate the application of soil characterization for managing soils during oil and gas development at a location in the Eagle Ford oil and gas production area, Atascosa County, Texas. This study identified mineral, organic, and chemical composition,



**Figure 1:** Top of naturally occurring soil profile in the study area. Quantitative characterization of these soils, particularly mineral and chemical composition variation with depth, provided essential data for determining the oil and gas development activities that could cause adverse impact.

HGS Environmental and Engineering Dinner continued on page 19

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Saudi Aramco



8:20AM

TAKING A VITAL ROLE IN SHAPING  
THE FUTURE OF ENERGY

5:20PM

TAKING MY KIDS TO BUILD  
THE PERFECT SANDCASTLE



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soil stratigraphy, topography, and texture as the minimum baseline data required for characterizing soil from this location. Interpretation of baseline soil data from the study location indicated that these soils are sensitive to oil and gas development and may be degraded, if development is not properly managed. The results of the study were used to prepare a science-based site management plan to protect soil from adverse impact during oil and gas development and conduct successful restoration of the property to its original conditions, after cessation of oil and gas activities. The presentation will discuss data collection and analytical methods used in this study to characterize soil, and to demonstrate application of soil characterization data to minimize adverse impact due to oil and gas development. ■

## Biographical Sketch

**MR. DEDOES** has more than twenty-five years of experience in environmental and energy exploration and production geosciences. Mr. Dedoes combines expertise in chemistry and geosciences in conducting science-based investigations. He has

provided expertise in the application of geochemistry, soil science, and other geosciences to environmental investigations, and has used this expertise in providing scientifically defensible solutions to more than one hundred projects and litigations. He has served as primary technical expert and strategist on large multisource environmental litigations. Mr. Dedoes also provides expertise and conducts research-oriented studies on the chemical properties of nanometer scale solids. He is the founder of Geochemical Dynamics Inc. a company specializing in the application of geosciences to solving environmental and oil and gas exploration and production problems. Prior to founding Geochemical Dynamics, Inc. he held the position of Principal Consultant at Shell Global Solutions (Shell Oil Company), managing major environmental issues for the corporation. Mr. Dedoes holds a B.S. in Chemistry and an M.S. in Geology from Michigan State University.



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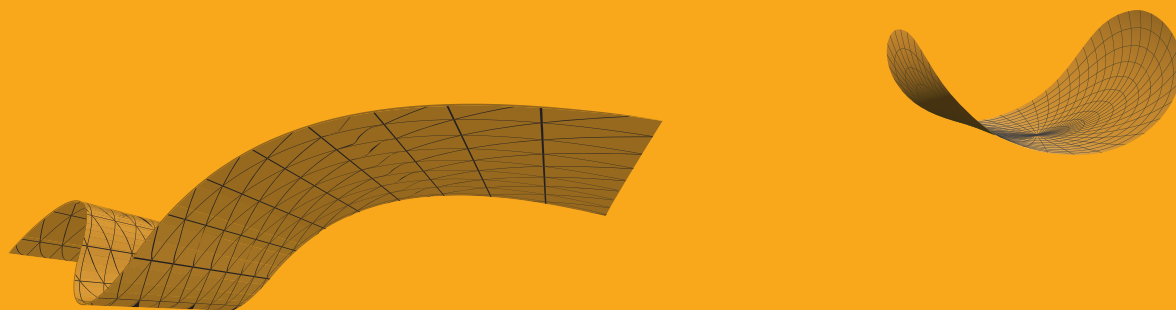
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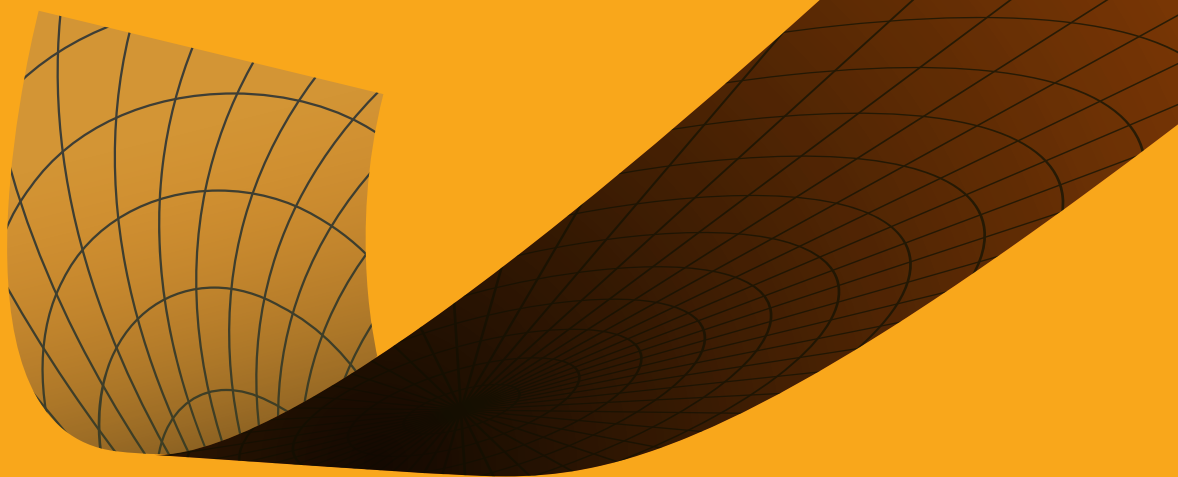
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Monday, October 20, 2014

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

Cost: \$45 Preregistered members; \$50 non-members/walk-ups

To guarantee a seat, pre-register on the HGS website & pre-pay by credit card.

Pre-registration without payment will not be accepted.

Walk-ups may pay at the door if extra seats are available.

## HGS International Dinner Meeting

John Dribus

Schlumberger Oil Field Services  
JDribus@slb.com

# A Tour of Abrupt Margin Prospectivity Around the African Margin and Major Challenges of the Abrupt Margin Play

This talk begins with a review of characteristics of Abrupt Margin turbidites where they were initially identified in the deep water Tano Basin, offshore Ghana in the Jubilee Field and TEN complex. The talk then utilizes multiclient and other seismic data sets to conduct a quick tour of the basin margin turbidite fan potential in the deep waters of Morocco, The Gambia, Senegal, Sierra Leone, Liberia, Ghana, Angola, Namibia, Mozambique, Tanzania, Kenya, finishing in Somalia. Throughout the talk, the seismic data are utilized to identify and describe 13 key geologic challenges and risks that remain to be resolved regarding continued exploration of this important new play that is attracting a lot of exploration interest and dollars on both sides of the Atlantic Basin. Key petroleum systems issues are discussed, including sufficient overburden and adequate seal, turbidite fan volume continuity and connectivity, stratigraphic versus structural trapping, migration through turbidite muds to charge the prospect while depending on similar muds as top seals, faults and stratigraphic compartmentalization, importance of adequate sediment influx to the area, and application of seismic amplitude anomalies for prospect risking. ■


### Biographical Sketch

JOHN DRIBUS is the Global Geosciences Advisor for Schlumberger Oil Field Services. He is a Reservoir Geologist with over 39 years' experience, and has worked all aspects of petroleum exploration, exploitation, and production geology. He worked for five years as

a uranium field geologist, and 20 years for Mobil Oil Corporation as a petroleum geologist, including 14 years working the deep water Gulf of Mexico and subsalt province. He worked the past 14 years for Schlumberger as Northern Gulf of Mexico Operations Manager, and as Global Geologic Advisor working deep water basins in the Gulf of Mexico, Greenland, the Black Sea, the Red Sea, Ghana (Jubilee), Gabon, Angola, and Brazil, with emphasis on sub-salt and pre-salt exploration.



His expertise is in exploration geoscience, petroleum systems analysis, global deep water turbidite analogs and regional geology, exploring in salt basins, and geological risk analysis. He is the former Chairman of the Advisory Board of the American Petroleum Institute (API) Delta Chapter, serves on the Imperial Barrel Award Committee of the American Association of Petroleum Geologists (AAPG). He is a member of the AAPG (30 years), New Orleans Geological Society (NOGS), Houston Geological Society (HGS), Society of Petroleum Engineers (SPE), and European Association of Geoscientists and Engineers (EAGE). In 2013, he was recognized by the Society of Petroleum Engineers with the Eastern North America Region Reservoir Description and Dynamics Award. In 2014, he received the Meritorious Service Award from the American Petroleum Institute (API) Delta Section.



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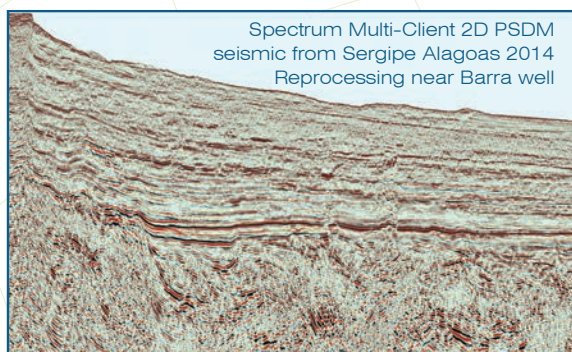
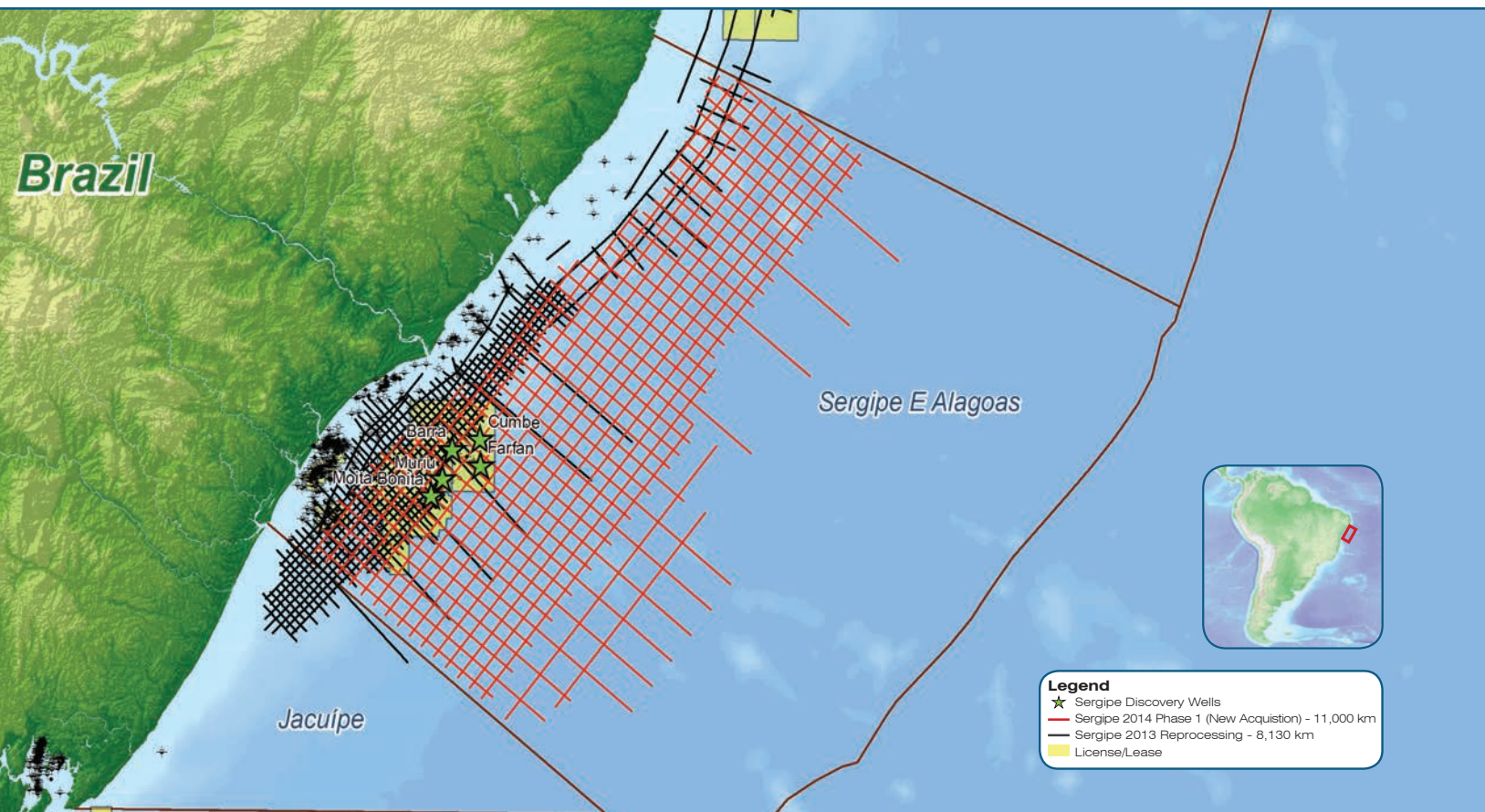
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Induced Valley Fill Sands  
Maximum Flooding Surface  
Top Slope Fan complex  
Sequence boundary  
Leveled Overbank Sands  
Leveled Channel Sands  
Prograding sands  
Prograding complex  
Shingled Turbidites  
Sequence boundary  
Sheet Sands (attached lobes)  
Basin Floor  
Fan Complex  
Lowstand Sand Distribution in Deepwater Basin with Shelf Slope Break

# Brazil: Sergipe Alagoas

New 2D Multi-Client Seismic Data Available



Spectrum has commenced a 11,000 km Multi-Client 2D seismic survey offshore Brazil in the Sergipe and Alagoas Basins along the Eastern Margin of Brazil. The new acquisition program will tie key wells in the Basins, including the recent Barra, Muriu, and Farfan discoveries. PreSTM and PreSDM data will be available in Q4 2014.

To supplement the new acquisition in this active exploration area, Spectrum has completed the reprocessing of 8,130 km of data through both PreSTM and PreSDM and is offering this data to industry in order to get a head start on the expected upcoming round in 2015.

Tuesday, October 21, 2014

Hyatt North Houston (former Crowne Plaza Hotel – Greenspoint)

Social 11:15 AM, Luncheon 11:30 AM

Cost: \$45 Preregistered members; \$50 non-members/walk-ups

To guarantee a seat, pre-register on the HGS website & pre-pay by credit card.

Pre-registration without payment will not be accepted.

Walk-ups may pay at the door if extra seats are available.

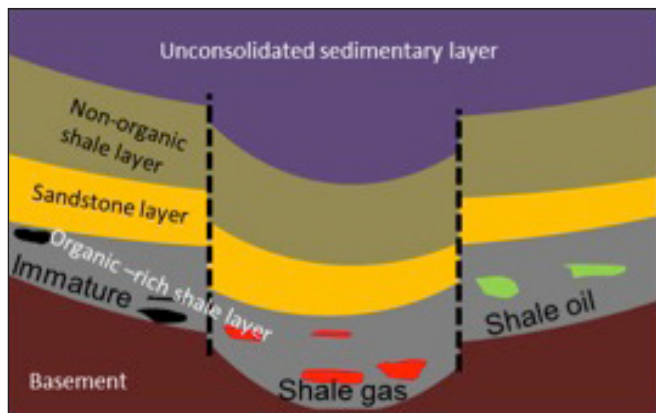
## HGS Northsiders Luncheon Meeting

**Malleswar Yenugu, Ph.D.**

University of Houston & Ikon Science  
malleswar.yenugu@gmail.com

HGS Northsiders Luncheon Meeting

# Source Rock Maturation: Its Effect on Porosity and Anisotropy in Unconventional Resource Plays



Schematic showing the generation of hydrocarbons from organic-rich shale layer in a sedimentary basin.

imaging by CT scan shows that the kerogen maturation alters the internal structure of the sample. A significant amount of porosity is developed in the organic matter during maturation. This porosity is due to conversion of solid kerogen to liquid or gaseous hydrocarbons. Grain density also increases due to the decomposition of lighter kerogen during pyrolysis. The ultrasonic velocities of isolated kerogen are also measured. The measurements are carried out on the immature kerogen sample. The bulk modulus of kerogen is found to be between 4-5 GPa.

This talk also focuses on the effect of kerogen content and its maturity on seismic velocities and anisotropy for different organic-rich shales. It is observed that seismic anisotropy has different trends based on kerogen maturity. ■

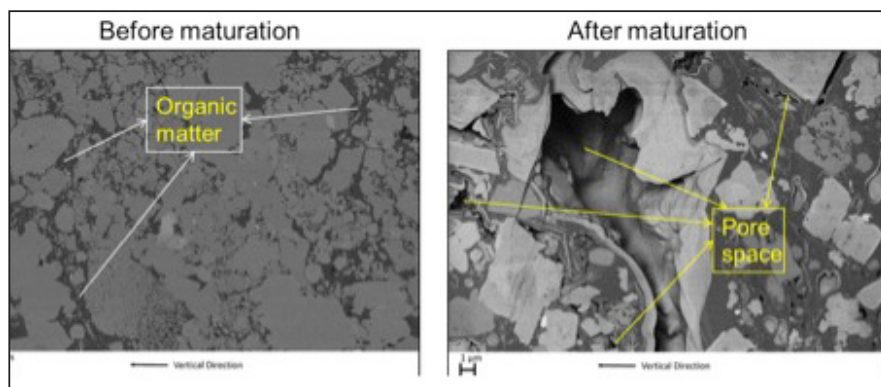
Interlinking of many disciplines plays an important role in the successful characterization of shale reservoirs. This talk discusses how the artificial kerogen maturity of the organic-rich Green River shale affects the shale's petrophysical, micro-structural, geochemical and elastic properties. A shale sample with total organic carbon (TOC) of ~28% is used in the study. It is then subjected to anhydrous pyrolysis for artificial maturation by cooking the sample at 3500C for three days. Horizontal cracks, obvious on the cooked sample, are induced by hydrocarbon generation and expulsion. Ultrasonic velocities are measured before and after the pyrolysis. A significant change in the P-wave anisotropy ( $\epsilon$ ) is observed after maturation. TOC and Hydrogen Index (HI) decrease after maturation. Microstructural

### Biographical Sketch

MALLESWAR YENUGU is currently working as a senior reservoir geophysicist at Ikon Science Americas in Houston. He received his PhD in geophysics from the University of Houston. He received M.S. (Geophysics) and B.S. (Physics) degrees from Andhra University in India. He worked as a reservoir geophysicist in India for more than five years before moving to the United States to pursue his PhD. Here he gained experience in seismic attribute analysis and reservoir characterization. His PhD dissertation is on how kerogen maturity affects the seismic properties



of organic-rich shales. He also worked as a summer intern for Spyglass Energy, Chevron, ExxonMobil and ConocoPhillips. He is a recipient of scholarships from SEG, AAPG, SPE, PBGS and various other societies. He was also awarded the SPIRIT scholarship (2011) from ConocoPhillips and the Global Geoscience Award (2012) from ExxonMobil. His research interests include rock physics, geomechanics and reservoir characterization. He is a member of SEG, AAPG, SPWLA, EAGE and SPE.



SEM images

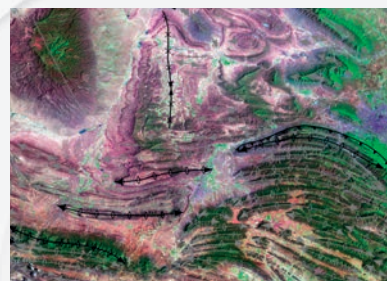


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# New for 2014

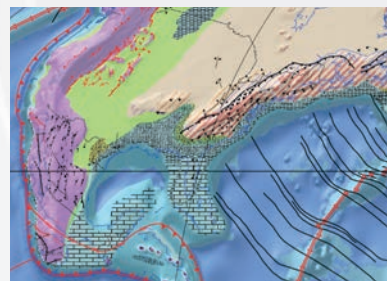
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Monday, October 27, 2014

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Social Hour 5:30–6:30 p.m.

Dinner 6:30–7:30 p.m.

Cost: \$45 Preregistered members; \$50 non-members/walk-ups

To guarantee a seat, pre-register on the HGS website & pre-pay by credit card.

Pre-registration without payment will not be accepted.

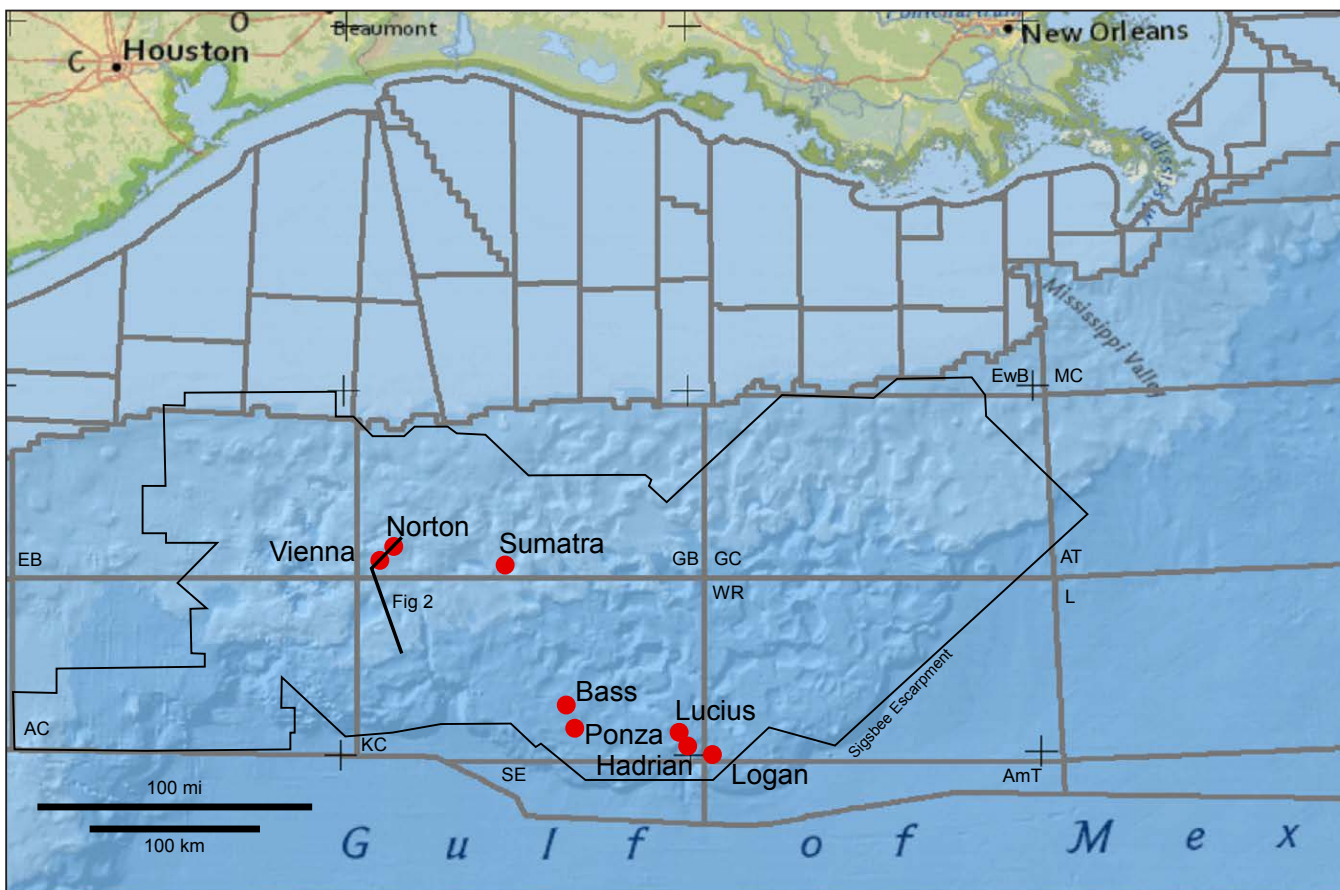
Walk-ups may pay at the door if extra seats are available.

## HGS North American Dinner Meeting

Joseph Carl Fiduk  
Schlumberger

HGS North American Dinner Meeting

# Origin, Transportation, and Deformation of Mesozoic Carbonate Rafts in the Northern Gulf of Mexico



**Figure 1:** Map showing key wells that drilled Mesozoic carbonates in the Gulf of Mexico.

Seismic correlations and well data confirm that deep-water carbonate beds of Mesozoic age have been found above or within the shallow allochthonous salt canopy in the northern Gulf of Mexico. Publicly available wells in the Garden Banks (Norton GB 754, Vienna GB 840, Sumatra GB 941), Keathley Canyon (Bass KC 596, Ponza KC 774, Lucius KC 875, Hadrian KC 919), and Walker Ridge (Logan WR 969) OCS protraction areas penetrate Mesozoic carbonates situated above the salt canopy or equivalent salt welds. The seismic character of these rafts strongly resembles that of sub-canopy Mesozoic carbonates and overlying Paleogene strata. Cretaceous and Wilcox seismic facies were mapped at the

salt canopy level on seismic data in Alaminos Canyon, Garden Banks, Green Canyon, Keathley Canyon and Walker Ridge OCS protraction areas. The presence of displaced Mesozoic carbonate rafts above the canopy raises two important questions: 1) where did these rafts originate? and 2) how did blocks of Mesozoic strata get elevated to such shallow levels in the basin stratigraphy?

A geo-mechanical model for displacing Mesozoic carbonates from their regional stratigraphic position and transporting them as rafts mirrors the creation of the allochthonous salt canopy.

HGS North American Dinner continued on page 27



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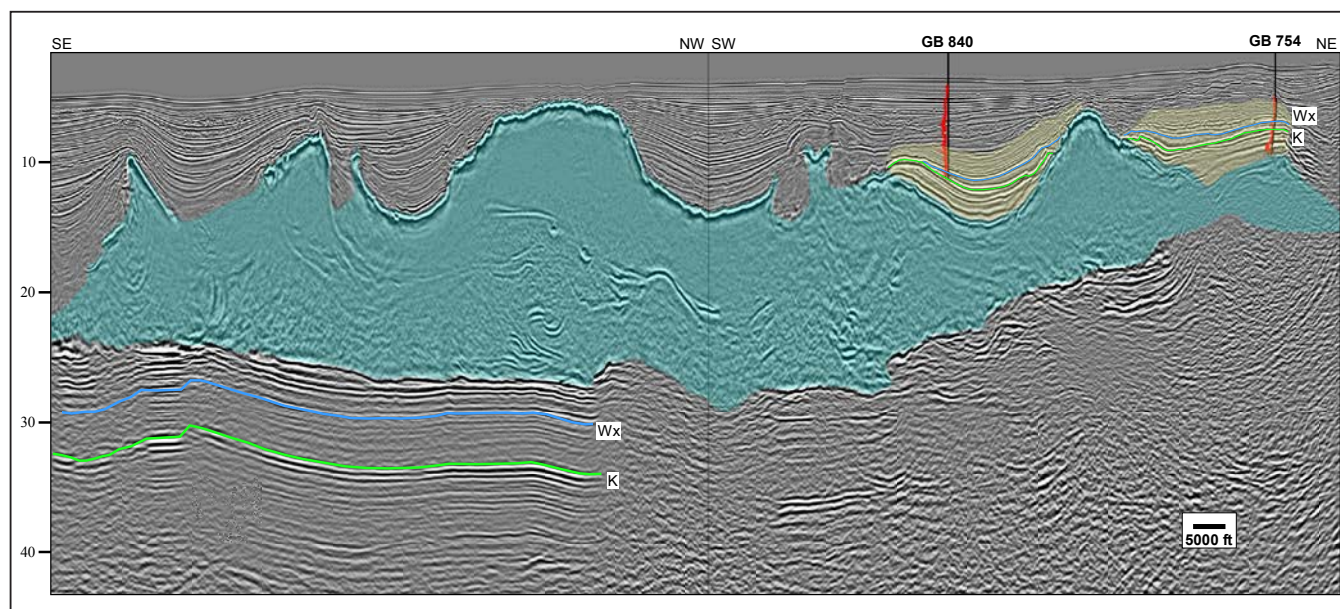


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**Figure 2:** Seismic line connecting two wells that drilled Mesozoic carbonates in the Gulf of Mexico.

As deep salt inflates to form large, broad, diapiric structures, overlying strata (i.e. Jurassic and Cretaceous carbonates) are held above adjacent subsiding minibasins containing equivalent strata. At later times in the Eocene, Oligocene, and Miocene, salt from the inflated structures broke out to form shallow canopies. As salt flowed laterally it carried the roof material with it. Radial spreading of the salt broke the roof material into multiple smaller units. Seismic mapping suggests some GOM rafts have travelled many tens of kilometers (possibly >100km) away from the diapiric structures that lifted them to the shallow salt canopy.

Over 3100 sq. km (1200 sq. mi) of rafted strata have been identified to date. Most of the rafted strata are found near the terminus of the canopy system on the lower slope along the Sigsbee Escarpment. A much smaller amount of rafted strata is found scattered in the middle slope. The total discovered so far almost certainly represents a minimum amount of rafted strata generated. The author expects to find many additional rafted bodies as this investigation continues. ■

### Biographical Sketch

**JOSEPH CARL FIDUK** has a B.S. and an M.S. degree in Geology from the University of Florida, as well as an M.B.A degree from the University of Texas of the Permian Basin and a Ph.D. in Geology and Geophysics from the University of Texas at Austin. He has

worked for the USGS, Gulf Oil, Discovery Logging, the Texas Bureau of Economic Geology, British Petroleum, Texas A&M University, the University of Texas, the University of Colorado (as a private consultant), and as Chief Geologist for CGG and CGGVeritas. He is currently Chief Geologist for Schlumberger in Houston, TX.



His research interests cover coastal and shelfal clastic deposition, salt structural deformation and evolution, basin analysis, shelf margin to deep marine depositional processes, marine sedimentology, petroleum systems analysis, and the use of three-dimensional seismic data in petroleum exploration. He is currently involved in salt-sediment interaction research in the Flinders Ranges, South Australia, fluvial deltaic deposition in the Cretaceous Seaway of NW Colorado, and deep marine stratigraphic analysis in the Gulf of Mexico. He also teaches internal training classes on seismic interpretation and salt tectonics for Schlumberger and external industry courses for Nautilus U.S.A. and local geological societies. In his 30+ years as a working geologist he has published over 80 peer-reviewed abstracts and papers.

# October 2014

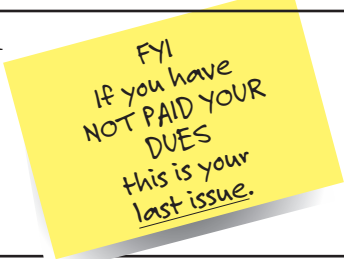


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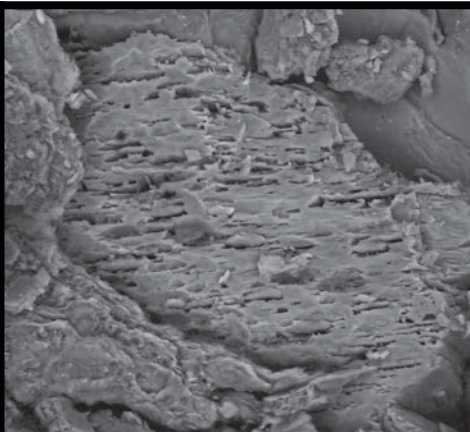
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T u e s d a y

W e d n e s d a y

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|---|---|---|--|
|   | <b>Reservations:</b><br>The HGS prefers that you make your reservations on-line through the HGS website at <a href="http://www.hgs.org">www.hgs.org</a> . If you have no Internet access, you can e-mail <a href="mailto:reservations@hgs.org">reservations@hgs.org</a> , or call the office at 713-463-9476. <b>Reservations for HGS meetings must be made or cancelled by the date shown on the HGS Website calendar, normally that is 24 hours before hand or on the last business day before the event.</b> If you make your reservation on the Website or by email, an email confirmation will be sent to you. If you do not receive a confirmation, check with the Webmaster@hgs.org. Once the meals are ordered and name tags and lists are prepared, no more reservations can be added even if they are sent. <b>No-shows will be billed.</b> |   | <b>1</b><br>  |
| <b>5</b><br><br><b>GCAGS Convention</b><br><i>Lafayette, LA</i>   | <b>6</b>  | <b>7</b>  | <b>8 HGS Environmental &amp; Engineering Dinner Meeting</b><br><i>"Geoscience-Based Management of Soil During Oil and Gas Development, an Example from the Eagle Ford Oil and Gas Production Area," Robert E. Dedoes</i><br><i>Page 17</i> |
| <b>12</b>   | <b>13 HGS General Dinner Meeting</b><br><i>"From the Arch to the Uplift: Depositional Changes in the Cenomanian-Turonian Interval (Eagle Ford and Woodbine Groups) across Central and East Texas,"</i><br><i>J. A. Breyer</i><br><i>Page 11</i>   | <b>14</b><br><br><b>HGS Board Meeting 6 p.m.</b>  | <b>15</b>  |
| <b>19</b><br><br><b>Earth Science Week Geology Field Trip</b><br><i>12:00 pm - 3:00 pm</i><br><i>Whiskey Bridge over Brazos River</i><br><i>Page 14</i> | <b>20 HGS North American Dinner Meeting</b><br><i>"Origin, Transportation, and Deformation of Mesozoic Carbonate Rafts in the Northern Gulf of Mexico,"</i><br><i>Joseph Carl Fiduk, Page 25</i><br><b>HGS Golf Tournament</b><br><i>Page 34</i>  | <b>21 HGS Northsiders Luncheon Meeting</b><br><i>"Source Rock Maturation: Its Effect on Porosity and Anisotropy in Unconventional Resource Plays,"</i><br><i>Malleswar Yenugu</i><br><i>Page 23</i> | <b>22</b>  |
| <b>26</b>   | <b>27 HGS International Dinner Meeting</b><br><i>"A Tour of Abrupt Margin Prospectivity around the African Margin and Major Challenges of the Abrupt Margin Play,"</i><br><i>John Dribus</i><br><i>Page 25</i>  | <b>28</b>   | <b>29</b>  |

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# GEOEVENTS

Thursday

Friday

Saturday



|   |  |   |
|---|--|---|
| 2   | 3<br><b>Don't wait,<br/>make<br/>your reservations<br/>online at<br/>www.hgs.org</b>                     | 4   |
| 9   | 10<br><b>GSH/HGS Fishing<br/>Tournament</b><br><i>TopWater Grill Marina<br/>San Leon, TX<br/>Page 37</i> | 11<br><b>Earth Science Week<br/>Earth Science Celebration</b><br><i>11:00 am - 3:00 pm<br/>Houston Museum of Natural Science<br/>Page 14</i>  |
| 16<br><b>GSH Geoscience Day</b><br><i>Houston, TX<br/>Page 46</i>   | 17   | 18  |
| 23<br><b>Networking with Class: An<br/>Interactive Workshop on<br/>Business Dining Etiquette</b><br><i>Houston Petroleum Club<br/>Page 12</i> | 24   | 25  |
| 30  | 31   | <b>Members Pre-registered Prices:</b><br>Dinner Meetings members..... \$45<br>Emeritus/Honorary members..... \$40<br>Student members..... \$10<br>Nonmembers & walk-ups..... \$50<br>Except - Env. & Eng. .... \$30<br>Nonmembers & walk-ups..... \$35<br>Emeritus/Honorary members..... \$15 |

**November 10-13 2014**  
AAPG Fall Education Conference  
Houston TX

**January 19, 2015**  
HGS Legend's Night  
Houston, TX

**February 16-17, 2015**  
Applied Geoscience Conference –  
Integrated Approaches of  
Unconventional Reservoirs  
Assessment and Optimization  
Houston, TX

**May 18-19, 2015**  
Applied Geoscience Conference –  
Interdisciplinary Micro to  
Macro-Scale Geomechanics  
Houston, TX

**May 31-June 3, 2015**  
2015 AAPG  
Denver, CO

**September 20-22, 2015**  
GCAGS Annual Convention  
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# Grand Canyon Field Trip: Another Success

By Steve Earle

Grand Canyon Field Trip: Another Success



*Marble Canyon: Floating down Marble Canyon, day 2; photo courtesy Mark Leonard.*

This June the Houston Geological Society took 28 adventurers down the Colorado River through the Grand Canyon. For many it was the chance of a lifetime to revel in the classical geology exposed in this most magnificent setting. For others it was an opportunity to introduce them to geology in one of the Seven Natural Wonders of the World. For everyone, it was a chance to get out and have a great time.

This trip, originally put together by Dave Lazor, was again led by HGS Past President Steve Earle and the great staff from Hatch River Expeditions. As always, the food was great and the scenery spectacular. New this year were the sleep cots provided by Hatch.

Hikes this trip included North Canyon, Nankoweap Granaries, Little Colorado, Carbon Canyon, Clear Creek, Elves Chasm, Deer Creek to the “patio” and the “throne room,” Matkatamiba Canyon and Havasu Creek.

The participant who traveled the farthest to join us this year was Mel Jones, all the way from Australia. Other participants were:



*Group at Havasu Creek, day 7; photos courtesy author except as noted.*

Julie and Brian Brister, Angel Callejon, Andrea and Ed Cavalier, Suky and Ed Cazier, J.T. and Kenneth Floyd, Shiela Hall, Claudia Hackbarth and David Nelson, Alice and Paul Jones, Doug Kayes, Mark Leonard, Larry and Mark Quandt, Chris and Dietmar Rabussay, Alan and Owen Schwartzbard, Alyson and Scott Short, Richard Spaw, Lyla Steenberg and Henry Wise.

**Grand Canyon Field Trip** continued on page 33

# 14<sup>th</sup> ANNUAL SALTWATER TOURNAMENT

Friday, October 10, 2014

TopWater Grill Marina

815 Avenue O, San Leon, TX  
Galveston Bay Complex and Offshore

This year's Saltwater Fishing Tournament will include an Offshore Division to be held on Friday, October 10<sup>th</sup>, 2014 at TopWater Grill Marina, San Leon. We are looking forward to a big event this fall and we encourage full family participation.

## Galveston Bay Complex Division

Trophies will be awarded for the heaviest individual Redfish (Non-Tagged), Speckled Trout, and Flounder. Trophies will also be awarded for the heaviest individual Stringer - 1 Redfish, 3 Speckled Trout, and 1 Flounder.

## Galveston Offshore Division

Trophies will be awarded for the heaviest individual Ling, King Mackerel, and Mahi-mahi

Registration fee includes: Launch Fee, GSH Fishing Cap, and Fish Fry Meal after weigh-in, Refreshments, Trophies, and DOOR PRIZES. For more information, please contact:

Bobby Perez (GSH)

281-240-1234 ext. 3233 Office  
281-240-4997 Fax  
281-787-2106 Cell  
281-495-8695 Home

E-mail addresses: [rdphtx@aol.com](mailto:rdphtx@aol.com) or [r\\_perez@seismicventures.com](mailto:r_perez@seismicventures.com)

The Geophysical Society of Houston and the Houston Geological Society are non-profit organization serving the Geosciences Community. Corporate and individual contributions are appreciated and will be acknowledged on several sponsor boards and banners at the Weigh-In Station and Marina. All contributors will be recognized in the GSH Journal following the tournament. Contributions will be used to offset event expenses and overage will be used for Scholarships, Student Memberships, Outreach Programs and other activities of the Society. This is a great way to entertain friends, family, business associates, and clients. So spread the word!

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PLEASE REGISTER ONLINE AT: <http://www.gshtx.org/en/cev/1164> Please register **EARLY!**

Upon Registration, each participant will be provided with a copy of the specific tournament itinerary and rules sheet by e-mail.

Or return this form with your Name: \_\_\_\_\_, Company: \_\_\_\_\_,  
Phone: \_\_\_\_\_ and Email \_\_\_\_\_ with a check for \$75.00 per contestant payable to:

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Call the office at: 281-741-1624 with Credit Card information

Registration Fee: \$ \_\_\_\_\_ + Sponsor Contribution: \$ \_\_\_\_\_ = TOTAL \$ \_\_\_\_\_

### **DISCLAIMER:**

I acknowledge that the Geophysical Society of Houston will not be held responsible for injuries or accidents during this event.  
**PRACTICE SAFETY!!!!**

Signature: \_\_\_\_\_



*Canyon scene, day 5; photo courtesy Henry Wise.*



*Waterfall in Clear Creek, day 4.*

As always, the group met up in Las Vegas and travelled by motor coach through Zion National Park and on to our motel at Marble Canyon. We launched from Lee's Ferry the next day on our 187 mile, eight day/seven night float trip. Between the many rapids, the side trips and the geologic discussions, there was never a dull moment on this excursion. All too soon, we were flying out by helicopter and then back to civilization (or whatever else you might call Las Vegas).

Please consider joining us in 2016 when the HGS will once again take another 28 lucky people on this great adventure. As soon as I get a launch date, we will post details of the trip and begin taking reservations. For now, just enjoy these photos from this last field trip! ■



*Heading back to the rafts at the Little Colorado River, day 3; photo courtesy Mark Leonard.*



*Permian reptile tracks in Coconino Sandstone, day 1.*

**Grand Canyon Field Trip** continued on page 35

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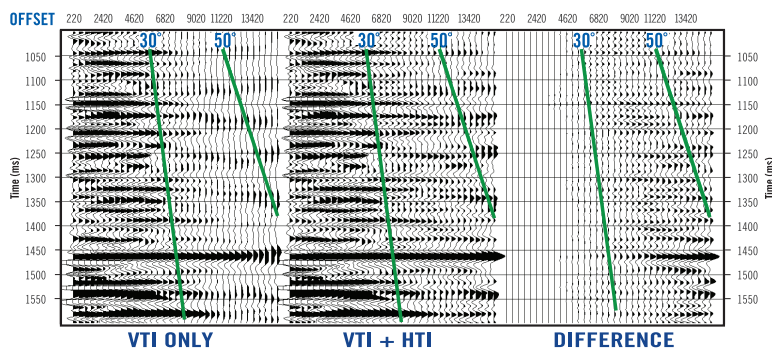
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Rafts playing on River, day 3; note Dox sediments behind Doug Kayes (standing); photo courtesy Angel Callejon.



Running the big rapids of the Inner Gorge on day 4; photo courtesy Henry Wise.



Side canyon; photo courtesy Shiela Hall.



At the "Patio" of Deer Creek, day 6; photo courtesy Angel Callejon.

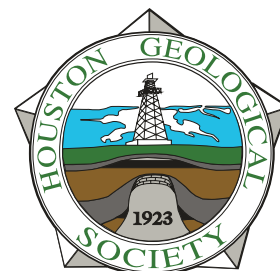


Helicopter coming in to take us home, day 8; photo courtesy Henry Wise.

# HGS GOLF TOURNAMENT

Monday – October 20, 2014

Kingwood Country Club



## DUST OFF THE CLUBS, POLISH THE SHOES, AND PAD THE HANDICAPS, IT'S TIME FOR GOLF!

Come out and join us for golf, food, friends and fun at the annual HGS Golf Tournament at Kingwood Country Club. This year's format will be a four man scramble, with three flights determined by handicap. First, second, and third place awards (blind draw for 3rd place) will be awarded for each flight. There will be prizes awarded for closest to the pin and long drive as well as many great door prizes and raffle prizes for participants.

The entry fee is \$150.00 per person or \$600.00 per team on entries received on or before October 10th. Entries will be accepted after October 10th, but a \$25.00 late fee will be applied per golfer. Individual entries will be grouped with other individual golfers to make a foursome. Entries are limited and will be accepted on a first-in basis.

**Companies or individuals interested in sponsoring the event should contact Mark Dennis at 281-494-2522 (office), 281-705-4346 (cell) or by email at [mdennis@petrolog.com](mailto:mdennis@petrolog.com).**

**To enter, please fill out the entry form and email, fax or mail along with your entry fee (payable to HGS Entertainment Fund) to:**

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Office: 281-494-2522 Fax: 281-494-2526

Email: [mdennis@petrolog.com](mailto:mdennis@petrolog.com) & [mlange@petrolog.com](mailto:mlange@petrolog.com)

### **SCHEDULE OF EVENTS**

8:00 – 9:45 a.m. Registration and free use of driving range  
(Breakfast will be provided by **Petro Log International, Inc.**)

10:00 a.m. Shotgun start

3:00 p.m. Cash bar, open buffet

3:30 p.m. Door prizes and awards presentation



Team Captain \_\_\_\_\_ Phone \_\_\_\_\_ Amount Enclosed \_\_\_\_\_

Company \_\_\_\_\_ Email \_\_\_\_\_

Billing Address \_\_\_\_\_

Credit card # \_\_\_\_\_ Exp. Date \_\_\_\_\_ Code# \_\_\_\_\_

**Please Provide Email Addresses For All Team Members. All Communications Will Be Done Via Email.**

**Foursome Members**  
(Please Print)

**Company**

**Phone Number/Email**

**Hdcp/  
Avg. Score**

|          |       |       |       |
|----------|-------|-------|-------|
| 1. _____ | _____ | _____ | _____ |
| 2. _____ | _____ | _____ | _____ |
| 3. _____ | _____ | _____ | _____ |
| 4. _____ | _____ | _____ | _____ |

*Please provide email addresses for **all** team members. All communications will be done via email.*

# HGS GOLF TOURNAMENT

Monday – October 20, 2014

Kingwood Country Club

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Billing Address \_\_\_\_\_

Credit card # \_\_\_\_\_

Exp. Date \_\_\_\_\_ Security Code# \_\_\_\_\_

**Please email your company logo to Mark Dennis at mdennis@petrolog.com.**

**Note: Company logos (high resolution file) must be received no later than October 11<sup>th</sup>.**

**If there are any questions, I can be reached at 281-705-4346 (cell) or 281-494-2522 (office).**



HOUSTON GEOLOGICAL SOCIETY presents

# Legends Night 2015

AAPG Imperial  
Barrel Award

*Honoring the Legends That Mold the  
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HGS invites you to join us for the next of these memorable dinner events honoring two university professors and Geology Department faculty advisors who have dedicated their time and energy to produce winning teams of the AAPG Imperial Barrel Award

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**Cash bar starts at 5:30pm**

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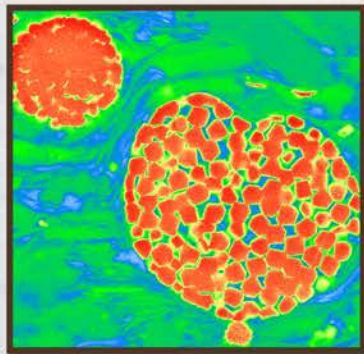


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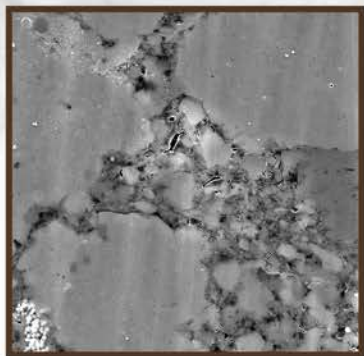


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- Natural Fracture Systems & Producibility
- Reservoir Characterization of Lacustrine Mudrock Systems
- Hybrid Unconventional Systems - Tight Targets

### Day 2:

- Geologically-driven Completion Techniques in Unconventional Reservoirs
- Mudrock Systems Characterization - Advanced Geophysical Insights
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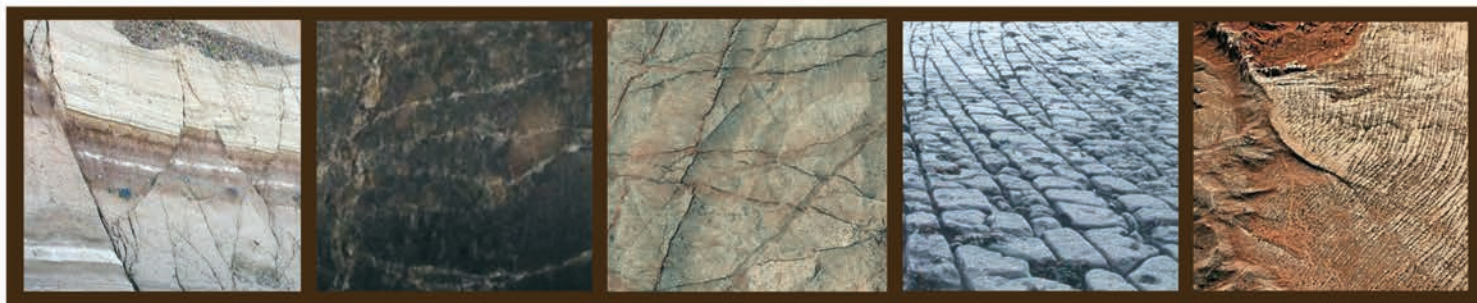
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**Hosted by the Houston Geological Society**

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Contact [linda.sternbach@gmail.com](mailto:linda.sternbach@gmail.com)

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- **New Oil and Gas Discoveries**
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- **Gulf of Mexico Deepwater**
- **Environmental Geology**
- **Coastal Geology**
- **Geology & Engineering**

# GCAGS Convention Returns to Houston September 2015

By Linda Sternbach and Dianna Phu

The Houston Geological Society will host the 65th Gulf Coast Association of Geological Societies (GCAGS) Convention at the George R. Brown Convention Center, September 19-22, 2015. The GCAGS is also known as the AAPG Gulf Coast Section. All current members of the HGS, South Texas Geological Society, NOGS (New Orleans Geological Society), Austin Geological Society, Lafayette Geological Society and Corpus Christi Geological Society, and a few other societies, are members of GCAGS. Learn more at [www.gcags.org](http://www.gcags.org)! GCAGS does not charge any member dues. Dues to AAPG, and to the local Gulf Coast societies, are your invitation to participate in upcoming GCAGS conventions and social events. The Gulf Coast Section of SEPM (GCSSEPM) plans to co-host the GCAGS 2015 convention. GCSSEPM will be organizing oral talks, posters, judging and the SEPM awards program.

The 65th Annual GCAGS convention will feature Gulf Coast area oil, gas and environmental topics, with the intent that Gulf Coast geoscientists will expand their technical training, knowledge and networking during the convention. The General Chair of the convention is Larry Bartell (Legends Exploration, email [ldbartell@legendsexpl.com](mailto:ldbartell@legendsexpl.com)). GCAGS President for the 2015 convention is Charles Sternbach (Star Creek Energy, [carbodude@gmail.com](mailto:carbodude@gmail.com)). GCAGS Non-Technical Chair is Deborah Sacrey, HGS President-Elect. The Technical Program is coordinated by Linda Sternbach (Star Creek Energy) and Paul Basinski (Burgundy Exploration- email [pbasinski@comcast.com](mailto:pbasinski@comcast.com)). Dianna Phu ([dianna@exabyte.org](mailto:dianna@exabyte.org)) is both Secretary for the convention and publicity, website and social media chair. Mike Erpenbeck is convention Treasurer. The last GCAGS convention held in Houston was in 2008; Ken Nemeth was GCAGS President and Dave Rensink was General Chair. Larry Bartell was also the General Chair for the 2000 Houston GCAGS convention.

The convention is proud to have the following hard working volunteers: Short Courses (Robert Pledger ([rpledger@hotmail.com](mailto:rpledger@hotmail.com)), Field Trips co-chairs Dr Julia Wellner, University of Houston ([jwellner@uh.edu](mailto:jwellner@uh.edu)) and Dr. Robert Wellner ([robert.w.wellner@exxonmobil.com](mailto:robert.w.wellner@exxonmobil.com)). Poster Sessions will be coordinated by Meredith Faber, Swift Energy ([meredith.faber@swiftenergy.com](mailto:meredith.faber@swiftenergy.com)). Judging Co-Chairs are Sandy Rushworth ([sandyrushw@aol.com](mailto:sandyrushw@aol.com)), and David Risch ([davidlrish@aol.com](mailto:davidlrish@aol.com)). If you have

ideas on Short Courses and Field Trips or want more information on participating, contact Robert Pledger and Julia Wellner.

The convention will start on Saturday, September 19, 2015. The opening weekend will kick off with one and two-day field trips, leaving from the George R. Brown Convention Center. These will be open to professionals and university students. There will also be one and two-day technical short courses on the weekend of Sept 19-20 2015. The talks and poster sessions will occupy two full days and will be held on the third level of the George R. Brown Convention Center from September 21-22, 2015 (Monday and Tuesday). 100 or more talks, in concurrent sessions, are anticipated to be included in the technical program.

The Houston 2015 GCAGS convention is opening up a "Call for Papers", and inviting geoscientists to submit a short 250 word abstract with title and authors by December 13 2014. Submit a short word document (250 words) to Technical Program chair Linda Sternbach at [linda.sternbach@gmail.com](mailto:linda.sternbach@gmail.com), or check the convention web page and blog hosted by GCAGS Secretary Dianna Phu at [www.gcagshouston.com](http://www.gcagshouston.com).

The 2015 session themes are: New Oil and Gas Discoveries, Unconventional Plays, Development Field Studies, GOM Shelf and Onshore plays, Salt Tectonics and Traps, Mexico and Caribbean Plays, Geophysical Technology, Gulf of Mexico Deepwater, Environmental Geology, Coastal Geology and Surface Impact, Geology-Geophysics-Engineering, Business Portfolio Management, and Climate/ Public Awareness Issues.

The 65th Annual GCAGS convention has a specially designed logo created by Charles Sternbach and HGS Bulletin design editor, Lisa Krueger. The round logo has the words: "Discovery, Technology, Leadership and Education" around the outside ring. The center features graphics of an onshore rig, offshore rig and shale strata and offshore salt basin. The committee suggested this combination of images for the 2015 GCAGS logo because the convention will be incorporating technical topics on both onshore and offshore Gulf of Mexico, and also the Mexico/Caribbean areas, with the goal of bringing together experienced professionals with young professionals and geoscience students.

GCAGS Convention Returns to Houston continued on page 47

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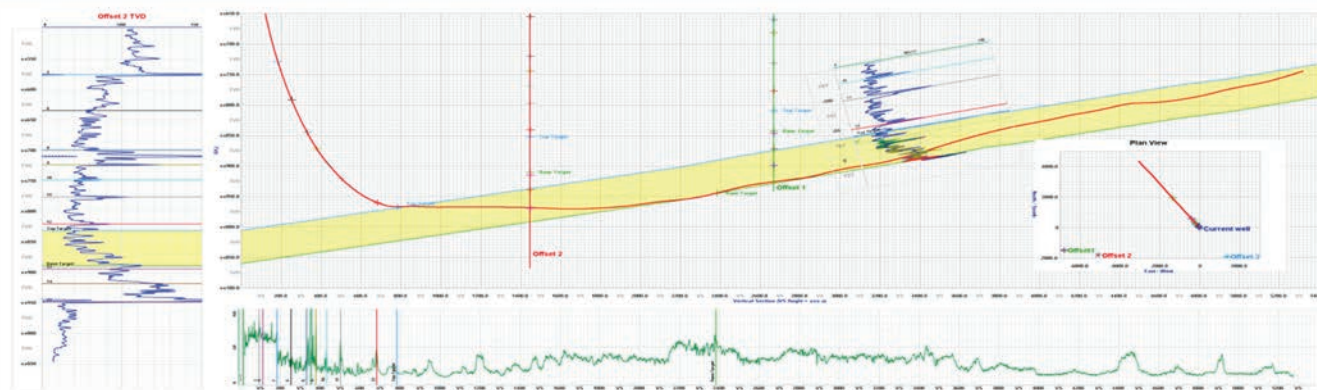
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There are other projects initiated by GCAGS that deserve mention. There will be a GCAGS Transactions publication of all the talks and posters at the 2015 convention. This editor of the 2015 Transactions is past HGS President, Steve Levine (stephenlevine@sk.com). In addition, GCAGS has a peer-reviewed technical publication called *GCAGS Journal* that publishes full length geoscience-related papers each year in hard copy and online as pdfs. The *GCAGS Journal* started in 2012. Past papers can be found online at <http://www.gcags.org/Journal/GCAGS.Journal.Archives.html>. The 2015 *GCAGS Journal* Editor is HGS Past-President and former *HGS Bulletin*

Editor, Barry Katz. Geoscientists will need to submit a 600 word abstract explaining their submission by December 2, 2014. Contact Barry Katz at [barrykatz@chevron.com](mailto:barrykatz@chevron.com) for more information. GCSSEPM Editor will be Patricia Santogrossi, past *HGS Bulletin* editor.

Check the convention website [www.gcagshouston.com](http://www.gcagshouston.com) for more information on contacting all the volunteers and log on for the latest news as the convention planning continues from now till mid-2015. Convention registration will open in August 2015. ■



Larry Bartell  
General Chair



Charles Sternbach  
2015 GCAGS  
Convention President



Deborah Sacrey  
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Paul Basinski  
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Dianna Phu  
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## PLAN TO ATTEND

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Nov. 17-19, 2014 – Golden, Colorado

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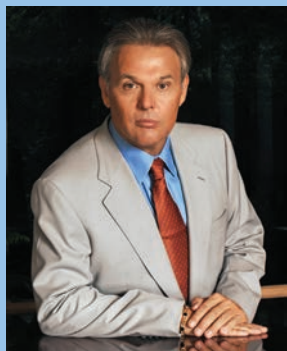


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### Evaluating Tight Oil and Gas Reservoirs

May 18 – 22, 2015

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November 3 – 5, 2014

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# A Look Back in Time

By Ken Nemeth, President

I was going to begin this month's look back with the word so, but last May I read about the over-use of the word (<http://www.today.com/health/so-heres-why-its-ok-start-sentence-so-2D79669285>) and elected not to use it. So, for this month's look back, I thought that I would track the HGS office locations and staff over time.

In 1948, HGS at age 24 had no employees; met at company offices; and had a directory with 156 companies and 628 listed members by my count. The top four employers were Consultants, Independents, Gulf Oil Corporation and Humble Oil & Refining Co. Some not so prominent employers included the Houston Chronicle, Houston Post, and the Houston Press.

We know from the historical information published in the 1962 directory that HGS got its first phone number for its first office in 1957. The office was located at 234 Esperson Building, Houston, Texas with no zip code ([http://en.wikipedia.org/wiki/Esperon\\_buildings](http://en.wikipedia.org/wiki/Esperon_buildings), <http://turnkeyartsolutions.com/corporateart/featured/houston-history-and-ghosts-the-esperon-buildings/>)! There is no contact information (secretary or phone number) in the 1958 or 1962 directories.

In 1958, the *HGS Newsletter* became the *Bulletin*; dues were \$4.00; and the dinner meeting was at the Houston Club (does anyone remember that location?), but I don't know what the price was. The Placement Committee "... performed very good service in past years, but the present employment situation is worse than at any time since the Thirties and the Placement Committee has met this by increasing their effort.... 96 Total people had registered with the Committee." (The Houston Club merged with the Plaza Club in January, 2013. There is a short note about this in Wikipedia: [http://en.wikipedia.org/wiki/Houston\\_Club](http://en.wikipedia.org/wiki/Houston_Club).)

The September 1960 *Bulletin* displayed a telephone number for HGS: FA 3-9309. The *Bulletin* received a slightly new format that included the location and number beneath the index. You could subscribe to the bulletin for \$3.00. Dues had increased to \$4.50. The mailing address now included Houston 2, Texas.

By 1969 the five-digit zip code was in use (77002), the phone number began with CA instead of FA. Dinner was \$5.38 and drinks were \$1.00. A special luncheon meeting at the Rice Hotel charged \$3.50 for the meal. GCAGS held its convention in Miami!

In September, 1975, the office was still located in the Esperson building, but the phone number was now 223-9309.

In 1977 dues were \$10.00. The Texas State Legislature discussed licensing geologists (March President's letter). The Society moved

its office from the Esperson Building to 806 Main Street, Suite B-1. This was the office announcement in the April *Bulletin*:

## HGS Office Relocated

For nearly twenty years, Cardinal Printing has handled the office duties of the Houston Geological Society. Recently, Cardinal relocated its office from 234 Esperson Building to Suite 6-1, 806 Main Street. Their phone number remains the same, 223-9309. Cardinal receives and helps process membership applications; addresses and mails the *Bulletin*; packages and mails out HGS publications; receives phone reservations for the monthly meetings; mails out tickets to social functions; takes registrations for continuing education programs; and maintains the membership roster, just to name some of the more important jobs they do for the HGS.

Just so you know, the J W Marriott Hotel now exists at that same address (Ste 6-1, 806 Main Street) (<http://www.marriott.com/hotels/travel/houdj-jw-marriott-houston-downtown/>). Another Google link has a less flattering view of the building.

In June, 1980, the HGS had a new office address (and the one I first remember) on Ashcroft (Four Star Printing, near Bellaire and Hillcroft). The new telephone number was 771-8315. HGS still did not have recognized paid staff. According to the President's letter, "...Cardinal's demise necessitated new, more expensive provisions for handling HGS business. These forced on the Executive Board the unwelcome task of recommending a dues increase." Given the Bylaws I think that dues went from \$10.00 to \$12.00. HGS received a whopping \$10,000 from AAPG for the 1979 convention held in Houston. In November of 1982 HGS added an alternate telephone line (713-771-5421) "...the HGS telephone goes on the blink usually just before reservations are due. In the event you encounter a busy signal for a long period of time..."

On a side note, the first two undergraduate scholarships were awarded in 1985; more on that in a future Look Back in Time.

September, 1988 found HGS at a new office location (effective August 1). Four Star Printing was still around (and is still around today), but HGS had outgrown its available space. The new address was 7171 Harwin, Suite 314, Houston, Texas 77036. The telephone number was 713-785-6402. Margaret Blake was the first office secretary and manager for HGS. She came from Four Star Printing when HGS claimed its new office space.

Between November and December, 1996 the HGS moved to 7457 Harwin, Suite 301. The telephone number and five-digit zip code

A Look Back in Time continued on page 51

9<sup>TH</sup> ANNUAL

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# AAPG

## Fall Education Conference 2014

November 10-23, 2014 - Houston, Texas

# Upcoming Education Courses

## SHORT COURSES

Practical Salt Tectonics

**Dec. 8-11, 2014**  
Houston, TX

Unconventionals Update (with IPTC meeting)

**Dec. 8-9, 2014**  
Kuala Lumpur, Malaysia

## FIELD SEMINARS

Unconventional Petroleum Systems Field Trip  
(with SEG meeting)

**Oct. 25-26, 2014**  
Colorado

## E-SYMPOSIA

Concepts of Scale: Horizontal Development  
of Wolfcamp Shale Oil of the Southern Midland Basin

**Oct. 2, 2014**  
2:00 pm, CDT

Kerogen Maturity Determinations:  
New Techniques and Technologies

**Oct. 30, 2014**  
10:00 am, CDT

## ONLINE CERTIFICATE COURSES

Biomass Energy Basics: A Renewable Energy Certificate Course  
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# AAPG

Education

remained the same. *The upside to this move was that the HGS Board now had a permanent place to hold its meetings. Previously the Board had met at various company offices.* Margaret Blake retired in December 1996 and was replaced by Joan Henshaw in January of 1997. Annette Mather started volunteering at the office in 1991, eventually taking on the responsibilities for *Bulletin* advertising and member rolls. Annette reported that she got her first HGS pay check in 1997!

(These last two addresses place the offices north of US-59, between Hillcroft and Fondren. This was one of the more “scenic” parts of town as I recall.)

The December, 2001 *Bulletin* recorded that HGS had moved again, the new address being near Town & Country at 10575 Katy Freeway, Suite 290, Houston, TX 77024 with a new phone number pending. The building is still in use, but you would be hard pressed to remember the surrounding environs given the significant development that has taken place there at City Centre. (<https://www.google.com/maps/place/10575+Katy+Fwy/@29.783256,-95.560346,17z/data=!3m1!4b1!4m2!3m1!1s0x8640c4b496be010f:0x731fbd2f6795974d>)

The January, 2002 *Bulletin* included a new telephone number (713-463-9476) and included a fax number for the first time! The President’s column highlighted the move, so most likely the actual shift occurred in November, 2001. Joan Henshaw was still the office Manager and Annette Mather took care of *Bulletin* advertising. Annual dues were \$20.00.

During the time at the Katy Freeway location, the HGS had additional staff members. Dave Crane served as webmaster (Summer 2004- September 2005) and Nancy Frye helped out at the office. Lilly Hargrave replaced Annette Mather in September, 2003 as *Bulletin* Advertising coordinator. Annette volunteered or worked for HGS for 12 years. She has been recognized by both the HGA (now the HPAC) and HGS with the Distinguished Service and Honorary Life Membership awards. Lilly later served as HGS webmaster (replacing Dave Crane).

The HGS moved to its current address at 14811 St Marys Lane (Ste 250, Houston, TX 77079) in January of 2007. The office telephone number remained the same. Joan and Lilly still handled office duties and continued to split time between HGS and GSH. Joan Henshaw’s retirement in February, 2007 resulted in the hiring of

Sandra Babcock as Office Director. Joan was employed by HGS for just over 11 years. Lilly left HGS employment in the summer of 2010, after working for HGS and GSH for seven years. Gabriela Henriquez joined HGS in the fall of 2010, taking over duties as webmaster and *Bulletin* advertising coordinator.

In March of 2011, as part of a revised strategic plan, HGS reached the decision that it would be better served by having its own dedicated staff. The end result of this was the separation of the HGS and GSH offices. HGS moved “around the corner” to a larger space in the same building in the summer of 2012, but kept all of the address and phone information that had been used by both societies for their office. Sandra Babcock added the *Bulletin* advertising coordinator duties to her list in September, 2011. Gabriela Henriquez left HGS in October, 2011. Katherine Sanvido became the HGS web master in January, 2012 but seems to have left by September.

Nina Hoeny became Office Manager and Advertising Coordinator in June of 2012, replacing Sandra Babcock. Jill Kimble joined HGS in April, 2013 as Administrative Assistant. Troy Fearnow became the HGS webmaster in April, 2013.

Over the summer of 2013, Sandra Babcock returned to serve as HGS Office Director. Nina Hoeny retired for health reasons.

Here we are today, 57 years, eight physical locations, six telephone numbers, and thirteen employees later:

14811 St Marys Lane  
Ste 250  
Houston TX 77079  
713-463-9476  
Sandra Babcock, Office Director  
Jill Kimble, Advertising Editor  
Troy Fearnow, Webmaster

Dues are now \$28.00; it costs from \$30.00 to \$50.00 for a meal at many technical meetings; HGS has its own website; and membership once again surpassed 4,000. (Unfortunately, with slow dues renewals, this number is about 50% lower as I write this article in August.) Not bad for an organization that is 91 years old!

Until the next Look Back. ■

# Directory of Oil Company Name Changes

24<sup>th</sup> Edition (April 2014)

## New Edition

A new 24th edition, of the HGS publication, "Directory of Oil Company Name Changes," is now available through the Bureau of Economic Geology. This publication is a cross-referenced list of domestic oil and gas, exploration and production companies that have sold major assets or have changed their names due to a merger, acquisition or reorganization. The purpose of this directory is to provide an oil company road map that may assist geologists in tracking down logs, samples, test information, cores, paleo, drilling reports, production histories and other well data that may be obscured by these numerous name changes.

The cost of the directory is \$20.00 and it can be obtained from the BEG.

The contact information is as follows:

Bureau of Economic Geology

University of Texas in Austin

Attn: Publication Sales

University Station, Box X

Austin, Texas 78713-8924

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## Government Update

by Henry M. Wise, P.G. and Arlin Howles, P.G.

*If you'd like the most up-to-date Texas rules, regulations, and governmental meeting information we direct you to the HGS website to review The Wise Report. This report, which comes out as needed but not more often than once a week, offers the most up-to-date information that may be of interest to Texas geologists.*

### **TCEQ Remediation Division Issues Revised Guidance and Report Form for Groundwater Monitoring for Leaking Petroleum Storage Tank (LPST) Sites.**

The Texas Commission on Environmental Quality (TCEQ) Remediation Division issued revised guidance for groundwater monitoring and reporting requirements for LPST sites. The groundwater monitoring and reporting document formerly known as RG-43, Groundwater Monitoring and Reporting, has been renamed and is now known as RG-523/PST-06, Groundwater Monitoring and Reporting for LPST Sites.

The Monitoring Event Summary and Status Report (Form TCEQ-0013) used in conjunction with the guidance has also been revised and renamed Groundwater Monitoring Report (Form TCEQ-00013). The report form is required when reporting results from groundwater monitoring activities at LPST sites.

Beginning January 1, 2015 all previous versions of the form will be considered obsolete and will no longer be accepted.

The guidance and report form is now interactive and available on the TCEQ webpage: [http://www.tceq.state.tx.us/remediation/pst\\_rp/downloads.html#IOM](http://www.tceq.state.tx.us/remediation/pst_rp/downloads.html#IOM)

### **More TCEQ News**

The TCEQ Remediation Division is in the process of revising its LPST guidance documents. As the revisions are completed, new Regulatory Guidance (RG) numbers will be assigned to the documents. Therefore, in the near future, all LPST guidance documents will be under RG-523.

Further updates will be provided as guidance documents are revised and made available for distribution. For questions, please contact the PST Program at 512-239-2201 or e-mail at [PSTRPR@tceq.texas.gov](mailto:PSTRPR@tceq.texas.gov)

### **AGI Geoscience Policy Monthly Review (June, 2014)**

#### **Senate Questions NRC Officials over Post-Fukushima Safety Recommendations**

On June 4, 2014 the Senate Committee on Environment and Public Works held a hearing to question Nuclear Regulatory Commission (NRC) officials on their progress implementing 12 safety recommendations put forth in 2011 by the Fukushima Near-Term Task Force. The recommendations included

guidelines for improving regulation, emergency preparedness, and protection against natural disasters.

Witnesses included NRC Chair Allison Macfarlane and several NRC commissioners, who were confident in the NRC's progress in maintaining safety and enacting proactive regulations after Fukushima. Nonetheless, Senator Barbara Boxer (D-CA), Chair of the committee, firmly pursued questioning implying that none of the 12 recommendations had been sufficiently implemented, and that no new safety standards had been enacted since the Fukushima incident. Sen. Boxer further questioned NRC officials concerning the decommissioned San Onofre nuclear power plant in southern California, which was threatened by a recent wildfire.

Sen. Boxer stressed the urgency of updating safety standards and called for increased transparency, faster risk assessment, and more robust NRC leadership. Despite the safety risks, both committee members and witnesses recognized the vital role that nuclear power could play in President Obama's Climate Action Plan to cut carbon emissions by 30 percent by 2030.

### **House Subcommittee Passes Energy and Water Appropriations Bill with Bipartisan Support**

The House Appropriations Subcommittee on Energy and Water Development held a markup of their fiscal year (FY) 2015 appropriations bill, which allocates a total of \$34 billion for the Department of Energy (DOE), the Army Corps of Engineers, and other related agencies. The bill includes \$50 million less than FY 2014, but \$327 million more than the President's FY 2015 request.

Within DOE, the bill allocates \$593 million for fossil fuel energy development, approximately \$31 million more than FY 2014 and \$1.8 billion for renewable energy, approximately \$113 million less than FY 2014. The bill supports the Yucca Mountain nuclear repository, allocating \$150 million for the Nuclear Waste Disposal program. The bill also provides \$5.1 billion for basic science research, the same as last year.

Subcommittee leadership applauded the bipartisan approach in crafting the bill, though party disagreements were still apparent. Full Committee Chairman Hal Rogers (R-KY) argued that the Obama administration's energy and environmental regulations are overreaching and hurt American jobs, while Subcommittee

**Government Update** continued on page 55



# HGS Welcomes New Members

## New Members Effective August 2014

### ACTIVE MEMBERS

Corey Barton  
Thomas Bath  
Irion Bordelon Jr  
Gregory Bowen  
Dave Dalley  
David Dyer  
Gloria Eisenstadt  
James Gallazzo  
John Harding  
Victor Iliescu  
Michael Kohl  
Johan Kusumanegara  
Cody Lewis  
Carlos Macellari

Suvimol Maingarm  
Christopher Matthews  
Erin McGuire  
Brandon Okafor  
Onochie Okonkwo  
Aaron Payan  
Daniel Ragona  
Kevin Schmidt  
Kirellos Sefein  
Ali Sloan  
Jessica Vahling  
John Van Horn  
Morgan Warren  
Gregory Way

### ASSOCIATE MEMBERS

Patrick Arens  
Garrett Avery  
Alfonso Escobar  
David Mungo  
Ryan Yarrington

### EMERITUS MEMBERS

Louis Berent  
Dwight Cassell  
Marc Edwards  
Robert Hubbell  
John Knox II  
Virgil Kraus  
Carl Marrullier

Kenneth Marx  
Robert McHam  
James Rogers  
John Theodore (Ted)  
Schulenberg  
Bennie See  
Ron Tisdale  
John Worthen

### STUDENT MEMBERS

Stephanie Erickson  
Elizabeth Finley  
Marie Pope  
Divyendu Tripathi

*Welcome New Members*

## Lower Tuscaloosa Trend: Request for Information

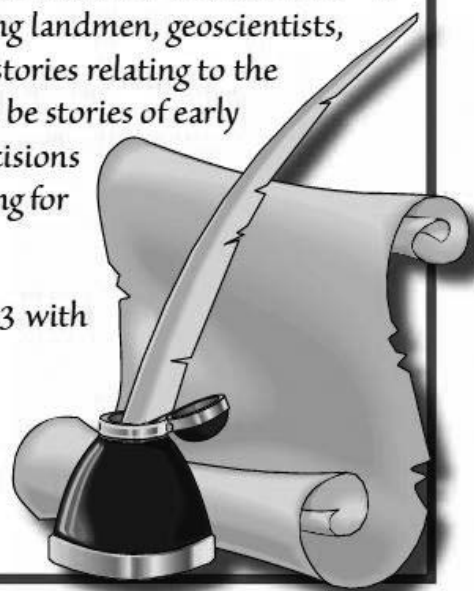
I am the Historian for the Gulf Coast Association of Geological Societies (GCAGS). My current history project is a 40th anniversary paper, or possibly a more ambitious publication, on the Lower Tuscaloosa Trend of South Louisiana.

This project will not be a technical paper, but instead a collection of "recollections" of those who worked the trend in the early days. I am contacting landmen, geoscientists, engineers, and others, soliciting a few paragraphs or pages of stories relating to the early exploration and discoveries within the trend. These can be stories of early well-sitting, key events, seismic activity, leasing, important decisions at meetings, technological breakthroughs, etc. I am also looking for photographs and newspaper articles.

Please contact me at [spencerj320@gmail.com](mailto:spencerj320@gmail.com) or 281-731-5823 with any questions or if you can help with this endeavor.

All the best,

Jeff Spencer



Ranking Member Marcy Kaptur (D-OH) was disappointed with the Clean Water Act riders in the bill.

The bill has since passed the House Appropriations Committee and the House Rules Committee with a modified open rule.

### **President Obama Proposes World's Largest Marine Sanctuary in South Pacific**

On June 16, 2014 President Obama announced his commitment to expand federal protection of the ocean near the Pacific Remote Islands Marine National Monument in the southern Pacific Ocean. The area contains coral reefs and associated ecosystems that are vulnerable to the effects of climate change and ocean acidification. The proposal would make it the world's largest marine sanctuary, doubling the global amount of fully protected ocean.

The move has garnered criticism from some Republican lawmakers, including Representative Doc Hastings, who argue that the expansion signifies extreme federal overreach that will restrict valuable economic activities such as recreation, fishing, and energy production.

The Obama administration will be seeking input from fishermen, scientists, conservationists, and other stakeholders as they determine the details of the expansion and its geographic scope. The proposal is part of an ongoing effort to promote marine conservation in U.S. and international waters.

### **USGS Nominee Clears Senate Committee on Energy and Natural Resources**

The Senate Energy and Natural Resources Committee cleared the nomination of Dr. Suzette Kimball as Director of the U.S. Geological Survey (USGS) in a business meeting on June 18, 2014. The nomination cleared the committee by unanimous voice vote.

Senator Joe Manchin (D-WV) expressed his approval of the work Dr. Kimball has done in her capacity as Acting Director of USGS since 2013, and signaled his support for the nomination. Dr. Kimball testified before the committee at a hearing held May 13, 2014 and affirmed her commitment to the role of USGS in providing science to support public health and safety, and sustainable, resilient, communities.

The nomination will move to the full Senate for further consideration.

House committee examines earthquake early warning system  
On June 10, 2014 the House Natural Resources, Energy and Mineral Resources Subcommittee held a hearing to examine the development of an earthquake early warning system in the

U.S. Witnesses representing academia, government, and local transportation agencies all spoke to the potential benefits of implementing an early warning system.

Dr. Douglas Toomey of the University of Oregon reported that the infrastructure for an expanded, fully implemented system already exists, and that data from preexisting seismic stations could afford communities precious seconds or even minutes of warning, giving people time to halt transportation, stop surgeries, and evacuate buildings. For example, Dr. Toomey estimates that, for an earthquake occurring in northern California, sensors could provide up to three minutes of warning to Portland, Oregon and five minutes of warning to Seattle, Washington. Dr. Toomey further explained that placing seabed sensors near the Cascadia Subduction Zone would help safeguard the Pacific Northwest against earthquakes and tsunamis.

ShakeAlert, an early warning system already being tested in California, detects the initiation of earthquakes, estimates their location and magnitude, and provides from seconds to minutes of warning to local populations. Many other nations, including Japan, Mexico, and Romania have earthquake alert systems in place to prevent casualties, protect infrastructure and industry, and reduce emergency spending.

In the last decade, federal funding for earthquake early warning has averaged \$1 million dollars per year. Although subcommittee members had differing views on potential funding sources, all expressed interest in strengthening and expanding the program.

### **NASA Plans Mission to Redirect Asteroid for Study**

NASA is asking the public for help in identifying asteroids suitable for study in its Asteroid Redirect Mission (ARM), with the goal of "capturing" an asteroid with a robotic spacecraft, redirecting it to orbit the moon, and ultimately sending astronauts to study it.

The mission aims either to capture fully an asteroid less than 10 meters in diameter or to collect a sample from a larger asteroid. NASA plans to determine which asteroid to redirect in 2018 and to launch the ARM robotic spacecraft in 2019.

The effort is an early element of the agency's Path to Mars program, with the aim of human exploration of the planet. In addition to helping NASA prepare for exploration of Mars, the agency has stated that increased asteroid research will help to ensure Earth's safety from potential asteroid impacts.

The invitation for public help and participation, called the Asteroid Grand Challenge (AGC), was announced in June, 2013 and is one of several Grand Challenges instigated by the President

**Government Update** *continued on page 57*

# Remembrance

## L. BRUCE FORNEY



L. BRUCE FORNEY passed away June 11, 2014 at the age of 89. Bruce was a member of the Houston Geological Society for 61 years. His accomplishments as an exploration geologist were conducted in 14 states and 3 foreign countries.

Bruce graduated with a B.S. in Petroleum Engineering from Texas A&M College in 1948 and worked with Schlumberger out of the Houston District office before earning a M.S. in Geology from the University of Houston in 1951.

Bruce began his extraordinary career as an exploration geologist with SOHIO in Lafayette, LA. Bruce thoroughly enjoyed working South Louisiana, not only because of the technical challenges of the area's geology and topography, but also because of the local Cajun culture and its compelling cast of characters attracted to the romance of the oil and gas business. Bruce helped found the Lafayette Geological Society in 1952, along with fellow SOHIO employee Jesse George (LGS's first Chairman). Bruce was instrumental in discoveries at NE Bayou Blue, Grosse Tete, Tambour, Washington, White Castle, NW Eagan and North Crowley fields, before moving back to Houston where he made a discovery at Taylor Bayou and supported the development of Decker Prairie and Kountz fields.

Bruce moved over to the small independent side of the business in 1957 with P. R. Rutherford Oil Company. Discoveries with Rutherford included locations at North Clemens, St. Amelia, Bayou Felice, Bayou Black, Hollywood, South Gueydan, Fagen Ranch, and Baker Ranch fields.

Bruce received his first international exposure in 1970 when he joined Roy M. Huffington at HUFFCO as Vice President of Exploration. HUFFCO had recently negotiated a production sharing contract with Pertamina covering the Mahakam River Delta in East Kalimantan, Indonesia. This Kutai Basin exploration project proved to be a monumental undertaking. Exploration efforts were initiated by painstaking field mapping and then graduated to seismic surveys. Logistics and communications were challenging, and the vast, undeveloped lowland rainforests and swamps of the area required that all operations be mobilized by helicopter.

Three large anticlinal structures were initially identified. Open-hole logs for the first exploratory well were run to total depth in January of 1972 and identified a major discovery with 1,147' of net pay and no hydrocarbon/water contact. Two subsequent delineation wells drilled three miles to the north and south still did not encounter a water leg. Unfortunately, the discovery was mainly gas and at the time there was no market for natural gas in the region. Extensive negotiations for selling the gas production were all but exhausted until the world markets dramatically changed with the Arab embargo of October 1973 and the Japanese then eagerly agreeing to the financing of the remote LNG plant in return for the related product deliveries.

This discovery, known as Badak Field, later proved to have an EUR of over 7 Tcf of gas, 130 MMbbls of condensate and 60 MMbbls of oil. Badak Field preceded HUFFCO's offset discoveries of Nilam, Semberah and Bingintelok fields.

Bruce's next move was in 1975 to Tulsa, Oklahoma to work with Williams Exploration as Vice President of Exploration and Production. Discoveries at Williams included the Mecom Ranch, North Creole and East Cameron Block 1 fields on the Louisiana Gulf Coast, as well as a number of discoveries in Wyoming.

Bruce returned to Houston in 1980 to take on the position of President of Prairie Producing Company. Bruce successfully built the company and took it public in April of 1981. A string of discoveries then followed at Ginger, Lake Fork, Breton Sound and West Starks fields. Prairie was later sold to Unocal in 1990, at which time Bruce retired from his positions as President and CEO to pursue personal ventures. ■

~ by Larry Forney



*Sacrificed ox's head being buried at the Huffco Badak #1 wellsite prior to spud-- for good luck. Kalimantan (Kutai Basin), Indonesia, 1971. Photo by L. Bruce Forney.*

*Should you hear of a fellow HGS member's or contributor's passing, please send information to the Editor-Elect at [jonblackwede@gmail.com](mailto:jonblackwede@gmail.com).*

through the Office of Science and Technology Policy. These challenges aim to foster new collaborative partnerships in the promotion and advancement of numerous scientific disciplines. Other Grand Challenges include calls for new ways to treat brain disorders, improvements in solar energy production, and creation of a more affordable electric car.

#### **House Hearing on the Future of Human Space Exploration and the Path to Mars**

On June 25, 2014 the House Committee on Science, Space, and Technology held a full committee hearing on the future of space exploration and NASA's goal of landing humans on Mars. Former Indiana Governor and President of Purdue University Mitch Daniels and Dr. Jonathan Lunine, Director of Cornell University's Center for Radiophysics and Space Research, provided testimony based on the report they co-authored outlining approaches for a U.S. human space exploration program.

Committee members from both parties stated support for a new NASA space exploration program and the technological growth and inspiration it would generate. The members expressed concern over the viability of the Asteroid Retrieval Mission, since it does not yet have a budget or destination. The witnesses acknowledged that extended surface exploration of the Moon would provide more useful information for a manned mission to Mars than asteroid retrieval. They also addressed the committee's doubts regarding international partnerships, including concerns over foreign policy differences and intellectual property rights. Both witnesses identified past successes in international collaboration, and cautioned that getting to Mars without international collaboration would be a daunting task.

The witnesses explained that lawmakers need to come to consensus on a single plan, and they emphasized the importance of sustained increase in funding in order to make a long-term

investment in scientific research. They also called on Congress to foster the cultural change essential to providing bipartisan support for the space exploration program over multiple administrations and congressional sessions. In closing, Gov. Daniels stated that "this could be one of those subjects ... on which people who disagree strongly and sincerely about other things could agree."

#### **Proposed Changes to Clean Water Act Spark Controversy**

Proposed changes to the Clean Water Act have prompted criticism from stakeholders and politicians on both sides of the aisle. This June, the Environmental Protection Agency (EPA) and the Army Corps of Engineers proposed a rule to clarify what types of water fall under the protection of the Clean Water Act. In the current definition, "waters of the U.S." include navigable, commercial waterways and their tributaries and associated wetlands, allowing for broad interpretations that can prompt controversy.

More than 200 congressmen from both parties have voiced opposition, saying the ruling extends regulatory jurisdiction too far. Farmers, developers, and other stakeholders have expressed concern that the rule will threaten property rights and increase federal control.

EPA Deputy Administrator Bob Perciasepe has stated that much of the controversy is based on misinformation, denying allegations that the rule would regulate dry washes, entire floodplains, or agricultural and roadside ditches. The EPA has stated that the proposed change does not protect any waters not already included in the Clean Water Act.

The EPA is requesting comments on the proposed rule. The comment period for stakeholders has been extended through October 20, 2014. For more information go to: <http://www2.epa.gov/uswaters> ■

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## HGS *Bulletin* Instructions to Authors

All materials are due by the 15th of the month, 6 weeks before issue publication. Abstracts should be 500 words or less; extended abstracts up to 1000 words; articles can be any length but brevity is preferred as we have a physical page limit within our current publishing contract. All submissions are subject to editorial review and revision.

**Text** should be submitted by email as an attached text or Word file or on a clearly labeled CD in Word format with a hardcopy printout to the Editor.

**Figures, maps, diagrams**, etc., should be digital files using Adobe Illustrator or Adobe Photoshop. Files should be saved and submitted in .ai, .eps, .tif or .jpg format. Send them as separate attachments via email or CD if they are larger than 5 MEGs each, accompanied by figure captions that include the file name of the desired image. DO NOT EMBED them into your text document; they must be sent as separate files from the text. DO NOT USE POWERPOINT, CLIP ART or Internet images (72-DPI resolution) as these do not have adequate resolution for the printed page and cannot be accepted. All digital files must have 300-DPI resolution or greater at the approximate size the figure will be printed.

**Photographs** may be digital or hard copy. Hard copies must be printed on glossy paper with the author's name, photo or figure number and caption on the back. Digital files must be submitted in .tif, .jpg or .eps format with 300-DPI or greater resolution at the printing size and be accompanied by figure captions that are linked by the file name of the image. The images should be submitted as individual email attachments (if less than 5 MB) or on CD or DVD.

## Advertising

The *Bulletin* is printed digitally using InDesign. Call the HGS office for availability of ad space and for digital guidelines and necessary forms or email [jill@hgs.org](mailto:jill@hgs.org). Advertising is accepted on a space-available basis. **Deadline for submitting material is 6 weeks prior to the first of the month in which the ad appears.**

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| 10  | \$823              | \$1,387             | \$2,488          | \$4,734          | \$7,830                          | \$7,560                     | \$7,384          | \$6,858                      | \$6,750                    | \$2,700               |
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| 5   | \$497              | \$837               | \$1,503          | \$2,860          | \$4,698                          | \$4,536                     | \$4,466          | \$4,104                      |                            |                       |
| 4   | \$405              | \$683               | \$1,223          | \$2,326          |                                  |                             |                  |                              |                            |                       |
| 3   | \$327              | \$550               | \$990            | \$1,886          |                                  |                             |                  |                              |                            | \$1,080               |
| 2   | \$232              | \$392               | \$704            | \$1,339          |                                  |                             |                  |                              |                            |                       |
| 1   | \$146              | \$246               | \$443            | \$842            | \$1,404                          | \$1,296                     | \$1,313          | \$1,080                      | \$1,296                    | \$810                 |
| Professional Directory Section Business Card Ad<br>10 Issues – \$160 (\$30 for each additional name on same card) |                    |                     |                  |                  |                                  |                             |                  |                              |                            |                       |

## Website Advertising Opportunities

HGS has multiple website advertising opportunities for your company! We've expanded our offerings to include a 275 x 800 pixel, rotating banner ad on the front page of the website. We have kept the popular Event Calendar and Geo-Job Postings advertisement locations!

|          | Home page<br>Banner | Home Page<br>(200 x 400 pixels) | Event Calendar<br>(200 x 400 pixels) | Geo-Jobs<br>(120 x 90 pixels) | Website Business Card<br>(Members Only) | Personal Resumes<br>(Members Only) |
|----------|---------------------|---------------------------------|--------------------------------------|-------------------------------|---|------------------------------------|
| One year | \$3,000.00          | \$2,800.00                      | \$2,500.00                           | \$1,400.00                    | Free                                    | Free                               |
| 6 months | \$2,000.00          | \$1,800.00                      | \$1,500.00                           | \$750.00                      | Free                                    | Free                               |
| 3 months | \$1,500.00          | \$1,300.00                      | \$1,000.00                           | \$450.00                      | Free                                    | Free                               |
| Monthly  | \$700.00            | \$500.00                        | \$400.00                             | \$200.00                      | Free                                    | Free                               |

We still offer Geo-Jobs - where your company can post job openings for 14 days at \$50.00 or 30 days at \$100.00.

For more information regarding website advertising visit [HGS.org](http://HGS.org) or email [jill@hgs.org](mailto:jill@hgs.org).



# Application to Become a Member of the Houston Geological Society

## Qualifications for Active Membership

- 1) Have a degree in geology or an allied geoscience from an accredited college or university; or
- 2) Have a degree in science or engineering from an accredited college or university and have been engaged in the professional study or practice of earth science for at least five (5) years.

## Qualifications for Associate Membership (including students)

- 1) Be involved in the application of the earth or allied sciences.
- 2) Be a full-time student enrolled in geology or in the related sciences.

## Apply online at [www.hgs.org](http://www.hgs.org) and click on Join HGS

**Annual Dues Expire Each June 30. (Late renewals – \$5 re-instatement fee)  
Annual dues are \$28.00; emeritus members pay \$14.00; students are free.**

Mail this application and payment to:

*Houston Geological Society*

14811 St. Mary's Lane, Suite 250 • Houston, TX 77079-2916

Telephone: 713-463-9476 Fax: 281-679-5504

Payment method:

☐ Check, ☐ VISA, ☐ MasterCard, ☐ American Express, ☐ Discover

Card # \_\_\_\_\_

Expiration Date: \_\_\_\_\_ Card I.D. \_\_\_\_\_

(Card I.D. – 3 or 4 digit number on front or back of card)

*To the Executive Board:* I hereby apply for ☐ Active or ☐ Associate membership in the Houston Geological Society and pledge to abide by its Constitution and Bylaws. ☐ Check here if a full-time student.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Home Phone: \_\_\_\_\_ Spouse's Name: \_\_\_\_\_

Email: \_\_\_\_\_

Job Title: \_\_\_\_\_

Company: \_\_\_\_\_

Company Address: \_\_\_\_\_

Work Phone: \_\_\_\_\_ Fax Number: \_\_\_\_\_

Circle Preferred Mailing Address: Home Office

Professional Affiliations: \_\_\_\_\_

☐ AAPG member No.: \_\_\_\_\_

Professional Interest:

☐ Environmental Geology ☐ North American E&P (other than Gulf Coast)

☐ International E&P ☐ Gulf Coast E&P (onshore & offshore)

School \_\_\_\_\_

Degree \_\_\_\_\_ Major \_\_\_\_\_ Year \_\_\_\_\_

School \_\_\_\_\_

Degree \_\_\_\_\_ Major \_\_\_\_\_ Year \_\_\_\_\_

Earth Science Work Experience \_\_\_\_\_

Applicant's Signature \_\_\_\_\_ Date \_\_\_\_\_

Endorsement by HGS member (not required if active AAPG member)

Name: \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Membership Chairman \_\_\_\_\_ HGS Secretary \_\_\_\_\_

# Houston Petroleum Auxiliary Council News

Janet Steinmetz, 281-531-7204

## To All Spouses Of Geologists, Geophysicists, Landmen, And Engineers!

**(Attention All Husbands! Please Share This Article With Your Wife)**

You are invited to join HPAC, an organization especially designed for you. Under the leadership of Sally Blackhall, the new officers have been working diligently to prepare another exciting, entertaining and informative year. Events include luncheons, speakers, game day, fashion show, bridge groups, book club, bus tours and more. Let us know what interests you; we're always open to new ideas.

On October 24 the **HPAC Exploring Group** will be continuing its study of the History of the Offshore Petroleum Industry on our Fall bus tour. Last April, we toured the Ocean Star offshore platform rig museum in Galveston. The special exhibit currently at the George Bush Library in College Station is about the role of George H.W. Bush in the development of the jack-up rig Scorpion during his time as CEO of Zapata Oil and Gas. The exhibit covers all aspects of the offshore search for oil, with a special look at the geology and exploration of the Gulf of Mexico. After lunch we will visit another special place in Bryan-College Station – Messina Hof Winery. After a tour of the facilities and an explanation of wine making we will have the opportunity to sample the product. Both places have very nice shops so we should not come back empty handed. We will meet at Memorial Drive Presbyterian Church at 8:30 and return about 5:45. Reserve your spot on the bus by sending a check for \$34. This fee includes entrance fees, tours, and lunch. Please make check out to HPAC and mail to **Martha Lou Broussard**, 33361 Bellefontaine, Houston 77025 by October 17. Guests are welcome. This will be a popular trip, so sign up early (space may be limited). For more information call Martha at 713-665-4428.

On November 3 the **Book Club** will discuss *The Boys in the Boat: Nine Americans and their Epic Quest for Gold at the 1936 Olympics* by Daniel Brown. Please call **Mickey Murrell** 281-469-2272 for details, and be ready for a lively exchange of ideas. Upcoming books to be discussed include *Mrs. Lincoln's Dressmaker* by Jennifer Chiaverini, *Goldfinch* by Donna Tartt, and *Invention of Wings* by Sue Monk Kidd.

## HPAC also has two Bridge Clubs:

**Cinco Mas Bridge Group** – Meets second Thursdays at Westchase Marriott. Contact: **Audrey Tompkins** at 713-686-0005

**Petroleum Club Bridge Group** — Meets third Wednesdays (except in December) at the Petroleum Club – Cost: \$30 (includes valet parking & lunch) Contact: **Daisy Wood** at 832-581-3231 or daisymallia@comcast.net

In September our year started off with a bang. Everyone enjoyed the excellent luncheon at the newly-renovated Lakeside Country Club. Dr. Haresh Yalamanchili, a facial plastic surgeon from the Belage Center, shared the new techniques available in facial and neck surgery. He discussed some non-invasive techniques to improve our looks and self-images. He gave us something to think about. Kudos to the committee chaired by **Mickey Murrell, Wanda Shaw, and Sheri McQuinn**.

## Mark your Calendars for Future Luncheons:

On **December 15 Elvis!** will entertain us at our luncheon at the Junior League. You don't want to miss this unprecedented event. **Shirley Gordon** will co-chair this event with **Judy Johnson** and **Janet Steinmetz**.

**Celebrate St. Patrick's Day**, March 17, with Game Day at the Braeburn Country Club. **Daisy Wood** and her committee always put on a first-class party.

**Kathi Hilterman** will head up the committee planning the **May 14 Annual Style Show and Luncheon** at Maggiano's Little Italy. Fashions will be furnished by "It's All About You".

In addition, our members are always available to assist HGS in any way we can. If you want to help, please let me know (**Janet Steinmetz**, 281-531-7204).

To join HPAC please complete the membership form on the next page and return to **Susan Bell**, 11431 Legend Manor, Houston, TX 77082. Include your name, address, telephone number, email address, and check for \$20. You'll be glad you did. We look forward to your participation. ■

You are invited to become a member of

# HPAC

2014–2015 dues are \$20.00 Mail dues payment along with the completed information

to **Susan Bell** • 11431 Legend Manor • Houston, Texas 77082


## YEARBOOK INFORMATION

|                |                       |                    |
|----------------|-----------------------|--------------------|
| Last Name      | First Name            | Name Tag           |
| Spouse Name    | Company               |                    |
| Street Address | City State            | Zip                |
| Email Address  | Home Fax              |                    |
| Home Phone     | Cell Phone (Optional) | Home Email Address |

Please choose a committee assignment if you are interested.

- |  |  |                                       |                                     |
|--|--|---------------------------------------|-------------------------------------|
| <input type="checkbox"/> Fall Event      | <input type="checkbox"/> Yearbook          | <input type="checkbox"/> Bridge       | <input type="checkbox"/> Membership |
| <input type="checkbox"/> Christmas Event | <input type="checkbox"/> Spring Event      | <input type="checkbox"/> Notification | <input type="checkbox"/> Book Club  |
|  | <input type="checkbox"/> Exploring Houston | <input type="checkbox"/> Courtesy     |                                     |

## Professional Directory

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| <p><b>Millennium GeoScience</b><br/>Geological and Geotechnical Services for Petroleum &amp; Mining</p> <p><b>Craig Byington</b><br/>Licensed Professional Geologist, Registered "Qualified Person", Geotechnical Engineer</p> <p>Specializing in structural geology</p> <p><b>Millennium GeoScience</b><br/>(406) 558-9064<br/>cbbyington@mgeoscience.com<br/>www.mgeoscience.com<br/>20 Lost Tr., Clancy, MT 59634</p> | <p><b>Rose &amp; Associates</b></p> <p><b>Gary P. Citron, Ph.D.</b><br/>Managing Partner<br/>garycitron@roseassoc.com</p> <p>4203 Yoakum Blvd., Suite 320<br/>Houston, TX 77006<br/>United States of America<br/>713-528-8422<br/>713-528-8428 fax<br/>www.roseassoc.com</p> <p>Transferring E &amp; P Risk Assessment Expertise<br/>Instruction • Software Tools • Practical Consulting</p> | <p>Website • Brochure<br/>Ad • Logo • Catalog<br/>Newsletter Design</p> <p><b>Lisa Krueger Design</b><br/>Design and Art Direction for Print and Web<br/>LisaKruegerDesign.com<br/>713.664.7267</p>  |
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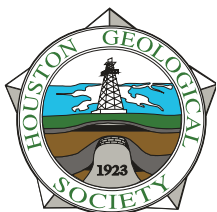
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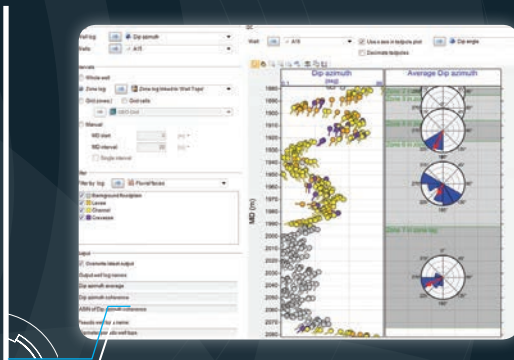


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