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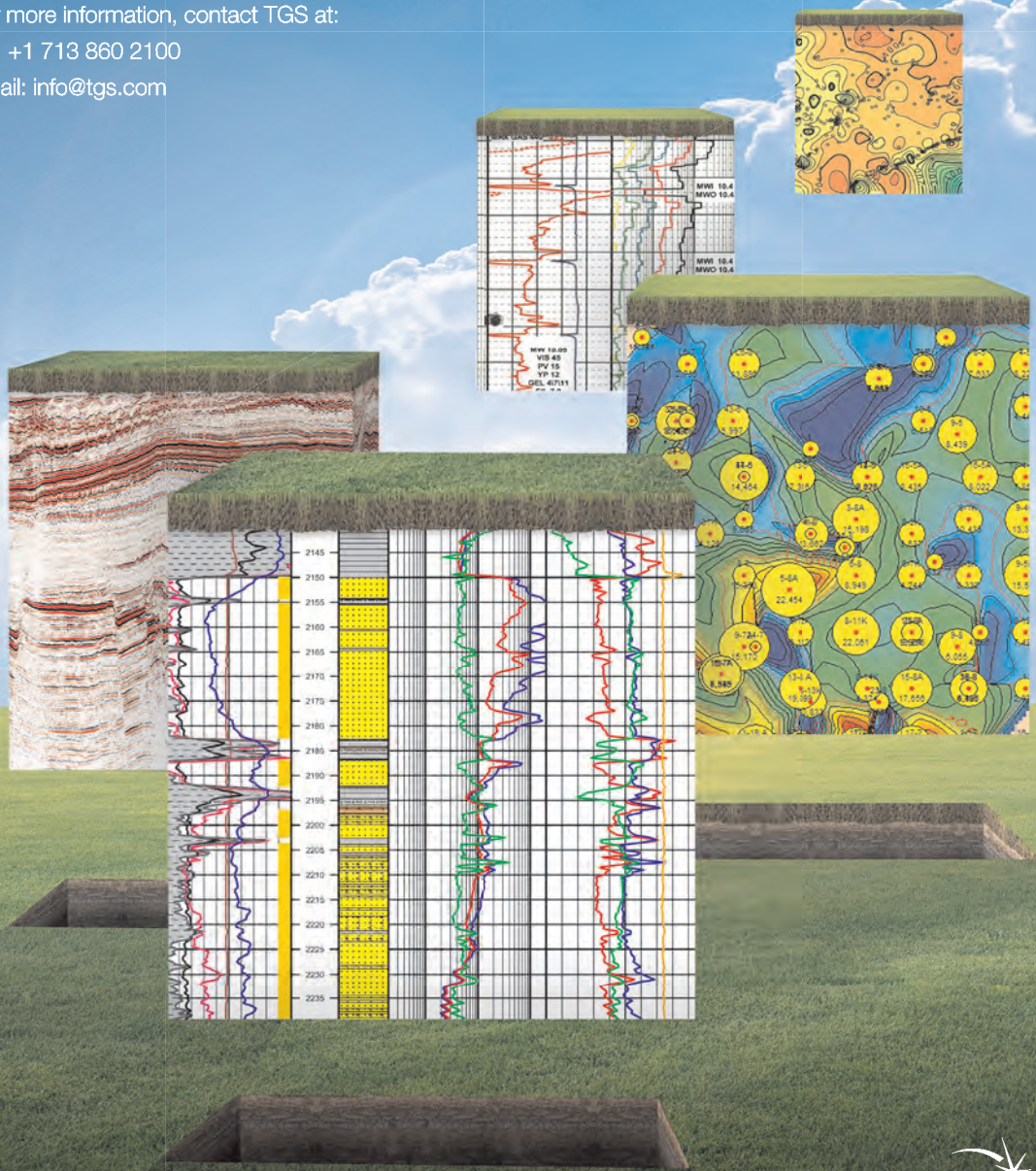

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In Every Issue

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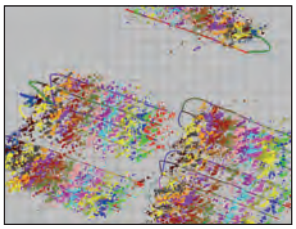

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About the Cover: Richat Structure, The so-called Richat Structure is a geological formation in the Maur Adrar Desert in the African country of Mauritania. Although it resembles an impact crater, the Richat Structure formed when a volcanic dome hardened and gradually eroded, exposing the onion-like layers of the rock. Landstat 7 data acquired 1/11/2001. United States Geological Survey.

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A New Year, A New Board, Some Continuing Thoughts

It has been a while since I last communicated with the HGS membership. From 2009-2011, I was editor of the *Bulletin* and over those two years I emphasized a few key items. My thoughts and views on the roles of professional societies and the obligations of professionals have not changed significantly. These roles share what I consider an important trilogy — continuing education, volunteerism, and mentoring. This month the focus is on continuing education.

Professional or learned societies (and I consider HGS a learned society) have a long history in the geologic sciences. The Geological Society (of London) has a history that dates back to 1807, with HGS itself forming in August of 1923. That's right, we have just passed our 90th anniversary. A key role of these societies has been, and remains, a place for technical debate and discourse, where ideas and concepts can be presented and discussed, a place to learn. The multiple HGS meetings each month provide opportunities for such technical exchange and a means for continuing the education of those in the audience as well as the presenter. A healthy discussion after a presentation is one means of obtaining peer review of a new concept. The HGS also provides opportunities for more formal education and training through its multi-day conferences and short courses. Some of the topics for these activities come through presenters that volunteer while others are solicited based on perceived topical interest. The HGS Board and the responsible committees continue to seek input from the members on topics that might be of interest. If you have a meeting topic that you would like to hear about contact our Vice President **Mike Deming**. If you have an idea for a short course that could benefit our membership please contact **Rosemary Laidacker**.

A key role of these societies has been, and remains, a place for technical debate and discourse, where ideas and concepts can be presented and discussed, a place to learn.

We will come back to these themes as the year continues, but for now I would like to shift to provide a quick preview of our year. Once again in February, HGS will be holding the annual *Applied Geoscience Mudrocks Conference* and in November a new companion *Applied Geoscience Conference on Micro- to Macro Geomechanics* will be offered. Realizing that not all of the members are working on unconventional resource plays, plans are being developed for yet an additional conference with a very different focus. More details will be made available as the planning committee firms up a date and the conference's technical program. In April 2014, the HGS will host the Annual AAPG Conference in Houston. Several short courses are also on the schedule including one on microseismic with others in the planning. June 2014 will once again provide an opportunity to participate in the Grand Canyon Field Trip. In addition to the technical program that HGS presents, we also plan to continue offering a diverse social program including such favorites as the golf and tennis tournaments and Guest Night. HGS will also continue to be active in the community and will support student scholarships. More details as the year continues.

Until next month… ■

Michael Forlanza
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What's Old is New and Passing on Gas: The Decoupling of Energy Prices

When you look at the by-line and the photograph for the new HGS *Bulletin* Editor you may have a vague sense of déjà vu. "Wasn't this guy the editor before?", you might remark. You would be justified in that belief. What's old is new. I had the pleasure of serving as HGS *Bulletin* Editor in the 2008 – 2009 year (Volume 51). Earlier this year, after the editor-elect was not able to fulfill the duties of Editor for the upcoming year, I was invited to again serve as Editor. Despite being aware of the large commitment of time, I have returned for Volume 56. My efforts will follow the wonderful editorship of Patricia Santagrossi and the HGS Editorial Board. I look forward collaborating with the HGS Editorial Board of advisory editors Charles Revilla, James Ragsdale, Ed Marks, Fang Lin, editor-elect David Miller, and our design editor Lisa Kruger.

I invite your contributions and feedback into making the Bulletin *a publication that you enjoy reading and look forward to receiving each month.*

My goal is to maintain the high quality of the *Bulletin* that the members have come to expect and to hopefully facilitate the exchange of ideas and thoughtful discussions on topics of interest to the society. I invite your contributions and feedback into making the *Bulletin* a publication that you enjoy reading and look forward to receiving each month.

Look for some additional features during the next ten issues. These will include a return of the Geological Website of the Month which appeared in the 2008 – 2009 issues. The Internet has developed into an extensive resource and repository for a wide range of information including an abundance of geological, regulatory, and mapping information found on many governmental, educational, society, and industry websites. For many geologists, online resources have become indispensable tools for our jobs. Information that once required a visit to an academic library can now be retrieved in minutes on any computer with an Internet connection. Whether you are interested in geology career opportunities, current events, images of volcanoes, on-going research, or planetary science, you will find useful information.

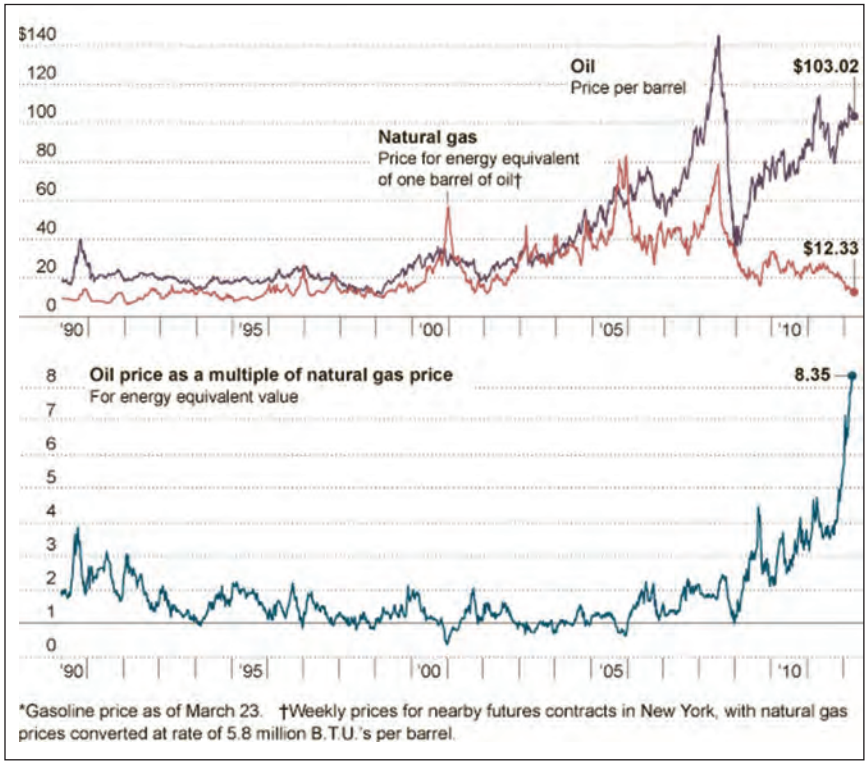
There are many informative and interesting websites dedicated to geological subjects. Enter the word "geology" into a search engine and more than 55 million results are found. Ten geological websites were featured in Volume 51. You can check the back issues to learn about websites for the United States Geological Survey, National Park Service, Geology.com, British Geological Survey, and many others. The revised feature will include a scorecard rating each website's geological interest, visual appeal, and ease of use on a scale of zero to five rock hammers. Another new semi-regular feature will be titled Vintage Geology, an informal exploration of geologically-themed wines. Geologically-themed wines will have an earth science related name, term, or illustration on the label. This feature will include a brief discussion of the vineyard's geological setting and its potential influence on the product. ■

The price of everything increases over time. Everyone knows that. Food costs rise, wages increase, goods cost more, and energy prices go up — except when they don't.

The United States relies on a variety of energy sources to run the world's largest economy. These include oil, coal, nuclear, hydroelectric, natural gas, and, increasingly, renewables. The prices of these energies are quantified daily on commodities markets in the United States and across the world.

As of late-July 2013 the spot market price for a barrel of West Texas Intermediate crude oil was $107.84. **From The Editor** *continued on page 9*

From the Editor continued from page 7



Source: New York Times, *March 30, 2012*

Brent crude oil was $108.58 per barrel. The spot price of natural gas at the Henry Hub was $3.67 per million British Thermal Units (MMBTU). This natural gas price is up significantly from a recent low of $1.95 per MMBTU in April 2012. One British Thermal Unit, a somewhat archaic measure, is the amount of heat (energy) needed to raise one pound of water one degree Fahrenheit.

Because oil and natural gas have similar uses as fuel and feedstock for chemical manufacture, one would think that their prices would be closely linked, rising together and falling together. But because these fuels have very different characteristics and different unit measures, how can one compare the price of oil with the price of natural gas?

Comparison of Prices

Logic would suggest that to compare prices, one must know the relative energy content of the various unit measures. After all, energy content is what users are paying for when buying hydrocarbons.

While the energy content of crude oils will vary based on the region of production, in a rough measure one barrel of oil has approximately six times the energy content of one MMBTU of natural gas. This should make for simple arithmetic. A barrel of oil has six times the energy of one MMBTU of natural gas; therefore, a barrel of oil has the same energy content as six MMBTU of natural gas. This means that one barrel of oil should be six times the price of one MMBTU of natural gas. A quick check with a calculator reveals a disparity. Even after the recent price escalations, six times the price of one MMBTU of natural gas is still only about $22, much less than the current price of a barrel of oil. That means that in July 2013, the equivalent amount of oil energy is worth almost five times that of natural gas energy. What's the deal?

In a March 30, 2013 *New York Times* article *Why One Gas is Cheap and the One Isn't*, Floyd Norris looked at the starkly different trends for the price of natural gas and the price of oil in the period from 1990 to 2012. Except for some spikes, the price of natural gas barely changed during those two decades and the price of oil increased more than five-fold. The biggest divergence in the pricing has occurred since 2008. During most of the period from 1990 to 2005, natural gas and oil were priced roughly the same on an energy equivalent basis. Then, between 2005 and 2012, the price of oil outpaced the price of natural gas until oil was more than eight times more expensive than natural gas in 2012. The price of natural gas has become decoupled from the price of crude oil.

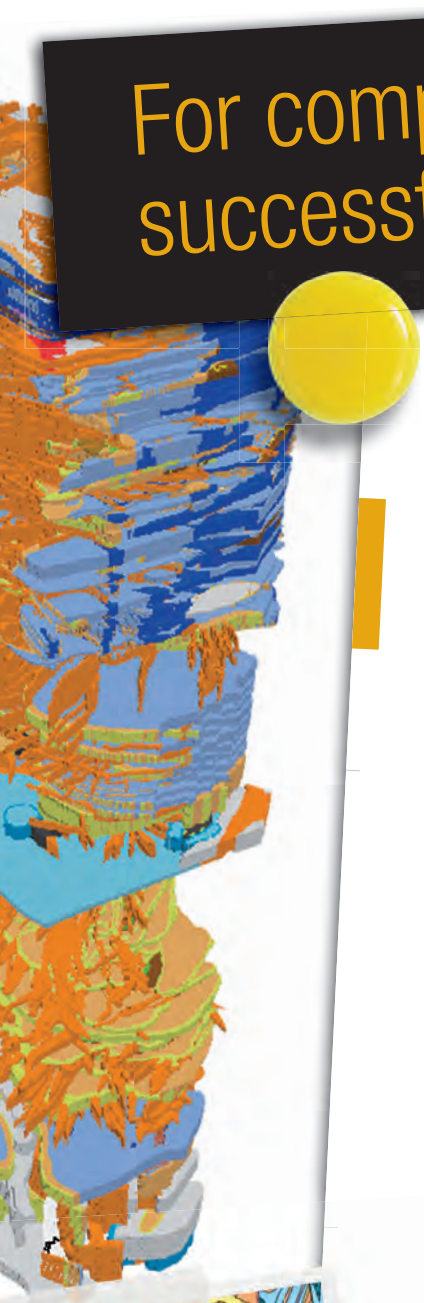
Why the Difference?

Many years ago, while working for Texaco International Exploration, I was on a team that was involved in a major discovery of natural gas off the Northwest Shelf of Australia that became known as Gorgon. Thinking that the impressive flow rates of the discovery well test would please management, I was perplexed when the vice president had a pained look on his face and moaned, "Gas? !? Gas? What good is gas? That's worthless. We can't make money on that. I want something that you can carry in a bucket."

A large part of our economy is "hard wired" into using liquid hydrocarbons. The United States uses approximately 18.5 million barrels of crude oil per day, according to the U.S. Energy Information Administration. More than half of this amount is imported. The gathering, transportation, and distribution of these liquids involve sea-going tankers, pipelines, terminals, refineries, tank farms, railcar, tank trucks, and filling stations. The Institute for Energy Research reports that 70 percent of petroleum consumption in the United States is used for transportation. Cars, trucks, trains, aircraft, and ships have been the engines of the western economies for nearly 100 years. Workers commute, goods are moved to market, raw materials are delivered to manufacturers, and shoppers drive to the mall. This all involves liquid fuels based on oil.

From The Editor *continued on page 11*

For comprehensive and successful exploration...



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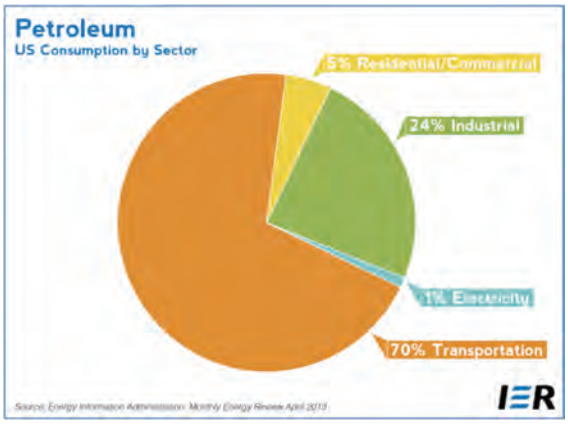
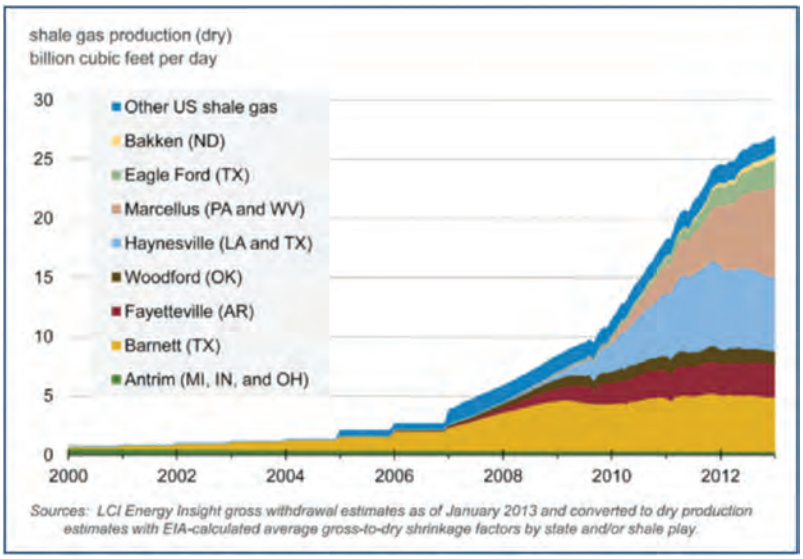


Market Forces

Floyd Norris in the New York Times says, "the diverging prices reflect the fact that while oil and natural gas can substitute for each other in some uses, the markets for the two products are very different." The infrastructure and market for crude oil are international in scope and relatively efficient. Oil moving around the globe in tankers can be diverted from one destination to another almost instantaneously in response to shifts in demand. A change in demand or supply in any region of the globe is likely to show up in prices everywhere.

The natural gas market, on the other hand, is not a global one. There is a limited trade in liquefied natural gas, which can be transported in tankers, but most natural gas must move in pipelines over land. Natural gas prices have been rising in some parts of the world even as they have been falling in the United States.

As most Americans know, the production of natural gas in the United States has been increasing in the last five to ten years. This increase is due largely to the development of unconventional production techniques, especial horizontal drilling and hydraulic fracturing of tight shale formations. Shale gas production in the United States has increased from less than one billion cubic feet (BCF) per day in 2001 to more than 25 BCF per day in 2012. The natural gas infrastructure is not as well developed as the liquid infrastructure. So, until the development of large-scale liquefaction operations that would make natural gas exports viable, United States production remains stranded in North America.



The Future

Most observers would say the future of natural gas in the United States is bright. The use of natural gas for electrical generation is growing and will continue to grow. Bigger and more numerous houses in the hot and humid southern parts of the nation will need to be air conditioned and smart phones will need to charged. However, the use of natural gas in transportation would be the big switch that makes the fuel competitive with oil in the marketplace.

Oilman billionaire T. Boone Pickens has become a strong advocate for the greater use of natural gas in the domestic energy mix by calling for the implementation of "The Pickens Plan." One of the pillars of the Pickens Plan is "use America's abundant natural gas to replace imported oil as a transportation fuel." Here's what Mr. Pickens said in an April 2013 article in *Bloomberg Businessweek*:

"It starts with getting into the transportation sector. When I started the Pickens Plan in 2008, there were about 200,000 vehicles on natural gas in the world; now there's about 16 million. That growth is coming from everywhere but the U.S."

"The best thing to do is focus on heavy-duty trucks and give them a tax credit. You don't put natural gas in your corner gasoline station. You put natural gas in a truck stop. It's a fuel that competes against diesel. There are about 8 million heavy-duty trucks in the U.S. If you convert them to natural gas, that boosts consumption by about 15 billion to 20 billion cubic feet a day."

Even though Mr. Pickens and others may have visions of a transportation system that uses vastly more natural gas or even greater increases in electricity generated by burning natural gas, our liquid hydrocarbon-based economy will be with us for a while longer. Until you can refuel your car from the natural gas line running to your house, you will still want a fuel that you can carry in a bucket. ■

Footnote: The March 2012 article by Floyd Norris was fairly prescient in forecasting: "…futures traders think that the gap in prices will diminish but remain large. A year from now, oil prices are expected to be almost exactly where they are now, while natural gas prices are forecast to have risen more than 50 percent. If that happens, on an energy equivalent basis, crude oil will still be more than five times as expensive as natural gas." Almost dead on.

Letters to the Editor

Editor's Note: *The following letters were provided in response to the Editor's Column by Patricia Santogrossi in the May 2013 issue of the HGS* Bulletin *and a talk delivered by Bob Shoup at the HGS General Lunch on February 27, 2013.-*

A Renegade Petroleum Geologist Fulminates about Climate Change

I don't know whether to be appalled or chagrined by my fellow geologists' short-sightedness in the debate about climate change.

There's a lot of argument about WHY it's happening, but little disagreement that it IS happening (e.g., the recent HGS talk by Bob Shoup[1] and its follow-up "From the Editor" article[2], both of which include pictures of Greenland (before, now and after?) implying that, yes, we are coming out of a cool epoch now, it's been warmer before, and it's bound to get warmer. And they say this is good, that people do well when it's warm. (Warm? It's been a lot hotter! But not when we've been here. Graphs of warmer climes and times show that the mid-Permian was hellish hot.[3] More recently, who remembers the Paleocene-Eocene Thermal Maximum?[4] **Figures 1, 2, 3**.) For people who supposedly have a firmer grasp on "deep time" than do most folks, too many of us seem to get lost in it and forget about how little of that time people have been around to experience the drastically different climates through which life has both thrived and struggled to survive.

Most of the more voluble geoscientists I hear in our circle seem to me to be reactionaries. They react to what they see as non-science-based alarmism by spending valuable time and energy

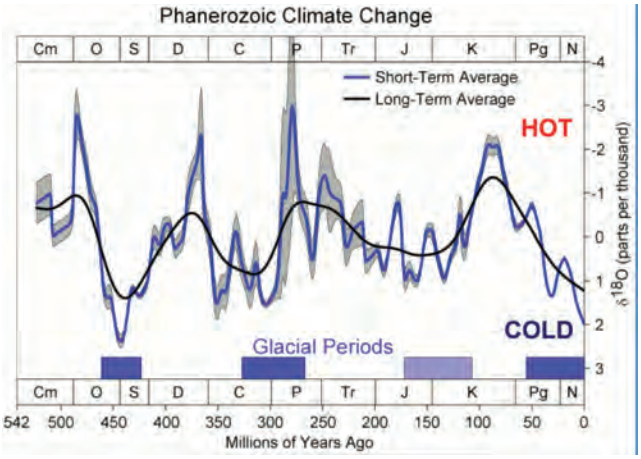


Figure 1: *It's been one helluva lot hotter in the past than is is now!*

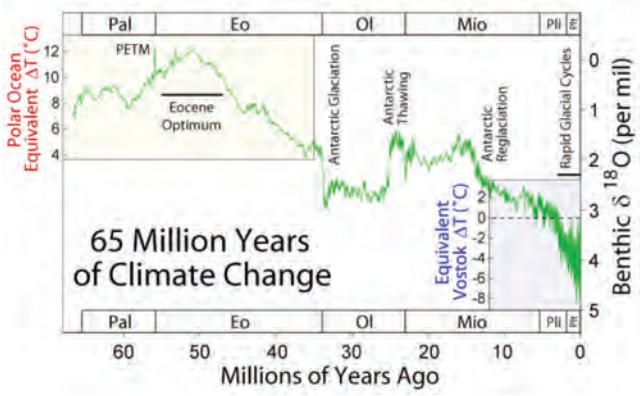


Figure 2: *And even more recently, Earth has known some quite warmer times.*

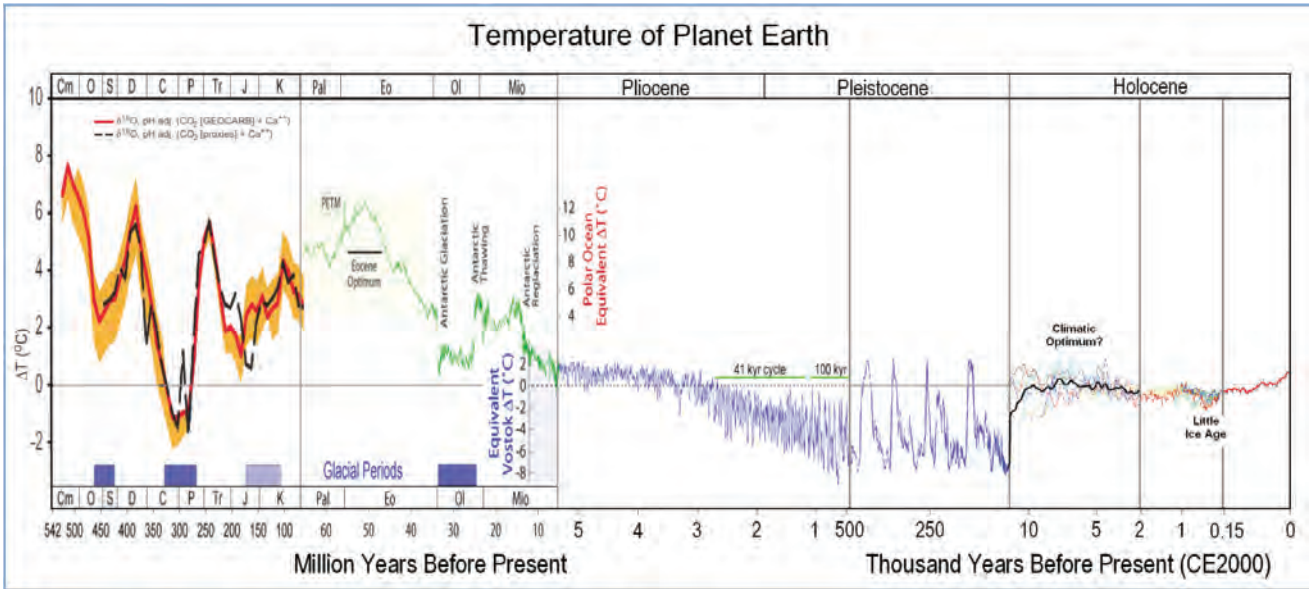


Figure 3: *Let's mash it all up, global temperatures through half a billion years.*

arguing that the 'awl bidness' has nothing to do with climate change. They say "The sky is not falling." It seems to me that someone's in denial, and it isn't Chicken Little.

About causes of this warming, I notice a serious "either-or" type of thinking, even among scientists – EITHER it's anthropogenic, OR it's natural. Almost never does anyone consider that mankind's smallish, but constant CO_2 - and CH_4 and even H_2O - contributions could ADD to solar and other causes of our planet's return to a warmer phase, and perhaps even somewhat counteract episodic volcanic and other causes of temporary planetary cooling.

All that aside, the main thrust of my letter is this: What are we going to DO about it?

Most of us agree with the evidence that the climate is warming. It's hard to deny that northern polar ice is shrinking. Sea level is rising, slowly but surely, both due to Antarctic and Greenland ice cap melting and to thermal expansion of ocean water. We see species moving their ranges to adjust for changing climate. Yet we humans continue to argue about why this is happening.

When do we start moving our cities incrementally inland? When do we start adjusting our agricultural patterns? When do we make better water use plans? And so on and so forth; and so it goes.

Art Browning
Cypress, Texas

Notes:

1: Robert C. Shoup, 2013: "What are Global Temperatures Doing and Why are They Doing It?" (talk presented at the General Membership Luncheon on February 27th at the Petroleum Club in downtown Houston); abstract: Houston Geological Society Bulletin, *v. 55, #6 , pages 47 and 49.*

2: Patricia Santogrossi, "From the Editor" repeat and review of the previously cited talk, Houston Geological Society Bulletin, *v. 55, #9, pages 7, 9-11, 13.*

3: Graph (my Figure 1) "Phanerozoic Climate Change" from Wikipedia Paleoclimatology article, http://en.wikipedia.org/wiki/Paleoclimatology#Phanerozoic_climate (Figure 1)

4: Graph (my Figure 2) "65 Million Years of Climate Change" from Wikipedia Paleocene-Eocene Thermal Maximum article, https://en.wikipedia.org/wiki/Petm (Figure 2)

5: Graph (my Figure 3) "Temperature of Planet Earth" from Wikipedia Paleoclimatology article, Op. Cit.

To: HGS Editor June 2013:

The timing of the HGS Editor's May letter describing the talk of R.C. Shoup (2/27/2013) ironically coincided with publication of a survey which found 97% of some 4000 climate-scientists who published opinions on the cause of climate change, attributed it to human activities (*Environmental Research Letters, ERL*). I bet a survey of HGS members would not find 97% agreement on the theory of evolution. Also ironic, this May scientifically recognized measurements of atmospheric CO_2 levels reached 400ppm for the first time in at least 800,000 years.

Mr. Shoup and the Editor cannot be faulted for not knowing about the ERL survey (or the 400ppm). I find odd, however, the absence of results from a study funded by the Koch brothers and led by a recognized climate-change skeptic, R. A. Muller. The results of this study were summarized in a *WSJ* OpEd entitled "*The Case Against Global-Warming Skepticism There were good reasons for doubt, until now*" (*WSJ*, 10/21/2011). They also did not mention another article where the former skeptic stated "*Humans are almost entirely the cause*" (*NYT*, 7/28/2012). But then, Dr. Muller is an actual climate scientist.

Mr. Shoup and the Editor demonstrated that you don't need to be an expert on something to express an opinion. OK, but would you take advice from a climate scientist to develop an exploration plan?

The Editor's closing statement that "*Human kind seems to do better when it is warmer…*" would be amusing if it were not from an organization that purports to "encourage academic training in the geosciences…." I feel that HGS should decide if it is a club for political advocacy or an organization that promotes scientific professionalism. If you pick the former, the "purpose" portion of the HGS constitution needs to be changed.

Jim Rine
Houston, TX

The HOUSTON GEOLOGICAL SOCIETY
Save the Dates
Local Geology Activities for the Whole Family coming in October!

Earth Science Week, 2013
October 6-21

Please visit the HGS website and look for the Earth Science Week tab under Educational Outreach for details and current updates. http://www.hgs.org

The American Geosciences Institute (AGI) is pleased to announce that the theme of Earth Science Week 2013 will be "**Mapping Our World**." This year's event will promote awareness of the many exciting uses of maps and mapping technologies in the geosciences.

The HGS will be hosting these two exciting events:

Saturday, October 12 (11:00am – 3:00pm)

Annual Family Energy Festival – Houston Museum of Natural Science:
Hands-on activities for kids and guided tours of the Wiess Energy Hall and the new Paleontology Hall.

Sunday, October 20 (11:00am – 3:00pm)

HGS sponsors a family friendly outdoor geology fieldtrip to the fossil location at Whiskey Bridge near Bryan, Texas.

Information will be updated on the HGS Educational Outreach webpage at http://www.hgs.org/education_EarthScienceWeek.

These are great opportunities to share your love of earth science with family and friends.

HGS needs you to make this event a success. If you are interested in volunteering for these events, please contact the ESW committee coordinator: Marc Fagelman at mfagelman@comcast.net or our HGS Volunteer Coordinator: Sue Pritchett at pritchettsue@gmail.com for more information.

Teachers – please visit http://www.earthsciweek.org/materials/index.html and order your 2013 Earth Science Week ToolKit.



Photos of 2012 McFaddin Beach Field Trip

PESGB

The 12th PESGB/HGS Conference on African E&P
Wembley Stadium, London. September 11th-12th 2013

Africa: Success in Rift, Sag and Passive Margin Settings

Getting to Wembley with ease

Wembley Stadium is closer than you think!

Wembley is only two stops from Baker Street (Metropolitan Line) and nine minutes from London Marylebone (Chiltern Line).

- The Jubilee and Metropolitan Lines both serve Wembley Park Station;
- Bakerloo and London Overground Lines serve Wembley Central Station;
- Chiltern Railways serves Wembley Stadium Station;
- Local buses to the Stadium include 18, 83, 92 and 224.

For a 'your sofa to your seat' guide on how to get there visit:
www.wembleystadium.com/TheStadium/GettingHere.aspx

Conference Highlights include:

27 oral presentations, >25 posters covering all hot exploration areas in Africa;
Talks on significant discoveries - Mamba, Tamar, Jubilee, Illizi tight gas, Castanha;
Talks on major new plays - Pre-Salt, Lebanon, W Africa Oligocene, Conjugate Margin Plays, EARS, E African Margin;
Opening talk by Mike Daly on Intracratonic Sag Basins.

There are still a few Exhibitor Booths and Sponsorship items remaining - if your company would be interested please contact Bethany Parkinson: bethany@pesgb.org.uk
Registration is open (early bird rates available until 31st July - go online at **www.pesgb.org.uk**

PESGB

Background basins image courtesy of the Exploration Fabric of Africa project compiled in memory of Ed Purdy, a former contributor to many African conferences.

PESGB

The 12th PESGB/HGS Conference on African E&P
Wembley Stadium, London. September 10th & 11th-12th 2013

Timetable

Tuesday 10th September:

One day course - Petroleum Basins of Sub-Saharan Africa, D. MacGregor

6.30pm - London Evening Lecture in conjunction with The Africa Conference - 'West Africa Pre-Salt Rush: new ideas on proven and emerging trends', Fabio Lottaroli (ENI)

Wednesday & Thursday, 11th - 12th September:

Africa: Success in Rift, Sag and Passive Margin Settings

- WEDNESDAY -

8:30	***Registration & Coffee***	
9:20	Welcome and Introduction	John Austin - President PESGB
	Session 1: Intracratonic Sag Basins and North Africa. Session Chairs: Richard Moody, Mike Daly (BP)	
9:30	KEYNOTE: Africa's oil and gas resources and the potential of its sub-Saharan cratonic basins	*M. Daly,* ***BP***
10:00	Oil and gas exploration in the Ghadames Basin of Southern Tunisia	*P. Krois, et al,* ***OMV***
10:25	Appraising and developing a tight gas reservoir in the Illizi Basin, Algeria	*K. English, J. Valentine,* ***Petroceltic***
10:50	***Coffee & Poster Presentations***	
11:20	The Tamar Field from Discovery to Production	*D. Needham, et al,* ***Noble Energy***
11:45	Sources and pathways of Levant Basin deposits, offshore Cyprus and Lebanon	*J. Fürstenau, J. Comstock, C. J. Lowrey,* ***PGS Norway***
12:10	Oil exploration and ore mineral data: a new model of Tethyan rifting, hydrocarbon maturation, Atlasic thrusting and fluid flow in Northern Tunisia	*A. W. Baird,* ***Univ of Kingston****, C. J. Clayton,* ***Mejerda Exploration***
12:35	***Lunch & Poster Presentations***	
	Session 2: West Africa Deep Water Turbidite Plays. Session Chairs: Richard Dixon (BP), Fabio Lottaroli (ENI)	
13:45	KEYNOTE: Exploring the Deepwater Cretaceous Play in West Africa and the Discovery of the Jubilee Field	*P. Dailly,* ***Kosmos***
14:10	Exploring the Equatorial Atlantic: The challenges of extending the 'Jubilee' play concept westwards along the margin	*J. Tinker,* ***Tullow Oil***
14:35	Influences of Tectonics, Drainage and Sediment Supply on Upper Cretaceous Deepwater Deposits in the Deep Ivorian Basin of Western Ghana and Cote D'Ivoire	*P. Towle, D. Addis, et al,* ***Anadarko Petroleum Corporation***
15:00	Structural Control of Slope Morphology and Depositional Setting in Parts of the Douala Basin	*T. Akingbade, A. Gogola, G. Olson,* ***Noble Energy****, P. Nguema,* ***SNH***
15:25	***Coffee & Poster Presentations***	
16:00	Structural Deformation, Traps and Reservoir Distribution in Deepwater Southern Equatorial Guinea: A Tale of Two Basins	*S. Thornton, P. Barndollar, et al,* ***PanAtlantic Exploration Company***
16:25	Angola - Lower Congo Basin (Blk. 15/06) - Rupelian Channel Complexes and their exploration potential	*P. Giaj-Via, et al,* ***ENI E&P***
16:50	Integrated analysis of shallow fluid flow phenomena and hydrocarbon migration in the Southern Kwanza Basin, offshore Angola	*C. Serié, M. Huuse,* ***Univ of Manchester****, N. H. Schødt,* ***Maersk****, J. Brooks, A. Williams,* ***Fugro NPA***
17:15	KEYNOTE: Challenges and Case Studies in Sub-Salt Imaging	*J. Thorseth,* ***BP***
17:45	***Evening Reception, Entertainment and Exhibits***	

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Timetable

Africa: Success in Rift, Sag and Passive Margin Settings

- THURSDAY -

8:30	***Registration & Coffee***	
	Session 3: West African Rifts and Pre-Salt. Session Chairs: Ray Bate (Global Exploration Services), Prof. Aberra Mogessie (Geological Society of Africa/University of Graz, Austria)	
9:00	Rifting and opening above a mantle plume in the Central South Atlantic	*D. Quirk, et al,* ***Maersk***
9:25	First Commercial Oil Discovery Pre Salt in Onshore Cabinda (Angola), after more than three decades	*A. Viera, M. Rosso, E. Gobbo, M. Pereira, E. Tudisca,* ***Pluspetrol***
9:50	Warp, rift, invert and sag: new insights into the tectono-stratigraphy of Gabon	*R. Crossley, V. Cole,* ***CGG****, S. McKenna, T. Kubli,* ***Addax***
10:15	***Coffee & Poster Presentations***	
	Session 4: East African Rifts and Passive Margin. Session Chairs: Ray Bate (Global Exploration Services), Prof. Aberra Mogessie (Geological Society of Africa/University of Graz, Austria)	
10:45	KEYNOTE: African Rifts and Source Rocks	*A. Y. Huc,* ***University Pierre and Marie Curie***
11:15	The Cretaceous and Cenozoic Palaeoclimatological Evolution of African Hinterlands	*P. J. Markwick, B. M. Harland,* ***Getech****, P. J. Valdes, D. Lunt,* ***Univ of Bristol***
11:45	Hydrocarbon Migration and Trapping Mechanism in the Lake Albert Basin, Uganda	*P. Lays, et al,* ***Total Exploration & Production Uganda***
12:10	The Ruwenzori Mtns, Albertine Rift: Thermal evolution on the long run	*F. U. Bauer, U. A. Glasmacher,* ***Heidelberg Univ****, et al*
12:35	***Lunch & Poster Presentations***	
	Session 4 continued. Session Chairs: Andrei Belopolsky (Premier), John Argent (BG Group)	
13:40	Understanding the structural history of the Livingstone Basin, Malawi Rift	*D. Jones,* ***Surestream Petroleum***
14:05	Geophysical Exploration in the Tanzanian Rift Valleys	*B. Downie, B. Smith, P. Holley,* ***Heritage Oil***
14:30	Why have there been no oil discoveries so far in Tanzania? - How advanced basin modelling may progress their discovery	*M. C. Pereira-Rego,* ***Aminex****, A. D. Carr,* ***Global Exploration Services****, N. R. Cameron,* ***GeoInsight***
14:55	***Coffee & Poster Presentations***	
15:25	KEYNOTE: The Mamba Complex supergiant gas discovery (Mozambique): an example of turbidite fans modified by deepwater tractive bottom currents	*F. Fonnesu,* ***ENI E&P***
15:55	Mozambique and its role in the downfall of Gondwana	*C. V. Reeves,* ***Earthworks****, E. S. Mahanjane,* ***INP***
16:20	Rifting of the Zambezi Delta region, Northern Mozambique Basin and its implications for a Jurassic marine source rock	*L. Anderson, A. Caillot, L. Gatter, C. Barrere,* ***CEPSA****, E. Mahanjane,* ***INP***
16:45	Closing Address and Invite to Houston, 2014	*A. Danforth,* ***HGS***

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Timetable

Africa: Success in Rift, Sag and Passive Margin Settings

- Throughout Conference -

Poster Session:	
Strike-Slip Nature of the Structure of the Levant Basin offshore Lebanon	*J. Comstock, et al,* ***PGS***
Cretaceous Tectonic Events on the Ghadames Platform	*R. Moody,* ***Moody-Sandman Assoc.***
Play Fairway Mapping and Risk Assessment of the Sirt Rift Province, Libya	*G. Williams, D. Boote,* ***Lynx/DBS Consulting***
Cretaceous Salt Tectonics of the Douala Basin	*T. Akingbade, et al,* ***Noble Energy***
Geometry of Upper Miocene deepwater plays offshore Congo, West Africa	*S. Baer, et al,* ***PGS***
Harper Basin - exploration potential identified from 2D and new 3D seismic data	*R. Masotti, et al,* ***TGS***
3D modelling offshore Invorian Basin, African equatorial margin: Application of a sequence stratigraphic framework in regional exploration screening	*C. Saunders, et al,* ***Neftex***
Petroleum Potential of the Offshore Namibe Basin, Angola	*J. Greenhalgh, et al,* ***PGS****, M. Ita,* ***Sonangol***
New insights into South West Africa margin evolution; integrating reconstructions and restorations	*D. A. Paton, et al,* ***Leeds Univ****, A. Quallington, P. Markwick,* ***Getech***
Use of Public-Source Data to High-Grade Areas for Detailed Exploration: An Example from Offshore SW Africa	*M. Alexander, et al,* ***Consultant/IGC***
Defining Frontier Petroleum Systems with higher Granularity: Examples with Plate Reconstructions of the Atlantic Margins	*W. Dickson, et al,* ***DIGS***
A New Structural and Tectonic map of West Africa	*A. Quallington, et al,* ***Getech***
Ultradeep Lower Congo Basin	*S. Tewari,* ***WesternGeco***
Pre-Salt Carbonates West Africa: Reservoir Quality Controls within Marine and Volcanic-Influenced Rift Lake Systems	*A. McAfee, et al,* ***CoreLabs***
New insights on the prospectivity of the Morondava Basin, Offshore Madagascar based on new seismic data	*G. Roberts, et al,* ***SpecPartners***
A development and interpretation history of borehole imaging through a range of lacustrine and fluvial successions and the consequences for depositional understanding, Albert Basin, Uganda	*R. McGarva, H. Wyllie,* ***Task Geoscience***
Structural complexities of the East African rifts and the implications for exploration and production	*D. Brown,* ***Gaffney Cline***
Variable age of breakup along the Kenya-Tanzania-N Mozambique margin	*A. Danforth, et al,* ***ION***
De-risking exploration plays in East Africa: Integrating seismic data with bio and lithostratigraphy	*D. J. A. Spofforth, et al,* ***Robertson Geospec/CGG***
Hinterland control on East African turbidite plays: The effects of successive regional kilometre-scale uplifts	*D. MacGregor,* ***Surestream/MacGeology***
The tectonic development of Africas elevated passive continental margins and implications for exploration	*P. Green, et al,* ***Geotrack***

Continued over the page…

PESGB

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Wembley Stadium, London. September 10th & 11th-12th 2013

Timetable

Africa: Success in Rift, Sag and Passive Margin Settings

- Throughout Conference -

Poster Session:	
NW-Namibia's passive continental margin, thermochronological data and interpretation	*U. Glasmacher, et al,* ***Heidelberg Univ***
Defining the outer continental shelf beyond 200 nautical miles - extending to the final limits of Africa's oil wealth	*L. Parsons, R. Edwards,* ***Maritime Zone Solutions/Nat. Oceanography Centre***
Unconventional Gas & Conventional Oil - Sustainable Life Cycle Water Management a Key for Asset Viability	*R. Evans,* ***Ambellia***
Africa's tectono-magmatic zones, their tectono-stratigraphic history and petroleum significance	*S. Lawrence, et al,* ***ERCL***
Albian Paleo-topography of the South Atlantic Basin, Examples from West Africa and South America	*K. A. Nibbelink,* ***Hyperdynamics***
Fractured & Weathered Basement Reservoirs - A High Risk but Potentially High Reward Oil & Gas Play in East and West Africa	*T. Koning,* ***Gaffney Cline***
From regional setting to local insight, multi-resolution satellite data for hydrocarbon exploration in the EARS	*M. Hall,* ***Astrium Geo-Information***
Using high-resolution aeromagnetic data to recognize and map intra-sedimentary volcanic rocks and geological structures across the Cretaceous middle Benue Trough, Nigeria	*G. K. Anudu, R. A. Stephenson, D. I. M. MacDonald,* ***Univ of Aberdeen***
The contribution of basement fabric and composition to the petroleum prospectivity in the E.A.R.S. region	*M. Oehlers, P. Barreto, D. Necea,* ***CGG***

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HGS Golf Tournament

Monday – October 21, 2013
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 $125.00 per person or $500.00 per team on entries received by October 11th. Entries will be accepted after October 11th, 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.

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

Petro Log International, Inc.
One Sugar Creek Center Blvd., Suite 945
Sugar Land , TX 77478
Office: 281-494-2522 Fax: 281-494-2526
Email: mdennis@petrolog.com & 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 21, 2013
Kingwood Country Club

Sponsorship Application

Trevino Sponsorship $500.00

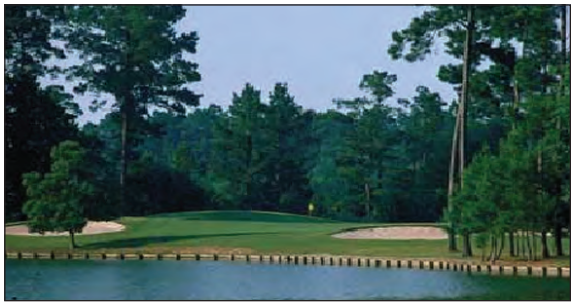
- Hole signs on all three courses.
- **Company name** displayed on sponsor recognition board at registration and awards banquet.

Hogan Sponsorship $750.00

- Hole signs on all three courses.
- **Company logo** displayed on sponsor recognition board at registration and awards banquet.

Nicklaus Sponsorship $1,000.00

- Hole signs on all three courses.
- **Company logo prominently** displayed on sponsor recognition board at registration and awards banquet.
- **Company logo** displayed on driving range and practice putting green.



Title Sponsorship $2,000.00

- Hole signs on all three courses.
- **Company logo prominently** displayed on sponsor recognition board at registration and awards banquet.
- **Company logo** displayed on driving range and practice putting green.
- **Company logo** displayed on beverage carts.
- **Sponsorship includes tournament entry for one team (4 people).**

To sponsor, please indicate your sponsorship level _____
and mail, fax or email sponsor application form along with payment (payable to HGS Entertainment Fund) to:
Petro Log International, Inc. • One Sugar Creek Center Blvd., Suite 945 • Sugar Land , TX 77478
Office: 281-494-2522 Fax: 281-494-2526 • Email: mdennis@petrolog.com

Name _____ Phone _____ Amount Enclosed _____

Company _____ Email _____

Billing Address _____

Credit card # _____

Exp. Date _____ Security Code# _____

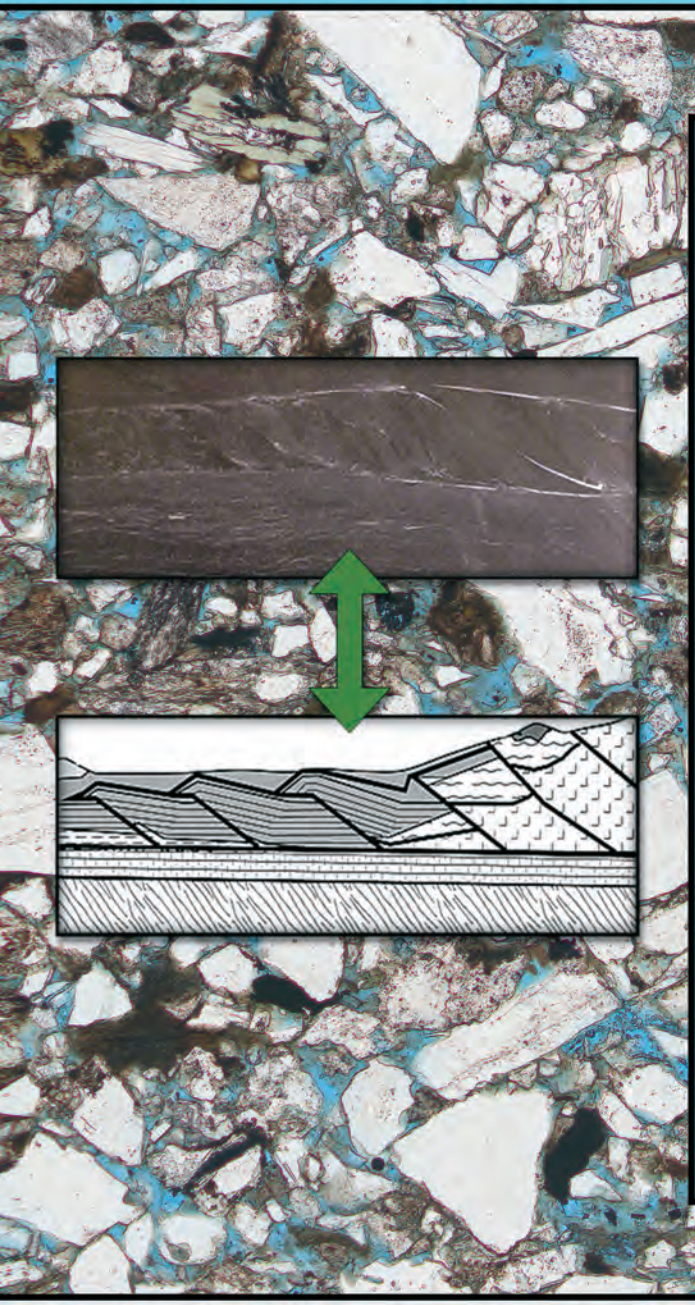
Please email your company logo to Mark Dennis at mdennis@petrolog.com.
Note: Company logos (high resolution file) must be received no later than October 5th.
If there are any questions, I can be reached at 281-705-4346 (cell) or 281-494-2522 (office).

Applied Geoscience Conference

Interdisciplinary Micro to Macroscale Geomechanics

November 4-5, 2013

WESTIN MEMORIAL CITY 945 Gessner Road Houston, TX 77024



Geomechanical Approaches for Optimization of Unconventional Reservoirs

Presenters and attendees will represent a broad spectrum of industry professionals, including those in the disciplines of geology, geophysics, and engineering. The integrated topics will cover advantages of using geomechanical characterization to reduce difficulties in de-risking unconventional reservoirs.

Day 1 sessions will focus on:

- Petrophysical & Geomechanical Integration
- Engineering & Geomechanical Integration

Day 2 sessions will focus on:

- Microseismic & Geomechanics
- Seismic, Structure, & Geomechanics

Speakers include technical experts from industry, government and university.

Be a corporate sponsor!

More information on registration, sponsorship, and the speaker line-up can be found at www.hgs.org

HOSTED BY THE HOUSTON GEOLOGICAL SOCIETY

Applied Geoscience Conference

Interdisciplinary Micro to Macroscale Geomechanics

NOVEMBER 4-5, 2013

Main Conference - $15,000

Availability: 2 of 2

- 4 complimentary Conference registrations
- Company name & logo prominently displayed at event, online event website and related HGS communications
- Dedicated directional signage & logo lanyards
- Complimentary vendor table

Student Technical Poster Session - $10,000

Availability: 2 of 2

- All sponsored student Conference registrations
- Company name & logo prominently displayed at event, online website event and related HGS communications
- Dedicated signage at student technical poster session
- Complimentary vendor table

Reception: $5,000

Availability: 5 of 5

- 2 complimentary Conference registrations
- Company name & logo displayed at event, online event website, and related HGS communication
- Dedicated signage during Conference reception
- Complimentary vendor table

Speaker Reception - $3,500

Availability: 2 of 2

- Company name & logo displayed at event, online event website, and related HGS communication
- 10 complimentary passes for speaker reception

Lunch - $2,500

Availability: 5 of 5

- Company name & logo displayed at event, online event website, and related HGS communications
- Dedicated signage during Conference lunch

Wifi - $1,500

Availability: 1 of 1

- Company name & logo displayed at event, online event website, and related HGS communications
- Special recognition

Coffee - $1,000

Availability: 4 of 4

- Company name & logo displayed at event, online event website, and related HGS communications
- Dedicated signage at Conference break stations

To sponsor, please indicate your sponsorship level _____ with payment (payable to HGS) to:
HGS - 14811 St. Mary's Lane, Ste. #250 - Houston, Texas 77079 - Attn: Nina, or you can email your sponsorship form to Nina@hgs.org

Name _____ Phone_____ Amt. Enclosed_____

Company _____ Email_____

Billing Address _____

Credit Card #_____ Exp. Date_____ Sec. Code#_____

Approved by_____ Date_____

If you would like HGS to invoice your sponsorship please complete the section below:

Invoicing Address _____

Accounting Contact Name _____Contact Email Address_____

Special Billing Codes_____

Approved by_____ Date_____

Please email your company logo to Nina@hgs.org. **Note: Please send only company logos at 300+ dpi**

Monday, September 9, 2013

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

Cherie Telker
MicroSeismic, Inc.

Temporal Evolution of Stress States and Correlation of Production with Hydraulic Fracturing Source Mechanisms in the Marcellus Shale.

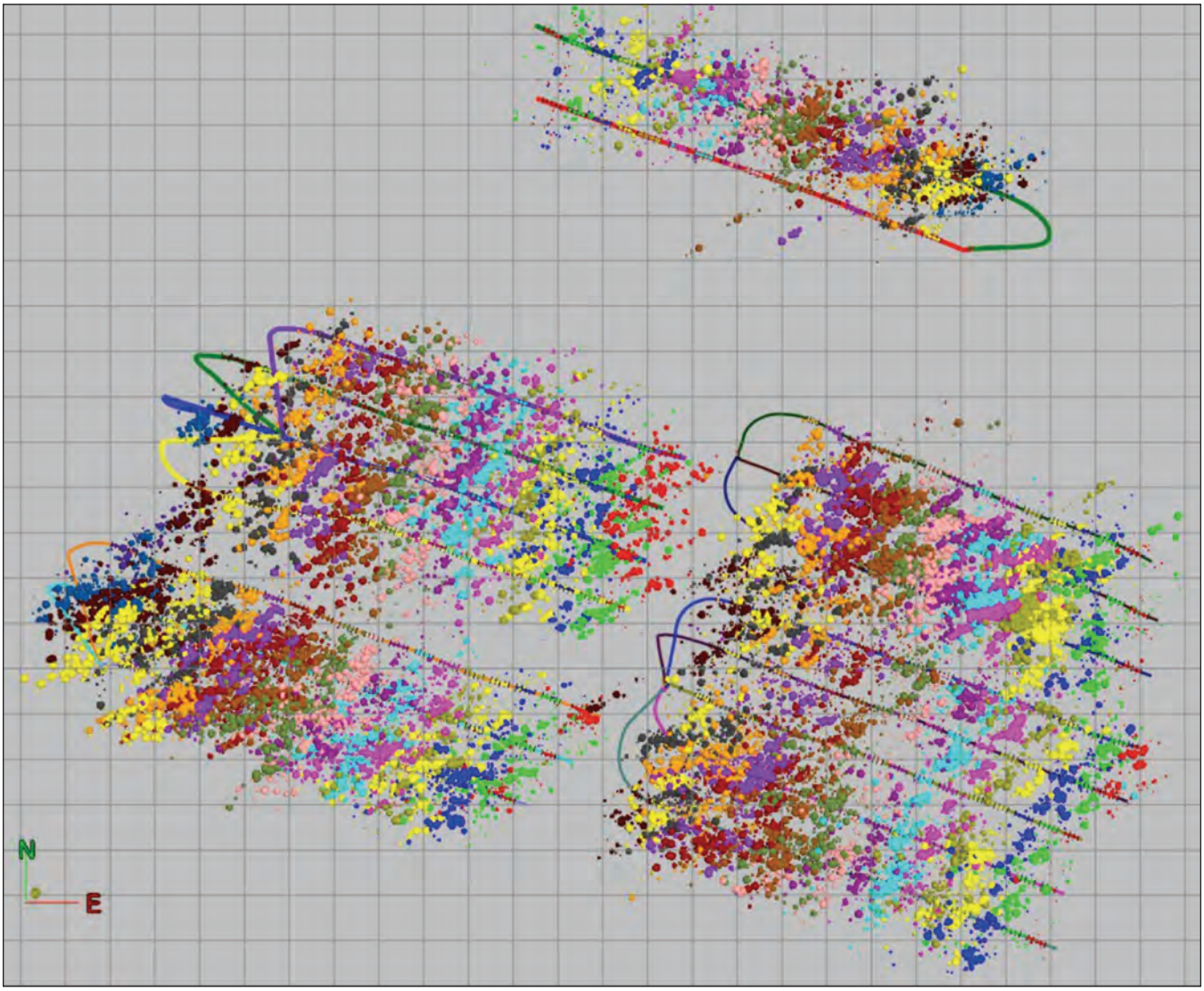


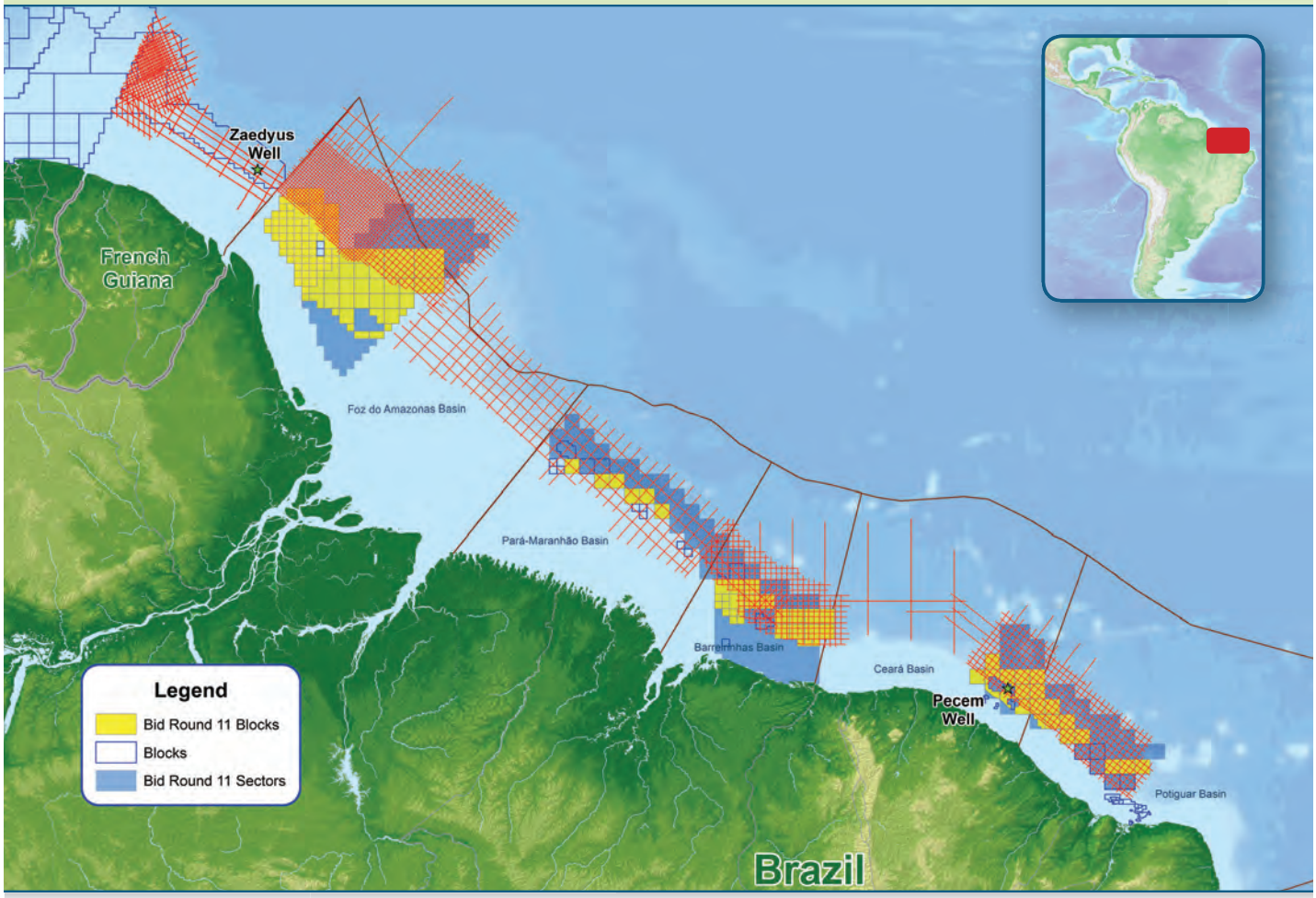
Figure 1: *Map view of the microseismic events for the case study, colored by stage and sized by energy.*

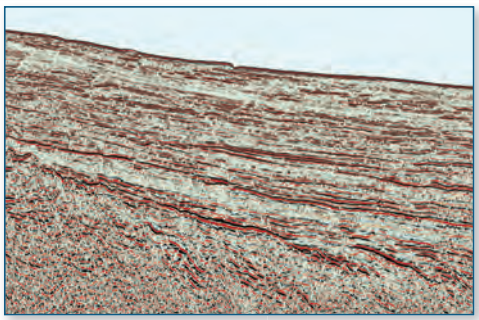
Hydraulic fracture stimulation treatments for 17 wells in the Marcellus Shale of West Virginia were monitored for hydraulic fracturing related seismicity (**Figure 1**). The passive seismic data were acquired with a shallow buried array of 101 permanently installed geophones, covering an area of 18 square miles. The wide azimuth, high fold, and large aperture geometry of the array provided a consistent imaging resolution under the entire array and allowed for the determination of the source mechanisms of the detected microseismic events.

HGS General Dinner *continued on page 27*

Equatorial Margins Brazil

Multi-Client Seismic - Data Available for Brazil Round 11





Seismic section from the Potiguar Basin data

Spectrum is active in five basins along the Equatorial Margins of Brazil that are on offer in Round 11. We have new PSTM and PSDM data available for each of the Foz do Amazonas, Barreirinhas, Ceara and Potiguar surveys all of which were acquired with 10,000m offsets and 13 second record lengths.

Two reprocessing efforts are underway along the Equatorial Margins, one a 9,600 kilometer program in the Para-Maranhao basin that links the Foz do Amazonas basin to the Barreirinhas Basin. The second project is an 7,783 kilometer project in the deep waters of French Guiana, which will link the Zaedyus discovery with the recently acquired data in Brazil. The well tie data will be available in late March and the remaining data in April.

Our Multi-Client team is committed to delivering high quality data in advance of the upcoming Round 11. Companies participating in Spectrum's programs will have a competitive advantage in this round.

Spectrum

+1 281 647 0602
mc-us@spectrumasa.com
www.spectrumasa.com

HGS General Dinner Meeting continued from page 25

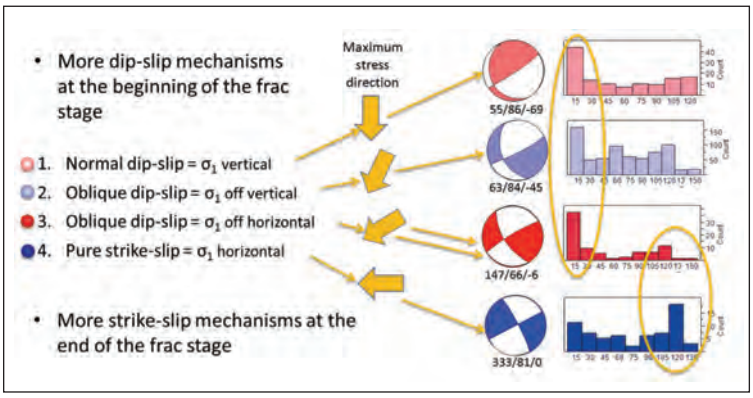


Figure 2: *Four failure mechanism types identified in the microseismic events. The dip-slip mechanisms are more frequent near the beginning of the treatment stage and the strike-slip mechanisms are more frequent near the end of the stage.*

A statistical analysis of failure mode and associated stress state at failure was performed. For the largest events, a detailed analysis of source mechanisms revealed heterogeneous failure plane orientations and slip directions, with a combination of dip-slip and strike-slip failure and varying amounts of volumetric failure. A stress inversion analysis allowed characterization of the local stress tensor, and showed how it changed from the beginning to the end of the treatment. **Figure 2** shows that dip-slip failure tended to occur at the beginning of the treatment stages, and strike-slip tended to occur at the end of the stages, implying that the stress state changed from maximum stress being vertical at the beginning to horizontal at the end.

In the Marcellus Shale, there are two well-developed joint sets: northeast-southwest oriented J1 and northwest-southeast oriented J2. The dip-slip mechanism is associated with J1 failure, while J2 reactivation is correlated with an increased number of strike-slip events. The percentage of strike-slip events varied on a well-by-well basis from 15% to 44%, with an average of 24%. **Figure 3** shows a positive correlation between the percentage of strike-slip events and initial production, illustrating the relationship of increased complexity of the fracture network and enhanced overall permeability.

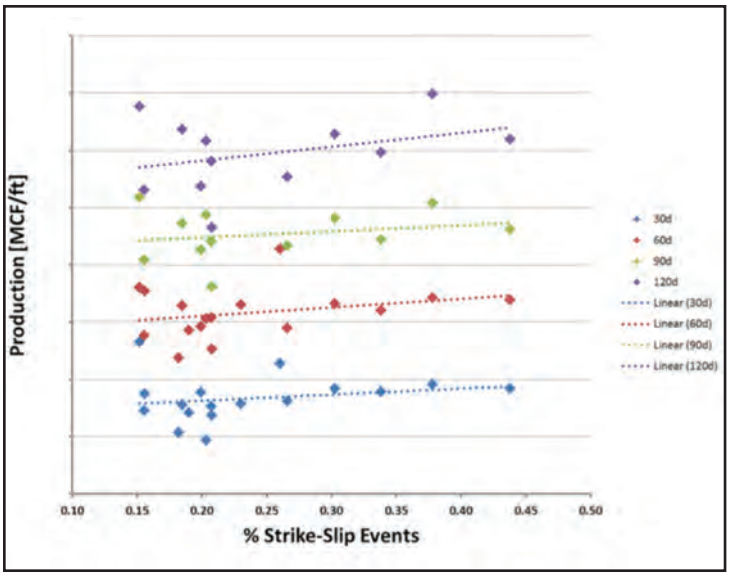
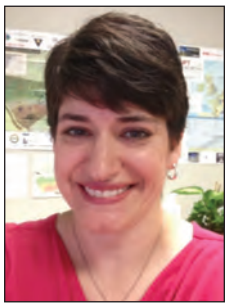


Figure 3: *Correlation between percentage of strike-slip events and normalized gas production.*

Predictive modeling was done to test the possibility of the reactivation of both joint sets. A discrete fracture network (DFN) model was constructed using information from the microseismicity, along with a stochastically-generated fracture set representing the pre-existing J1 and J2 joint sets, and a series of simulations were run in a DFN-based hydraulic fracture stimulation program. The results suggest the vertical stress dominates in the beginning of treatment and that stimulation can also cause failure on joints at a high angle to maximum horizontal stress. ■

Biographical Sketch



Cherie Telker began her geologic career in 1999 as the president of Environmental Consulting & Remediation, Inc., a Missouri based company providing services to the downstream petroleum industry. In 2007, she moved to a job at Chevron Energy Technology Company in Houston, Texas. Cherie did finite element modeling as part of the rock mechanics team at Chevron. In 2011, she joined MicroSeismic, Inc. As head of the geology department, Cherie personally oversees the quality of each project performed by her team, in addition to her own work modeling discrete fracture networks from microseismic results.

Ms. Telker earned a Bachelor of Arts from University of Missouri in Columbia, Missouri, and a Master of Science in geology from Missouri University of Science and Technology in Rolla, Missouri. She is a member of American Association of Petroleum Geologists (AAPG) and has authored and co-authored several technical papers.

This presentation is based on the following two papers:

Neuhaus C.W., Williams-Stroud S., Remington C., Barker W.B., Blair K., Neshyba G., McCay T., "*Integrated Microseismic Monitoring for Field Optimization in the Marcellus Shale*" SPE 161965, SPE Canadian Unconventional Resources Conference, Calgary, AB, Canada, October 30 – November 1, 2012

Williams-Stroud S., Neuhaus C.W., Telker C., Remington C., Barker W.B., Neshyba G., Blair K., "*Temporal Evolution of Stress States from Hydraulic Fracturing Source Mechanisms in the Marcellus Shale*" SPE 162786, SPE Canadian Unconventional Resources Conference, Calgary, AB, Canada, October 30 – November 1, 2012

Wednesday, September 11, 2013

Black Lab Pub, Churchill Room • 4100 Montrose Blvd.

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

Cost: $30 Preregistered members; $30 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.

Troy W. Meinen
ERM Group, Inc.

Sustainable Clean Water in Rural Guatemala

Agua Volcano towering over the city of Antigua Guatemala

In developing countries of the world the lack of access to clean water is an ongoing crisis. Many organizations are at work to mitigate the crisis with rain water collection systems, water purification systems, and the installation of water supply wells. In the early summer of 2013, Troy Meinen joined a team on a trip organized by Living Water International to the Nueva Concepcion State in Guatemala to drill and install a drinking water well and to teach general hygiene basics in a small village.

Trailer Mounted LS 300 Drilling Rig

This presentation will include an overview of the general physiography and geology of the Pacific coastal region of Guatemala where the project was completed. This region consists of very rich soil derived from Quaternary volcaniclastic sands and gravels, pumaceous ash, and lahar deposited across the coastal plain by volcanic eruptions and numerous area rivers. Much of the area is developed as fruit or sugar cane plantations and these serve as the major employers for the region. Sustainable and right-sized drilling techniques utilized by Living Water International in this region, water-well construction techniques, and pump installation will be discussed. In this region of Guatemala, the drilling equipment includes a small, trailer-mounted, wet-rotary rig capable of drilling to a depth of more than 300 feet. PVC-cased wells are generally drilled to

HGS Environmental and Engineering Dinner *continued on page 31*

13th ANNUAL
GSH / HGS
SALTWATER TOURNAMENT

Friday, October 11, 2013

The 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 11, 2013 at The TopWater Grill Marina, San Leon, Texas. 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

The Heaviest Individual Stringer:
1 Redfish
3 Speckled Trout
and 1 Flounder

Galveston Offshore Division

Trophies will be awarded for:

The Heaviest Individual:
Ling (aka - Cobia)
King Mackerel
and Mahi-mahi

Registration will be online at: http://www.gshtx.org/en/cev/997

Fishing Participants are $60 in advance which includes:
Launch Fee, GSH/HGS Fishing Cap, Fish Fry Meal after weigh-in, Refreshments, Trophies, and DOOR PRIZES.

Non-fishing family and guests are $10 in advance for the Fish Fry Meal.

For more information, please contact: Bobby Perez (HGS & GSH)
281-240-1234 ext. 3103 Office
281-240-4997 Fax
281-787-2106 Cell
281-495-8695 Home
E-mail: rdphtx@aol.com or r_perez@seismicventures.com

The Geophysical Society of Houston, a non-profit organization, and the Houston Geological Society, a not-for-profit, are 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 multiple media including linked logos on the GSH and HGS websites. This is a great way to entertain friends, family, business associates, and clients. So come ON BOARD!

DISCLAIMER:
The Geophysical Society of Houston / Houston Geological Society will not be held responsible for injury or accidents during this event. PRACTICE SAFETY!!!!!

HGS Environmental & Engineering Dinner continued from page 29

Local children pumping water from the new well

Devan Meinen preparing to add drill pipe

depths of 100 to 300 feet to provide clean water to replace the 10 to 15 foot deep hand dug wells that are commonly constructed in the area, which are susceptible to contamination.

The final portion of the presentation will review the format and style of hygiene lessons which were offered. The lessons provide information that allowed community leaders and families better understand the ways that numerous common waterborne diseases spread in the area. The goal of this presentation is to provide a glimpse into one organization's processes for addressing the critical water issues present in our world today. We encourage HGS members to utilize their professional expertise and time to make a difference in improving people's health. ■

Biographical Sketch

Troy W. Meinen is a Texas Professional Geoscientist and Senior Project Manager with the ERM Group, Inc. in Houston. Over his 16-year career, he has worked on a wide variety of industrial facilities and upstream oil and gas projects addressing contaminated groundwater, soil, and sediment issues.

Mr. Meinen currently manages the investigation and remediation of upstream oil and gas sites and assists with due diligence for large acreage position transactions for major oil and gas clients. This includes the assessment of water use and protection, property transaction support, environmental impact assessment, environmental permitting and management, and stakeholder concerns.

Over the past 10 years, Mr. Meinen has participated in four trips to Guatemala organized by Living Water International to install drinking-water wells and to teach better hygiene techniques.

Monday, September 30, 2013

HGS Joint International and North American Dinner Meeting

The Westin Houston, Memorial City, 945 Gessner Road
Social Hour 5:30–6:30 p.m.
Dinner 6:30–7:30 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.

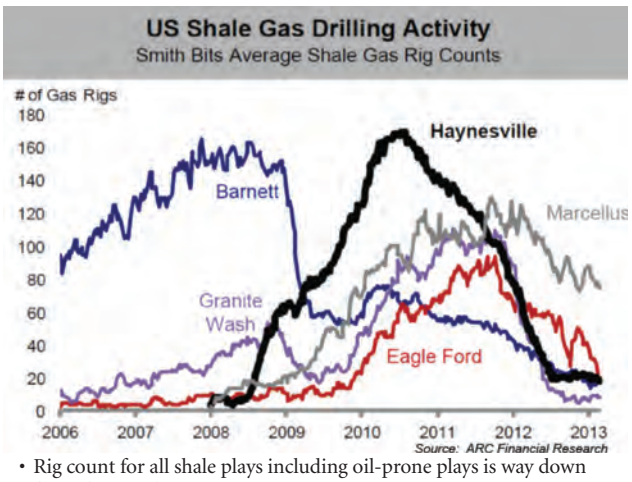
Arthur E. Berman
Consulting Geologist

Let's Be Honest About Shale Gas

After 10 years of production, shale gas in the United States is a commercial failure. The first horizontally drilled, hydraulically fractured Barnett Shale well was completed in 2003 and to date shale gas plays have not produced profits for the principal operators in these plays. This is because decline rates are high, per-well reserves are lower than expected and costs are higher. Few of the analysts and journalists who promote the view that gas will be cheap and abundant for decades have worked a day of their lives in the oil and gas industry.

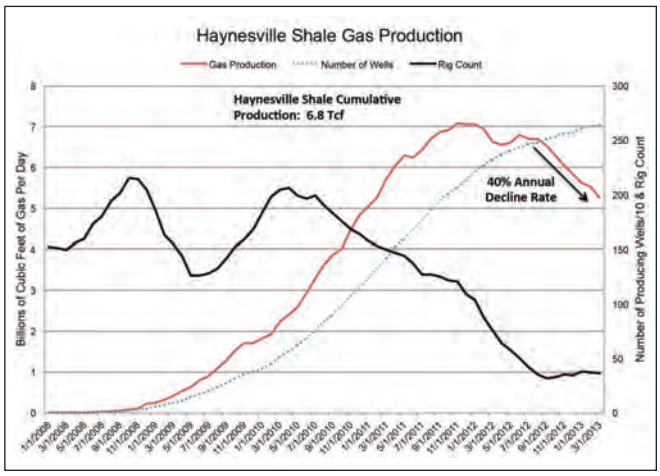
Natural gas prices have been low because of reckless over-production of shale gas that raises ethical and legal questions about the corporate governance of the companies involved. Chesapeake Energy Corporation has led the way in shale gas drilling and production and that company's 2012 financial results call the shale gas business model into serious question. The mainstream opinion that gas will be cheap and abundant for the foreseeable future is the latest in a series of incorrect supply and price predictions that most analysts agreed upon over the past five decades.

Chesapeake lost $949 million in net income in 2012 and took $3.3 billion in ceiling test impairments. The company wrote down 4.8 trillion cubic feet of reserves and its debt was 4.6 times cash from



- Rig count for all shale plays including oil-prone plays is way down from their peaks
- Lower gas-directed rig count means lower future supply.
- Lower future supply means higher future gas prices

Gas-Directed Rig Count in Every Play is Down–Way Down



Haynesville Production is in Decline

operations. For the period of 2008-2012, its cumulative net income was -$3.1 billion and cash flow from operations was -$29.9 billion. For the same 4-year period, the other three leading shale gas producers — Southwestern Energy, Devon Energy, and EOG — had combined free cash flow of -$19 billion and ceiling test impairments of $25 billion. Gas-directed rig counts for all shale gas plays are markedly lower than their peaks in 2010 and the percentage of liquids-to-gas directed rigs has risen from 22% in 2008 to almost 400% today. At the same time, marketed gas production in the U.S. has been flat since December 2011 and year-over-year gas production is decreasing.

Because of high well decline rates, U.S. production has become a just-in-time phenomenon meaning that the drilling can never stop or production will plummet. In the Haynesville Shale play, 68% of second-half 2012 production was from wells that began producing in 2011 and 2012. Current Haynesville production is down 1.8 billion cubic feet of gas per day from the peak in November 2011 and field production is declining at 40% per year.

When viewed objectively, it is impossible to deny that shale gas has been a commercial failure in the U.S. Accounting tricks and unrealistic modeling assumptions are commonly used to make the case for abundant and cheap shale gas for decades but these positions are not grounded in fundamentals. Plummeting gas-directed rig counts and shale play production show that the

HGS Joint International and North American Dinner *continued on page 35*

Geoscience Day 2013

An Overview of Geological and Geophysical Methods for Individuals New to the Industry

Thursday, October 17, 2013
7:00 a.m. to 4:15 p.m.

WesternGeco
10001 Richmond Ave.
Houston, Texas, 77042

See Details & Registration Information at **www.gshtx.org** and **www.hgs.org**

$100.00 Early Registration
$110.00 After September 17 (Limited to 125 Registrants)

- Find out about the life of an oilfield from prospect to retirement
- Field acquisition displays
- Presentations
- Docent-aided displays of "Tools of the Trade"
- Gain perspective for discussing projects with a broad audience
- Understand what work goes on in areas other than your own
- Learn what difficulties and problems must routinely be solved

Presented by Geophysical Society of Houston & Houston Geological Society
Contact: Email: GSH-HGS-Geoscience-Day@seismicexchange.com
Tel: 281-741-1624

Geoscience Day 2013 Registration and Sponsorship Form

Please Complete a Form for Each Attendee or Register Online at www.gshtx.org or www.hgs.org.
Registration is Limited to 125 Participants.

Attendee Name: _____

Address: _____

City/State/Zip: _____

Phone # _____ Cell #: _____ Email: _____

Company: _____

Years of Experience or Industry: _____ Job Title/Function: _____

T-Shirt Size: XL: _____ L: _____ M: _____ S: _____

Sponsorship Fee

Sponsorship Company: _____

Contact Name: _____

Contact Address: _____

Contact Phone # _____ Email: _____

❑ **Platinum**: $2,000.00 ❑ **Gold**: $1,500.00 ❑ **Silver**: $1,000.00 ❑ **Bronze**: $500.00

Individual Event Registration Fee _____ **+ Sponsorship Fee** _____ **= TOTAL** _____

Pay By Check or Credit Card. **Name On Card:** _____

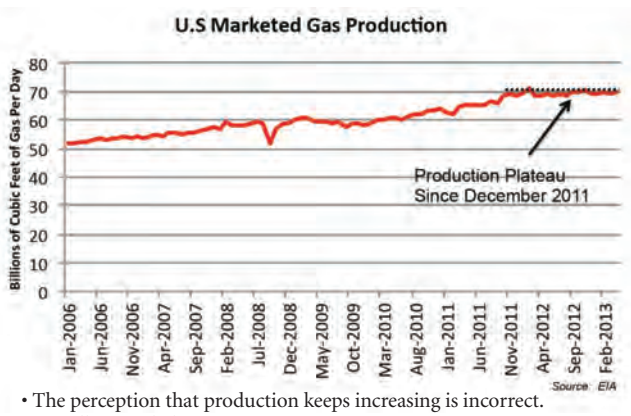
❑ **AMEX** ❑ **VISA** ❑ **MC** **Card #:** _____ **Exp. Date:** _____

Make Checks Payable To:
The Geophysical Society of Houston
Geoscience Day 2013

Mail To: The Geophysical Society of Houston
14811 St. Mary's Lane, Suite 204
Houston, Texas 77079

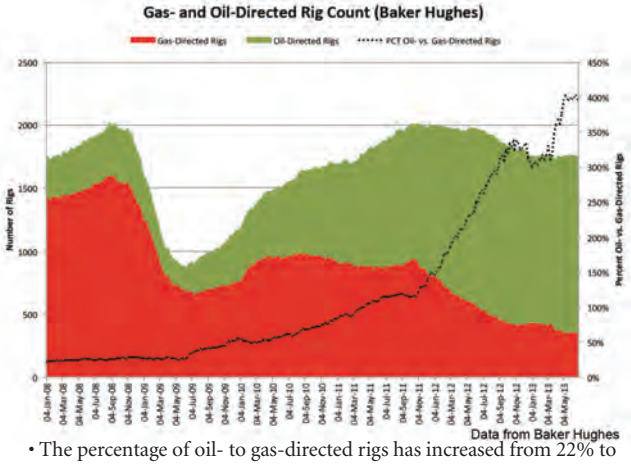
HGS Joint International and North American Dinner

continued from page 33



- The perception that production keeps increasing is incorrect.
- Not all gas is shale gas.

U.S. Production is Flat



- The percentage of oil- to gas-directed rigs has increased from 22% to 394% since 2008
- The industry has voted "NO" on shale gas
- In time, this shift will reduce the over-supply of gas.

The Shift to Liquid–Prone Shale

industry has voted with its feet against shale gas. The unraveling of Chesapeake Energy and the poor financial performance of other leading shale gas producers reveals the flaws in the shale gas business model. Shale gas will not, however, be a commercial failure forever because prices will increase to at least meet the marginal cost of production. More responsible companies will dominate and prosper as the U.S. gas market re-balances and weaker players disappear. ■

Biographical Sketch

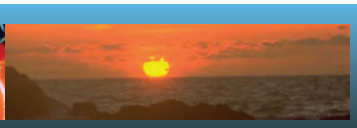
Arthur E. Berman is a petroleum geologist with 35 years of oil and gas industry experience. He worked for 20 years with Amoco (now BP) and 15 years as a consulting geologist. He gives keynote addresses for energy conferences, boards of directors, and professional societies. He has been interviewed about oil and gas topics on CBS, CNBC, CNN, Platt's Energy Week, BNN, Bloomberg, Platt's, Financial Times, the Wall Street Journal, Rolling Stone, and the New York Times.

Mr. Berman is a managing editor and frequent contributor of theoildrum.com and an associate editor of the *AAPG Bulletin*. He is a Director of the Association for the Study of Peak Oil, and has served on the boards of directors of the Houston Geological Society and the Society of Independent Professional Earth Scientists. He has published more than 100 articles on petroleum geology, has been an expert witness, and has done research work for several oil and gas trial and utility commission hearings.

Mr. Berman has a Master of Science degree in geology from the Colorado School of Mines and a Bachelor of Arts degree in history from Amherst College.

September 2013

Sunday	Monday	Tuesday	Wednesday
1	2	3	4
8	9 **HGS General Dinner Meeting** *"Temporal Evolution of Stress States and Correlation of Production with Hydraulic Fracturing Source Mechanics in the Marcellus Shale"* *Cherie Telker, MicroSeismic, Inc.* *Page 25*	10 **12th PESGB/HGS Conference on African E&P** *"Africa: Success in Rift, Sag and Passive Margin Settings"* *Wembley Stadium, London* *Page 15*	11 **HGS Environmental & Engineering Dinner Meeting** *"Sustainable Clean Water in Rural Guatemala"* *Troy W. Meinen, P.G., ERM Group* *Page 29*
15	16 **16th Annual AAPG/SEG Student Expo** *George R. Brown Convention Center* *Houston, TX* *Page 15*	17	18 **HGS Northsiders' Luncheon** *Tentative*
22 **SEG International Exposition and 83rd Annual Meeting** *George R. Brown Convention Center* *Houston, TX*	23	24	25
29	30 **HGS Joint International & North American Dinner** *"Let's Be Honest About Shale Gas"* *Arthur E. Berman,* *Labyrinth Consulting Services, Inc.* *Page 33*		

GeoEvents

Thursday Friday Saturday

5	6	7
12	13	14
19	20	21
26	27	28

You can make your reservations NOW online at ww.hgs.org

Members Pre-registered Prices:

General Dinner Meeting	$30
Nonmembers & walk-ups	$35
Env. & Eng.	$30
Luncheon Meeting	$30
Nonmembers & walk-ups	$35
International Explorationists	$30
North American Explorationists	$30

Reservations:

The HGS prefers that you make your reservations on-line through the HGS website at www.hgs.org. If you have no Internet access, you can e-mail reservations@hgs.org, or call the office at 713-463-9476. **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.** 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. **No-shows will be billed.**

September 8-11, 2013
AAPG International Conference and Exhibition, *Cartagena, Colombia*

September 18-22, 2013
American Federation of Mineralogical Societies 2013 Convention and Show
Jacksonville, FL

September 24-24, 2013
NGWA Focus Conference on "Fractured Rock and Eastern Groundwater Regional Issues"
Burlington, VT

September 25, 2013
WTGS Fall Symposium
"Reinvigorating the Permian Basin"
Midland, TX

October 3, 2013, 2013
HGS Short Course – "Microseismic Monitoring Fundamentals"
Houston, Texas

October 6-10, 2013
Clay Minerals Society – 50th Anniversary Meeting, *University of Illinois Urbana Champaign*

October 6-8, 2013
GCAGS and SEPM, 63rd Annual Convention, *New Orleans, Louisiana*

October 13-19, 2013
Earth Sciences Week

October 17, 2013
Environmental Challenges and Innovations Conference
Texas Association of Environmental Professionals, *Houston, TX*

October 21, 2013
HGS Golf Tournament
Kingwood Country Club

October 23-26, 2013
AIPG 50th Annual National Meeting
Broomfield, CO

October 27-30, 2013
GSA Annual Meeting & Exposition Celebrating 125th Anniversary
Denver, CO

HGS Guest Night 2013 Amazed the Audience with Vision of Mars

By David Reynolds

On June 8th, almost 400 guests and HGS members gathered for the annual Guest Night evening at the Houston Museum of Natural Science. A buffet dinner was served among the fantastic fossils of the new Morian Hall of Paleontology. The evening's events then moved into the auditorium for the formal presentation. President **Martin Cassidy** welcomed the audience and introduced the students who received HGS recognition for their projects at the March 2013 Science and Engineering Fair of Houston. Students **William Wu**, **Sharron Serio**, and **Yashi Prasad** were present to describe their projects and receive a plaque and Field Guide to Texas Geology.

The sponsors of Guest Night included BHP Billiton, TGS, IHS Kingdom, Schlumberger and FairfieldNodal. **Dave Reynolds** joined the audience in showing appreciation for their generous contributions to a festive Guest Night.

The keynote speaker was **Dr. Dawn Sumner,** professor of geology at University of California at Davis and co-investigator for NASA Mars Space Laboratory team. Dr. Sumner's presentation "Curiosity on Mars: Latest Results from the first Grey Rocks from the Red Planet" began with a fantastic 3-D movie showing the parts of the Curiosity rover — seeming so close you could touch it! She transitioned to images from Mars that helped explain some of the challenges her team faced while looking for signs of life on Mars. It was fascinating to realize that the rover may find evidence similar to some of the oldest fossils in the museum — algal stromatolites. If you want to watch Dr. Sumner's talk again, it is available as a video on YouTube.com under the HGSGeoEducation Channel. Type this link into an internet browser (http://youtu.be/WFIgup8Hs0M) or go to the HGS webpage under Multimedia and click on Education videos.

The evening concluded with a viewing of the movie "Rocky Mountain Express" that showed some of the obstacles the Canadian Pacific Railway overcame in building the railway through the Canadian Rockies.

The support of many helpers made this Guest Night another success. The HGS office staff — **Nina Hoeny**, **Jill Kimbell** and **Troy Fearnow** were invaluable. **Sue Pritchett** and **Rebecca Harkins** helped with student recognitions. Wayne Xu was the photographer, and **Linda Sternbach** created the video presentation on the HGS website. **Lucy Plant** and **Suzie Reynolds** managed the registration table. **Bill Osten** provided posters, brochures, and presentation support. Make plans to sign up early for Guest Night next year ! ■

HGS Guest Night 2013 continued from page 39

2012–2013 President's Night

June 15, 2013
Houstonian Hotel

30th Annual HGS Skeet Shoot

by Tom McCarroll, Skeet Shoot Chairman

One hundred thirty-six shooters turned out on Saturday June 22 for the 30th Annual HGS Skeet Shoot. The skeet fields at the Greater Houston Gun Club in Missouri City were lush and green from the recent rain, but the weather stayed dry (and hot!) for our 50 target shoot. We were treated to a great BBQ lunch by the Halliburton Cooking Team and Blueback Reservoir and Live Oak Environmental supplied cold drinks, water, and beer for the thirsty crowd. INEXS had their popular cigar table set up to add some tobacco smoke to the smell of burning gunpowder. Thanks to our generous sponsors, we were able to raffle off 32 gift cards from Academy and Bass Pros. ■

The trophy belt buckle winners were:
High Over All: *(46 of 50) Tom McCarroll,*
HOA Runnerup: *(45) Drake Davis*
AA Champ: *(45) Greg Moredock*
AA Runnerup: *(44) Gready Hunter*
A Champ: *(37) Marvin Rathke*
A Runnerup: *(37) Mike Kasecky*
B Champ: *(30) Chris Adams*
B Runnerup: *(30) Gary Guerrieri*
C Champ: *(22) Earl Wells*
C Runnerup: *(22) Steve Brachmann*
Ladies Champ: *(41) Karen Ward*
Ladies Runnerup: *(22) Karen Sontag*
Two-Man Flurry Winners: *Steve Mitchell* and *John Foley* with a score of 28 of 30.

Thank you to our sponsors!

HALLIBURTON

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Pearl OIL ENERGY SERVICES INC.

EMPIRICA The Surface Logging Company

SCA

CL&F RESOURCES LP

Photo credit: Tammy Price of Z-Terra Inc.

Skeet Squad

Skeet Shooter

Sofia picking raffle tickets for door prize winners.

Two Man Flurry

Halliburton Cooking Team

Vendor Corner Recognition and Thanks

The Houston Geological Society would like to recognize and thank its many vendors who demonstrated their financial support of the HGS by providing "Vendor Corners" for our 2012-2013 evening technical meetings. These are the companies who present poster session displays of their products, studies, and/or services. Each provided a great focal point for the attendees, during the gathering and are the companies who present for the social period prior to the evening dinner meetings. The Vendor Corner fees are donated 100% to the HGS Scholarship Fund for undergraduate geosciences students and to the HGS Student Membership Initiative.

If your company would be interested in presenting a Vendor Corner at an upcoming technical meeting, please contact Paul Babcock at pbabcock@sabinoil.com or (832) 242-9650.

The HGS would like to thank the following:

A&B Labs – Bethany Sapp, Ram Ramakrishnan
*__Dickson International Geosciences (DIGS)__ – Bill Dickson
*__Fugro GeoConsulting__ – Dan McConnell
Fugro Gravity & Magnetics (Now CGG) – Jeff Rowe
Fugro Multi-Client (Now CGG) – Mike Whitehead
Fugro Robertson (Now Robertson Inc., a CGG Company) – Lucy Plant
GAINCO Environmental Solutions – Richard McCormack, Cheryl Miller
*__Geochemical Solutions International (GSI)__ – Craig Schiefelbein
Headwave – Sabrina Birdwell
*__INGRAIN__ – Jeff Martin
Mathers Environmental – Tom Mathers
*__Micro-Strat Inc.__ – Walter Wornardt
*__Saudi Aramco__ – Kristoffer Rollins
MILCO Safety Rental – Tim Beyer
TGS-Nopec Geophysical Company – Mike Hebert, John Adamick
Wildcat Technologies – Albert Maende
**Hosted more than one vendor corner*

Outstanding Student Awards

Each year, the Houston Geological Society recognizes outstanding students from area universities. Students are selected for recognition based on nomination by their faculty. HGS awards each outstanding student with a $500 prize, publication of their biographical sketch in the HGS Bulletin, and a plaque all to be presented at the October HGS General Dinner Meeting. This year, the following students have been selected by faculty and HGS for outstanding academic achievements and contributions to geology

Michelle LaComb

Rice University

Michelle LaComb is a Rice senior with a double major in Earth Science and Chemistry. Michelle's fascination with science began at an early age when she knew that she wanted to work in the field of scientific research. Among other interests, she started building her own large rock and mineral collection — a hobby that grew out of being among so many types of rocks and minerals in the desert of her home state, Arizona. This fascination paid off during her high school years. She took first prize for four consecutive years at the Science Olympiad, Rocks and Minerals category for the state of Arizona. She also found time to work at the University of Arizona doing soil science research as part of her high school studies, while studying the geology of the Atacama Desert in Northern Chile.

A National Merit Scholar, Michelle started her work at Rice thinking that she would eventually become a chemistry researcher and educator. She became an undergraduate chemistry tutor starting in her sophomore year, a position she has retained throughout her studies at Rice. It was only in her junior year that she took her first Earth Science course at Rice — Professor Cin-Ty Lee's Earth Chemistry & Materials course. She says that with that course, she knew that her interests had permanently taken a new direction. She decided to sign up with a second major in Earth Science and build her career in the field, focusing on the chemistry underlying geological processes deep within the Earth. She will be entering Stanford in fall 2013 as a doctoral student to research geological and environmental science where she will focus on researching silicate minerals in high pressure, high temperature conditions. She already has made an impression. The Stanford School of Earth Science has named her as the sole incoming graduate to receive a three-year Stanford Graduate Fellowship in Science and Engineering.

While at Rice, Michelle began a student volunteer group called Owlchemy, a club of 80 members that focuses on community outreach to local children. The volunteer group has been responsible for arranging science demonstrations in museums, schools, and on Rice's campus for the past four years. Each weekend, science undergraduates whom she recruited have worked as volunteers at the Houston Museum of Natural Science giving children free, live demonstrations in a variety of topics to show them why "science is cool." Among the favorites are using liquid nitrogen, making "elephant" toothpaste and showing how density can be measured using regular Coke and Diet Coke.

Wesley Buckner

Sam Houston State University

Wesley is attending his third year at Sam Houston and plans on graduating in May 2014 with a minor in mathematics. He will be attending the University of Missouri geological field camp over the summer. He is currently secretary for the Sam Houston Association of Geology Students and regularly attends club events and field trips. Wesley is currently an instructor for undergraduate Physical Geology labs. After graduation, Wesley plans to attend graduate school and pursue a career in the petroleum industry.

Bryan Byrd

Stephen F. Austin State University

Bryan Byrd is pursuing a master's degree in geology at Stephen F. Austin State University studying megaporosity development and secondary mineralization associated with hydrocarbon migration in West Texas. He is incorporating geophysical, geochemical and stratigraphic data to develop a model for the formation and evolution of Amazing Maze Cave, hosted in the Fort Terrett Limestone in Pecos County, which shows similar characteristics to the porosity structure and mineralization in the Yates Field region. Bryan completed a Bachelor of Science degree in geology in spring 2011 and is projected to receive a Master of Science degree in geology in summer 2013. Bryan is a strong student and has maintained high academic scores. He is an active member of the SFA chapters of the American Association of Petroleum Geologists, the Association of Environmental & Engineering Geologists, and Sigma Gamma Epsilon (Geology Honor Student Organization).

Outstanding Student Awards *continued on page 51*

The Right Source. The Right Course.

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AAPG Members	$1795	$1995
Non Members	$2095	$2295
Individual Courses	$500/day	$550/day

Outstanding Student Awards continued from page 49

Benjamin Blumenthal

Texas A&M

Benjamin Blumenthal graduated from Belton High School and entered Texas A&M University in 2009. He is an Eagle Scout, an accomplished trombone player, and member of the National Honor Society and the Geology and Geophysics Honor Society. During his time at Texas A&M, he has worked as a student intern at Jacobs Engineering and the Texas Water Resources Institute. His work at the TWRI led to the publication of a paper in the *Journal of Natural and Environmental Science* (now in press) of which he is coauthor. Benjamin will graduate with a Bachelor of Science in May 2013, after which he will enter the masters program at Texas A&M to study hydrogeology. He plans to pursue a career in either hydrogeology or in the petroleum industry.

Luanxiao Zhao

University of Houston

Luanxiao Zhao is a Ph.D. candidate in geophysics at the Department of Earth and Atmospheric Science at the University of Houston. With great passion to become a geoscientist, Luanxiao received his Bachelor of Science degree in geophysics from China University of Geoscience. Then he obtained his master's degree in geophysics from Tongji University in China. In 2010, he started to pursue his doctorate in geophysics at the University of Houston. Luanxiao's research interests focus on seismic rock physics, petrophysics, seismic poromechanics, and reservoir characterization. He has published several technical papers and abstracts for scientific meetings.

Luanxiao is a member of the Society of Economic Geologists, the European Association of Geoscientists and Engineers, the American Association of Petroleum Geologists, and the Society of Petrophysicists and Well Log Analysts (SPWLA). He has received several awards and grants from these organizations based on his research in graduate school. During the pursuit of his doctorate, he has also enjoyed working with Maersk Oil, ExxonMobil and BP for his summer internships.

Meijuan Jiang

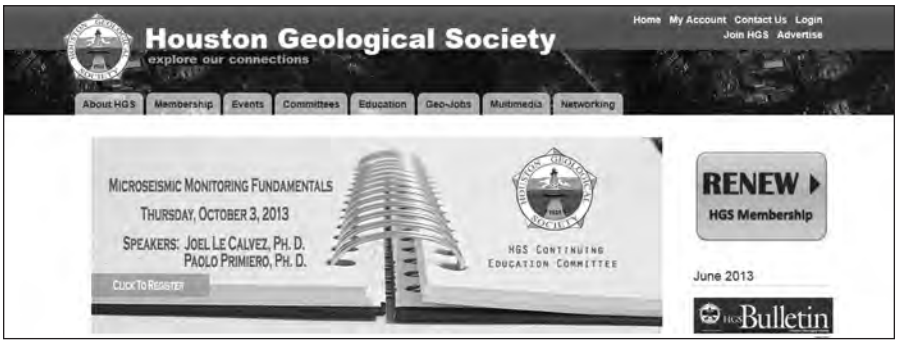
University of Texas, Austin

Meijuan Jiang is currently a Ph.D. candidate in geophysics at the Jackson School of Geosciences at the University of Texas at Austin, supervised by Dr. Kyle Spikes. She received her Bachelor of Science degree in geophysics from the University of Science and Technology of China, and her Master of Science degree in statistics from the University of Illinois at Urbana-Champaign. Before entering UT Austin in 2010, she conducted research on global seismology, investigating crustal structures in different continents using broadband seismic data.

Her current research at UT Austin focuses on exploration geophysics, specifically characterizing the reservoir properties of the Haynesville Shale and understanding exploration and production of unconventional gas shales by integrating rock physics modeling and seismic inversion. She has presented her findings at numerous conferences and has several papers and expanded abstracts published or submitted. In addition, Meijuan has ongoing interactions with the petroleum industry, including making presentations at consortium meetings for multiple sponsoring companies, active in collaboration with BP, summer internships at Shell, ExxonMobil's geophysical short course, and several software training classes. She is also a reviewer of expanded abstracts for the Society of Exploration Geophysicists (SEG) and serves as speaker liaison for the SEG Student Chapter at UT Austin ■.

The New HGS Website – Looking Back and Ahead

by John Dombrowski



In August 2012, the HGS went 'live' with a newly redesigned, self-managed website. Now, one year later, we take time to reflect on the learning experiences, the problems overcome, and the improvements made, and to discuss and share planned improvements. Management of our prior website was contracted out to a local provider named Schipul. Schipul was doing a credible job of helping the HGS maintain the website and manage our digital database. Overall, things were working well enough, so why change? Two reasons: flexibility and cost.

Why Change?

While capable, the Schipul architecture did not allow for some of the functionality we wanted. The framework was shared across the Shipul client base, and their template driven solutions made customization a challenge. Additionally, the annual costs for the website and database support and management were becoming a serious financial concern. After months of research, discussion, and planning our Executive Board voted to make the change to a more powerful content management system that would meet current needs while providing the flexibility to implement more robust features to better serve our members. Simply stated, the vision of the Board was to create a website that would become an indispensible tool for the members and a more valuable asset for the HGS.

To that end, the firm of L. Porter and Associates (LPA) was hired to help us create a new website. They recommended an open source solution pairing Drupal, a content management system with CiviCRM, a customer relationship management product for non-profits. During the course of many months LPA worked closely with the HGS Web Management Committee Chair **Linda Sternbach**, Webmaster **Kathy Sanvido**, and several Board members to ascertain what we wanted in the new website. Once designed, several weeks of testing by both LPA personnel and a handful of technically savvy HGS volunteers ensued. The target of having the new website up and running before the start of the 2012-2013 fiscal year was achieved when the site went "live" on August 17, 2012.

Did We Succeed?

Was the new website everything that we hoped it would be? Well, the short answer is … not right away. Even with the testing period and expertise of LPA, there were a few unforeseen problems. Some data did not transfer properly during the migration of our database of member information from Schipul to the new system causing some members to have difficulty in renewing their memberships. Quite a few members ended up calling the office for help in resetting passwords and renewing memberships. This was partly due to errors in applying the appropriate member status to each member profile. Diligent work by our office staff, Office Manager **Nina Hoeny**, and **Kathy Sanvido**, helped identify and resolve these problems.

Since then, we have been working very diligently on database integrity, correcting missing or incorrect information and eliminating duplicate or bad records. This has taken several months, but our member database has been thoroughly checked and is being corrected for the start of the 2013-14 business year.

Another unforeseen complication occurred when our very capable Webmaster **Kathy Sanvido** informed us that she was leaving. Kathy had been training on the new systems with LPA and was critical in assisting members who were experiencing problems with their renewals. Kathy's reason for leaving was personal, and it is unfortunate that it happened at such a difficult time. Now, in the midst of changeover, we found ourselves searching for a replacement webmaster, hopefully one experienced with the underlying technologies of the new website. A search committee led by **Linda Sternbach** was able to quickly identify four good candidates leading to the hiring of our current Webmaster **Troy Fearnow**. Troy brings considerable experience to the position, having designed and managed websites for a number of businesses. He hit the ground running and has impressed us all as a quick learner with excellent people skills.

Addressing the Challenges of the Committee Pages

Key components of the new website are the individual committee pages. Members who make up the various HGS committees are the life-blood of our society. We simply could not function without their dedication, time, talents, and effort. On the new website, each committee has its own webpage. The intent was to populate each page with information and content unique to that committee. This did not turn out as well as envisioned. Some committee pages lacked critical contact information for key members. Links for affiliated organizations were sometimes missing and some pages were located under unrelated groups. The committee chairs and members provided a lot of constructive feedback about their

The New HGS Website *continued on page 55*

Remembrance

Derek Main, PhD
August 8, 1971 – June 7, 2013

Dr. Derek Main, the director of the Arlington Archosaur Site, died on June 7 in Dallas, less than a month after receiving his doctoral degree from the University of Texas at Arlington. Dr. Main, who was a graduate student and lecturer at the University of Texas in Arlington, led many "dino digs" at the Archosaur site, a 2,000-acre parcel near the Viridian housing development. Since 2008, Dr. Main and groups of students excavated rare fossils that included prehistoric turtles, sharks, crocodiles, and duck-billed dinosaurs.

Dr. Main received his B.Sc. in geology from the University of Texas-Dallas in 2001 and his M.Sc. in geology from UT-Arlington in 2005. His doctoral dissertation was on the Appalachian Delta Paleoecology of the Cretaceous Woodbine Formation at the Arlington Archosaur Site, North Texas.

Memorial contributions to Derek Main may be made to the Dallas Paleontological Society Scholarship Fund and the Arlington Archosaur Site (www.arlingtonarchosaursite.com).

Dr. Main was the featured speaker at the HGS Guest Night in May 2011, at which he gave a talk on Wildlife Paleoecology along the Cretaceous Coast of Texas. ■

~ by David Miller

Should you hear of a fellow HGS member's or contributor's passing, please send information to the Editor-Elect at davidwayne.miller55@gmail.com.

Meet the new HGS Webmaster – Troy Fearnow

By Linda Sternbach

Troy Fearnow comes to HGS with 17 years experience developing Internet technologies. He has web systems administration skills and two patents on web technology. Troy has a Bachelor of Business Administration degree in finance from the University of Texas at Austin. He was the founder of Accrue Search Concepts started in 2008 and an Internet venture called Boounce that uses multiple search engines. He led teams of freelancers and contractors to solve web problems. He also created a website to market fine arts called www.fine-art.com where artists can sell directly to customers. The membership on that site grew to 40,000 people.

Troy's technical and management skills shined in September 2012 when he was hired as the HGS Webmaster. He quickly assessed that the new HGS website needed reprogramming and customer support on passwords and user ids because of problems deep in the database. He brought the website from a bumpy launch in September 2012, navigated tight situations, and by the end of 2012, the website entered into a much more stable comfort zone. The basic functions of taking payments, registering people for activities and sending out notices and emails were quickly debugged and improved. Many members had their user name and password issues resolved quickly by contacting Troy at troy@hgs.org or webmaster@hgs.org.

Troy lives in the Woodlands, Texas, north of Houston, with his wife and has three young sons. He is related to HGS members Steve Getz of the North American Explorationists group, and Eric and Ethan Getz, both geoscientists and computer experts. Networking is all in the family! ■

The New HGS Website continued from page 53

urgent concerns. We needed to address these concerns and do it quickly. The vehicle chosen to do this was the first-ever Chair Fest. The committee chairs were invited to a dinner meeting to learn about the new website and to meet HGS Webmaster **Troy Fearnow**, members of the beefed-up Web Management Committee, and Board members. Most importantly, this meeting involved an open discussion about how to provide a more useful website. The evening was a great success. All of the feedback, suggested improvements, and enhancement requests were captured and prioritized. Several of the improvements have already been implemented and more are on the way. Training for committee members is planned for August or September 2013. This training will equip each committee with access privileges and the knowledge to add, change, or delete content and greatly improve their pages.

As you can see, we did experience some growing pains during the roll-out of the new self-managed website. It is important to note that through a lot of hard work and application of additional financial and human resources, most of the initial problems have been solved or are now being addressed. As we enter our second year with the new website, it is much improved and is quickly becoming a dependable asset for our members.

People Who Support the Website

The hiring of **Troy Fearnow** was extremely fortunate for HGS. However, management of our website by one person, as opposed to a large commercial entity with a large staff of technical experts, is probably not realistic. Once the new website was delivered and the contract with LPA concluded, the Board recognized the importance of having a resource with technical expertise available to Troy for those issues beyond his current expertise. The Houston firm, eMUNICATIONS.com was identified and retained to assist with website maintenance and to be a resource for technical support. They have proven to be a cost-effective resource and a good business partner.

In addition to a new Webmaster, HGS has hired an Administrative Assistant, **Jill Kimble**. Jill has many duties, not the least of which is assisting with the website. She is training to help members in resetting their passwords and registering for events. This frees Troy to focus on more strategic issues.

The Web Management Committee has become another important resource addressing all website related issues. The committee has grown from one person to a multi-member group thanks to the efforts of Chair Sandi Barber. They work closely with the office staff and coordinate with the HGS Board. Some of the responsibilities of this committee are to develop policies for the administration of the website, identify and prioritize work requests, and plan for the growth and evolution of the website. Members of this committee have an impressive array of managerial and technical expertise such as project/program management, process mapping and design, web management, technical computing, Information Technology, and editorial experience. Members include:

Sandi Barber, Chair	Program/Process Management, Change Management, Process Mapping
Sameer Baral	Chair of NeoGeos with a strong technical computing background
Patricia Santogrossi	Past Editor of the HGS *Bulletin*
Linda Sternbach	Former Chair of the Website Committee, current Video Committee Chair
Tarek Ghazi	Past HGS Webmaster, IT professional
John Dombrowski	Director, liaison with the HGS Board
Troy Fearnow	Current Webmaster (advisory position)

So What's Next?

In addition to the ongoing tasks of maintaining database integrity and ensuring that the many modules that comprise the website (e-commerce, ballot, calendar, etc.) are working properly, there are some new initiatives in the works. These are:

- Developing a training session for Committee Chairs and/or their designates that will allow them to customize and better manage their individual Committee Pages. This training will focus on how to edit content, manage their calendar, and better link to their constituencies. We are targeting August or September for this training.

- Review the website hierarchy of pull-down menus with an eye towards simplifying and better organizing the menus. There will also be some aesthetic improvements to the new structure. We hope this will be implemented with Board approval in the next couple of months.

Several issues were raised that are still under consideration. Many of these issues center on the appearance of the website (e.g., design, fonts, color, etc.) and will be addressed as time and resources permit.

In summary, the first year of our new website has been exciting and challenging, but not without problems. Significant resources in terms of money, time, and labor have been dedicated to the management and improvement of our website. We have come a long way and are well positioned for continued improvement in the coming year. We are confident that, before long, HGS will have an incredible tool for our members' benefit. Our website is fast becoming one of the most valuable assets within the HGS. ■

HGS Welcomes New Members

New Members Effective June 2013

ACTIVE MEMBERS
Aaron Bateman
John Bauer
Jake Carter
David Drowley
MarkDurway
Kristen Echols
Hamed Elmowafy
Tatiana Gilstrap
Scott Glidden
Ken Glover
Allen Hemmy
Steven Hochstein
TreVor Howald
Cody Kersten
Vishal Maharaj
Reed Malin
David Mirakian
Claire Mondro
Rick Moran
Jeffrey Olson
Frederico Ribeiro
Laurie Richards
Kari Schultz
Peter Senior
Cesar Silva
Brendan Sullivan
Julian Talley
Joe Valenti
Tom Wooltorton

ASSOCIATE MEMBERS
Leslie Friedrich

STUDENT MEMBERS
Ian Ambrosius
Matt Case
Alex Dale
Joseph Downing
Lauren Kendall
Adam Lee
Keeton Little
Maria Carolina Mejia Hernandez
Martin Schwed

New Members Effective July 2013

ACTIVE MEMBERS
Jeff Aldrich
Jaclyn Carrington
Michael Coffer
Patrick Donnelly
Joseph Eidson
Paul Garvey
Mariasabel Johnston Romandini
Shawn Kushiyama
David Liner
Richard Lomax
Bret Neff
Iain Pirie
Robert Swift
Allison Teletzke
Linda Vasse
Brigitte Wetz
Melissa Zambrano
Hongwei Zhu

ASSOCIATE MEMBERS
Sharon Abernathy
Jorge Aguilar
Matthew Singletary

EMERITUS MEMBERS
Robert Behrman, Jr
Swapan Bhattacherjee
Robert Fuller
Edgar Guevara
Stephen Hamm
Al Krejci
J. David Lazor
James Lowe
Kenneth Mallon
James Miller
Russell Sharp
F. William Vollenweider
Carl White

STUDENT MEMBERS
Ben Blumenthal
Shari Hilding-Kronfrost
Johnathan Jarrett
Jordan Jones
Mohammed Rahman
Samin Raziperchikolaee
Andrew Reissig
Abdelsalam Yuonis

Welcome New Members

Directory of Oil Company Name Changes

23rd Edition (April 2013)

New Edition

The new 23rd 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, 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
Phone: (888) 839-4365
www.beg.utexas.edu

Geological Website of the Month

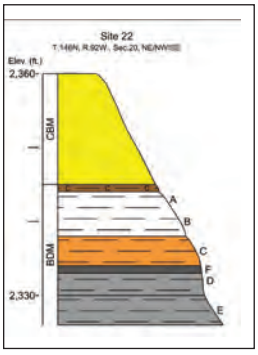
North Dakota Geological Survey
www.dmr.nd.gov/ndgs

By Michael F. Forlenza, P.G.

One of the hottest oil and gas exploration areas in the United States right now is North Dakota. The number of active drilling rigs in North Dakota as of July 2013 was 189, according to the Department of Mineral Resources. This is up from less than 20 in 2004. The primary focus of the hydrocarbon hunters in the Williston Basin is the Bakken Formation which underlies a large part of western North Dakota. Oil production in the state has increased from less than 100,000 barrels per day in 2005 to more than 700,000 barrels per day today. So this might be a good time to check out the website for the North Dakota Geological Survey (NDGS).

The website for the NDGS is a subpage under the website for the North Dakota Industrial Commission, Department of Mineral Resources. Oh, the ignominy. The NDGS is an unadorned homepage in muted tones with a colorful logo, an uncaptioned photograph, some background text, and a list of about 25 links in a column down the left side. Very little scrolling is needed. They keep things simple out on the prairie.

The homepage links connect to subpages presenting information related to the state's geology and mineral resources. Most of these subpages are rather spare in appearance and lean in the amount of information available. There are homepage links to clay maps, coal maps, landslide maps, surface geology maps, uranium maps, and volcanic ash maps. Perhaps the best part of the website is the paleontology page. This page features a small geological map of the state with illustrations of extinct beasts that once roamed the area. Click on the any of the illustrations and up pops a stratigraphic column and brief description of the fossil and the living animal.



Clay resources

Many of the subpages have not had much attention in some time. The page for Petroleum Conference has links to the annual Williston Basin Petroleum Conference and Prospect Expo but only for the years 2006 through 2008. Navigation around the website is a bit clunky as it can be difficult to figure out how to get back to the homepage without using the Back button or reloading the website.

Most of the interesting and useful information related to hydrocarbon exploration and production is found on the companion website for the North Dakota Oil and Gas Division, also a subpage under the North Dakota Industrial Commission. The Oil and Gas Division webpage obviously gets more attention than the NDGS webpage. The Oil and Gas Division homepage, while not very attractive, has links that are current and job openings are splashed across the screen in glaring yellow bands.

The NDGS was created by an act of the North Dakota Legislature in 1895. After more than 110 years, the Survey still serves as the primary source of geological information in the state. Its mission over the years has grown and is now three-fold: to investigate the geology of North Dakota; to administer regulatory programs and act in an advisory capacity to other state agencies; and to provide public service to the people of North Dakota.

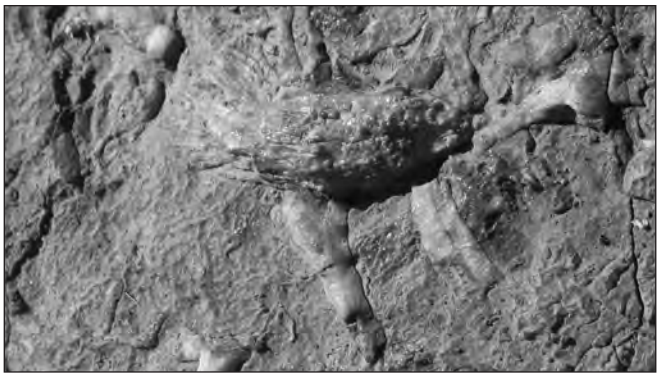
In some ways the absence of sophistication of the NDGS website is understandable. North Dakota is, after all, a state with a small population and probably a small state government. So, while the state is blessed with a richness of natural and geological resources, one will need to look elsewhere for comprehensive information. ■

HGS Grand Canyon Field Trip 2014

June 15 – 23, 2014

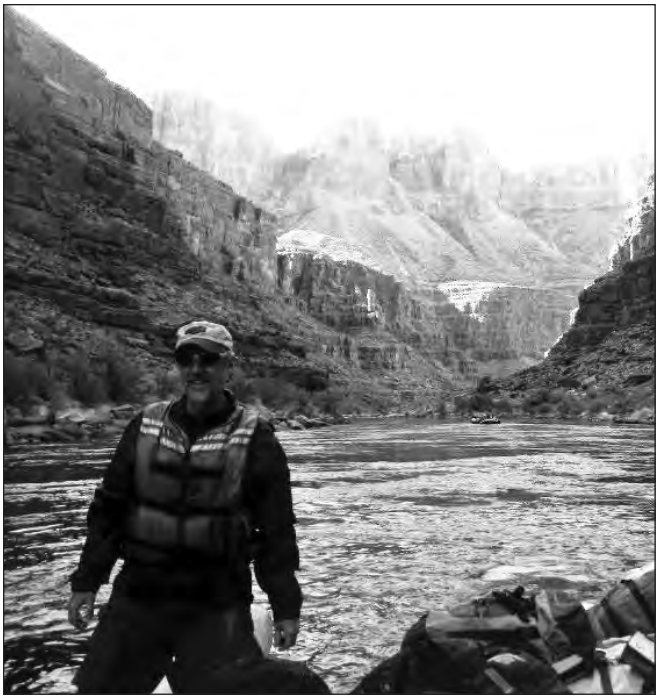
In Marble Canyon. Photo courtesy of Paul Walsch.

Please join the HGS June 15-23, 2014 on this special "Journey Through Time" as we raft and hike the magnificent Grand Canyon. We will see and discuss the classic geology which is laid out before us, everything from Precambrian strata to recent volcanics and the sedimentary processes which continue to shape the canyon today. Geological concepts will be introduced and beautifully illustrated within the Grand Canyon; in this way, the geology comes alive and is readily accessible to all knowledge levels. We will run rapids, take a number of short hikes, play in several of the side creeks, eat like royalty and sleep under the stars. Your river guides and gear are supplied by Hatch River Expeditions, the most experienced outfitter serving the Grand Canyon. Past participants have stated this was the best geologic trip they ever took and many have brought their "significant other" or a family member along to share this incredible experience with them. Cost of the trip is $3,320 per person. We can only take 28 participants, so you are encouraged to secure your seat now with a $300 deposit; the balance will not be due until January 10th.



Fossils in the Mississippian Red Wall Limestone.

While this is not strenuous trip, participants must be in good enough physical condition to climb in and out of the rafts. We will have some hiking each day, the longest hike is about 6 miles and several hikes require some scrambling. Any of the hikes are optional, but you are encouraged to participate in as many as you can to fully experience this extraordinary trip. The rafts are motorized, so we can do the entire length of the Canyon in one week, and are very stable for running the many rapids on the Colorado River.



Trip leader, Steve Earle. Photo courtesy of Bernie Clinton

Navajo Bridge, a couple mile downstream from Lee Ferry.

"Girls just wanna have fun," Clear Creek side canyon.

One of our river guides, Rachel, at the helm. Photo courtesy of Bernie Clinton.

Our last trip here was in 2012 and we kindly refer you to the article in the October 2012 issue of the *HGS Bulletin*.

The trip begins and ends in Las Vegas. We will provide transportation from Las Vegas to Marble Canyon and the first night in Cliff Dwellers Lodge, food and drink for 8 days/7 nights on the river, a helicopter ride to Bar 9 Ranch the last day, and the flight from there back to Las Vegas. Optionally, you may join us in Marble Canyon and Hatch will arrange a return flight to there at the end. Costs not covered include airfare from your home to Las Vegas and anything you might spend there, first night's dinner in Marble Canyon, souvenirs purchased at Phantom Ranch or Bar 9 Ranch, and tips for the river guides.

Your field trip leader will be **Steve Earle**, Past-President of the HGS. Steve has hiked much of the Canyon while attending his undergraduate studies in geology at the University of Arizona. His knowledge of the local geology and other natural history of the area is only exceeded by his love of the Canyon, a passion he freely shares with all participants. If you have questions, please e-mail him at steve.hgs@gmail.com. ■

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.*

Jewell Confirmed as Secretary of the Interior

The Senate confirmed Sally Jewell on April 10, 2013 as the 51st Secretary of the Interior by a vote of 87-11. She was sworn in on April 12, 2013 by retired Supreme Court Justice Sandra Day O'Connor. Jewell was the Chief Executive Officer of Recreational Equipment Inc. (REI). She previously worked as a petroleum engineer for Mobil and as a commercial banker, and has been involved in conservation efforts.

Bipartisan Coalition Attempts to Tackle Nuclear Waste

A group of bipartisan senators has come together to draft the first comprehensive nuclear waste legislation since the Yucca Mountain discussions were tabled last year. Senators Dianne Feinstein (D-CA) and Lamar Alexander (R-TN) of the Senate Appropriations Subcommittee on Energy and Water Development, along with Senate Energy and Natural Resources Committee Chairman Ron Wyden (D-OR), and Ranking Member Lisa Murkowski (R-AK) released the draft legislation (www.energy.senate.gov/public/ index.cfm/files/serve?File_id=4f51d98f-c07a-4bdd-8460-a19e86b 2b454) on April 25, 2013.

The bill hopes to establish a new agency to manage nuclear waste, provide a consensual process for siting nuclear waste facilities, and to ensure adequate funding for managing nuclear waste.

2012 Carbon Emissions Lowest Since 1994, EIA

The U.S. Energy Information Administration announced that the total combined carbon dioxide emissions from petroleum, natural gas, and coal sources in the U.S. in 2012 reached their lowest recorded annual levels, 5.3 billion metric tons, since 1994. This reduction in emissions is partially attributed to the increased use of natural gas over coal for electricity generation. Low natural gas prices in 2012 allowed it to better compete with coal. Carbon emissions have decreased four out of the last five years with 2010 being the exception.

Drought Task Force Reports 2012 Drought Not Result of Climate Change

The National Oceanic and Atmospheric Administration's (NOAA) Drought Task Force released a report (http://drought.gov/drought/content/drought-task-force-report-page) documenting the severe drought that hit the U.S. during 2012. The report titled *An Interpretation of the Origins of the 2012 Central Great Plains Drought*, concluded that the drought had no significant link to climate change or ocean conditions. Rather, the drought was a natural but unpredictable "sequence of unfortunate events."

According to the report, May through August 2012 marked the driest summer in the U.S. since record keeping began in 1895, eclipsing even the summers of 1934 and 1936 – the driest summers of the Dust Bowl.

Lead author Martin Hoerling cites the lack of moisture from the Gulf of Mexico, high pressure over the Great Plains, and a jet stream set farther north in Canada as the causes of the drought. These rare conditions, he explained, prevented the formation of thunderstorms in the Great Plains. Hoerling, however, is careful to state that these findings do not discount the validity of climate change, but show instead that events on a short time scale may represent natural rather than man-made variation.

Some climate scientists disagree with the report's findings, including Kevin Trenberth, head of the Climate Analysis Section at the National Center for Atmospheric Research. Trenberth argues that the report fails to account for the effect of climate change on the region's snowpack and high pressure system.

Judge Rules in BLM Monterey Shale Hydraulic Fracturing Case

A U.S. District Court Judge for the Northern District of California, Paul Grewal, ruled that the Bureau of Land Management (BLM) violated the National Environmental Policy Act (NEPA) in exempting two oil and gas leases in Monterey County from producing a full environmental impact statement. Grewal stated that BLM incorrectly assumed that only a single well would be drilled, failed to account for technological advances, and needed to address potential impacts of hydraulic fracturing on the lease sites. The leases were approved in September 2011.

USGS Reports Some Pacific Islands Inundated by End of Century

On April 11, 2013, the U.S. Geological Survey (USGS) released a report (http://pubs.usgs.gov/of/2013/1069/of2013-1069.pdf) which found that low-lying Pacific Islands may face inundation due to sea-level rise earlier than previously predicted. The report projects that significant washover and inundation could impact infrastructure and agriculture during the 21st century. As opposed to examining only the impacts of sea-level rise, this report accounts for both sea-level rise and the subsequently higher wave action that it induces.

Researchers found that storm waves impacted by sea-level rise could be three to four times taller than current waves. These waves, combined with a sea-level rise of 2 meters, could inundate 91% of Midway's

Eastern Island. Alternately, models that account only for sea-level rise predicted 19% inundation. Even though islands may not be fully inundated, increased storm washovers could lead to salt incursion into shallow fresh groundwater and agricultural soil.

While the study examined the unpopulated Northwest Hawaiian Islands of Midway and Laysan, these islands exhibit morphologies typical of many populated Pacific islands, such as the Republic of the Marshall Islands and the Federated States of Micronesia.

The full title of the report is *Forecasting the Impact of Storm Waves and Sea-Level Rise on Midway Atoll and Laysan Island within the Papah naumoku kea Marine National Monument—A Comparison of Passive Versus Dynamic Inundation Models.*

New Institute for Natural Gas Research

Pennsylvania State University announced the establishment of their new Institute for Natural Gas Research (INGaR). Research will concentrate on four main areas: discovery and exploration; extraction and stimulation; infrastructure and water; and utilization and chemical conversion.

Created by the College of Earth and Mineral Sciences and College of Engineering, INGaR will work with the Marcellus Center for Outreach and Research (MCOR) to conduct independent, interdisciplinary research on natural gas. Turgay Ertekin, professor of petroleum and natural gas engineering, and Andrew Zydney, professor of chemical engineering, will be interim co-directors of the institute until a permanent director is named.

Business is Beginning to Back Climate Change

Major corporations are beginning to back measures to mitigate climate change. Thirty-three firms, including Intel, General Motors, Nestle SA, eBay, Starbucks, and Nike, among others, implored Congress in a "Climate Declaration" to act fast against the threat of climate change. The declaration, authored by the Business for Innovative Climate & Energy Policy (BICEP) coalition, a subsidiary of Ceres, hopes to pressure Congress to tighten restrictions against greenhouse gases emissions.

ConocoPhillips Suspends 2014 Arctic Drilling

On April 10, 2013, ConocoPhillips announced that they will not pursue exploratory drilling in the Chukchi Sea off the coast of Alaska in 2014. Although confident in their ability to operate safely in the Arctic, ConocoPhillips considered further investment in the 2014 drilling season unwise given "regulatory uncertainty" as Arctic-specific drilling regulations are developed.

ConocoPhillips joins Shell in suspending arctic exploration following the March 2013 release of the Department of the Interior (DOI) Review of Shell's 2012 Alaska Offshore Oil and Gas Exploration Program. In

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that review, the DOI recommended the creation of a comprehensive, integrated, Arctic-specific plan outlining all stages of operation. The review cited a need for additional preparation, improved containment systems, and better management practices before production continues.

Shell Signs Arctic Drilling Agreement with Russia

On April 8, 2013, Royal Dutch Shell and Gazprom Neft, Russia's state-run oil producer signed an agreement for a joint venture in offshore oil exploration and development in the Russian Arctic, in the Chukchi Sea and the Pechora Sea.

Exxon Mobil, Norway's Statoil, and Italy's Eni already have deals to drill in the Russian Arctic. Shell postponed its U.S. Arctic drilling plans following management and technical problems experienced offshore Alaska during the 2012 season.

AGI Government Affairs Monthly Review: House Natural Resources Committee Considers Energy Legislation

Representatives introduced four energy bills in May 2013: the National Petroleum Reserve Alaska (NPR-A) Access Act (H.R. 1964); the Federal Lands Jobs and Energy Security Act (H.R. 1965); the Planning for American Energy Act of 2013 (H.R. 1394); and the BLM Live Internet Auctions Act (H.R. 555). On May 22, 2013, the House Committee on Natural Resources held a hearing to discuss the proposed bills.

H.R. 1964, introduced by Doc Hastings (R-WA), aims to open the NPR-A to competitive oil and gas leasing by requiring the Department of the Interior (DOI) to approve at minimum one lease sale per year from 2013 to 2023. The bill would also create timelines for approval of oil and gas transport infrastructure, such as pipelines and roads, to service the NPR-A as well as overturn DOI's February 2013 plan to broaden wildlife and subsistence hunting protections in the NPR-A.

H.R. 1965, introduced by Doug Lamborn (R-CO), seeks to bolster onshore energy leases. The bill would mandate review of drilling permits within 60 days; apply wind and solar rights of way revenue to permitting; require issuance of leases within 60 days of payment; and protect leases from being withdrawn or altered following sale. The bill directs DOI to conduct a minimum of five lease sales, each of 25,000 acres or more, by 2016. Additionally, protests, such as those from environmental groups, would be required to pay a fee of $5,000.

Bills similar to H.R. 1964 and H.R. 1965 passed the House during the 112th Congress, but failed in the Senate.

H.R. 1394, introduced by Scott Tipton (R-CO), would require DOI to outline "goals for an all-of-the-above energy production plan strategy on a 4-year basis" for onshore federal lands.

H.R. 555, introduced by Bill Johnson (R-OH), proposes conducting onshore oil and gas lease sales through a live Internet auction.

Senate EPW Committee Approves McCarthy Nomination

Gina McCarthy has been approved by the Senate Environment and Public Works Committee to succeed Lisa Jackson as the next head of the Environmental Protection Agency (EPA). The vote came a week late after Republicans on the committee boycotted the hearing over concerns regarding transparency issues. McCarthy's confirmation will now proceed to a full Senate vote.

Senate Confirms Ernest Moniz as Secretary of Energy

On May 16, 2013, the Senate confirmed Ernest Moniz as the new Secretary of Energy by a vote of 97-0 replacing former Secretary Steven Chu. The Senate Committee on Energy and Natural Resources approved Moniz's nomination on April 18, 2013. The confirmation was delayed by Lindsey Graham (R-SC) who placed a hold on the nomination due to concerns regarding the future of the Mixed Oxide (MOX) Fuel Fabrication Facility in South Carolina.

Moniz is a nuclear physicist at the Massachusetts Institute of Technology (MIT) and heads the MIT Energy Initiative (MITEI) and the Laboratory for Energy and the Environment. He previously served as Under Secretary of Energy at the Department of Energy (DOE) and Associate Director for Science in the Office of Science and Technology Policy. He also served on the President's Council of Advisors on Science and Technology, the Department of Defense Threat Reduction Advisory Committee, and the Blue Ribbon Commission on America's Nuclear Future.

Senate Committee Holds Hearing on Proposed Helium Legislation

On May 7, 2013, the Senate Committee on Energy and Natural Resources held a hearing to discuss the proposed Helium Stewardship Act of 2013 (S. 783) which was introduced on April 23, 2013 by Chairman Ron Wyden (D-OR) and Ranking Member Lisa Murkowski (R-AK).

During the hearing, Wyden, Murkowski, and the witnesses emphasized the urgent need to address the impending early closure of the Federal Helium Reserve in October 2013, which would cut off 42% of the domestic and 35% of the global helium supply.

S. 783 allows the reserve to continue current operations through September 30, 2014, then begins auctioning off 10% of the helium available for sale each year, and eventually provides helium solely to federal users. Tim Spisak of the Bureau of Land Management stated that the Department of the Interior supports S.783.

If the bill passes the Senate, the Senate and House will need to reconcile differences between S.783 and the recently passed House version of the helium legislation (H.R. 527). The major difference between the bills is in the auction set-up: S.783 proposes a phased implementation process for auctioning an increasing amount of helium per year while H.R. 527 proposes conducting all sales through biannual auctions. Walter Nelson,

of Air Products and Chemicals, Inc., testified that the "wisdom" of a phased auction "contrasts" with the "uncertainty" for contracts that the House bill would create.

New Rule Proposed by the Forest Service Regarding Paleontological Resources

On May 23, 2013, the United States Forest Service proposed a rule under the Omnibus Public Land Management Act of 2009 (P.L. 111-011) that would clarify regulations for the management and protection of paleontological resources on Forest Service lands.

The proposed rule includes regulations for the management and curation of paleontological resources, consequences for breaking paleontological law, and clarifies that science would be the primary tool for managing paleontological resources. The proposed rule would not affect the casual collection of common fossils. The draft legislation is open for public comment from experts and stakeholders until July 22, 2013.

House Natural Resources Committee Holds Markup of Proposed Mining Legislation

On May 15, 2013, the House Committee on Natural Resources held a markup of 18 proposed bills, including three on critical and strategic minerals (H.R. 761, H.R. 981, and H.R. 1063), one on soda ash production (H.R. 957), and one on outer continental shelf hydrocarbon reservoir management (H.R. 1613).

Of the critical and strategic minerals legislation, H.R. 761, the National Strategic and Critical Minerals Production Act of 2013, received the most debate. The bill was introduced by Mark Amodei (R-NV) and seeks to streamline the hard rock mine permitting process and boost domestic critical and strategic mineral resources development. Three amendments were proposed during the hearing. Amodei's amendment making technical changes was approved. Rush Holt (D-NJ) offered two amendments, one to narrow the definition of critical and strategic minerals and another to assess a 12.5% royalty on materials mined on federal lands. Both amendments failed. H.R. 761 was reported to the full House by a vote of 24-17.

H.R. 981 or the Resource Assessment of Rare Earths (RARE) Act of 2013 was passed by the committee unanimously without additional action. The bill, introduced by Hank Johnson (D-GA) and Ed Markey (D-MA), mandates that the USGS, "in coordination with the heads of national geological surveys where available," conduct a global assessment of rare earth elements within three years.

H.R. 1063, the National Strategic and Critical Minerals Policy Act of 2013, was also passed by unanimous consent without amendment. Introduced by Doug Lamborn (R-CO), it mandates that the Department of the Interior (DOI) assess the nation's ability to supply current and future demands for critical and strategic minerals.

H.R. 957 or the American Soda Ash Competitiveness Act, introduced by Cynthia Lummis (R-WY), would reduce the royalty on sodium produced on federal lands from the current rate of 6% to 2% for five years. Two amendments were discussed. The first amendment, offered by Carol Shea-Porter (D-NH), would prevent the royalty reduction during any year when there is a federal budget deficit. The second amendment, offered by Alan Lowenthal (D-CA), stated that if the reduced royalty rate failed to increase domestic production or employment then the reduction would cease. Both amendments were rejected, and H.R. 957 was reported to the full House with a vote of 28-13.

H.R. 1613, the Outer Continental Shelf Transboundary Hydrocarbon Agreements Authorization Act, was introduced by Jeff Duncan (R-SC) to approve an agreement between the U.S. and Mexico regarding offshore drilling along the Gulf of Mexico border. A primarily technical amendment proposed by Doug Lamborn (D-CO) was approved. An amendment from Holt regarding increasing penalties and liabilities was rejected. Raul Grijalva's (D-AZ) amendment to remove the bill's exemption for companies from the Dodd-Frank requirements to report company payments to the government also failed. The committee passed H.R. 1613 by a vote of 25-16.

House Committee Considers Stepping Stones to Mars

The House Subcommittee on Space held a hearing on May 21, 2013 on next steps in human space exploration. The primary goal of the hearing was to evaluate whether a human mission to the moon or to a near-earth asteroid would better prepare NASA to send humans to Mars and beyond. In their opening remarks, representatives from both parties expressed support for continued human space exploration. Additionally, Subcommittee Chairman Steven Palazzo (R-MS) and Full Committee Ranking Member Eddie Bernice Johnson (D-TX) expressed frustration at the barriers faced by NASA in developing its human exploration program, including a lack of clear directives and significant budget cuts.

Witnesses called to testify took opposing positions. Dr. Louis Friedman, co-lead of the Keck Institute for Space Studies Asteroid Retrieval Mission Study argued that suitable asteroids have already been identified and that it would be feasible to launch an asteroid-focused mission within the next five years. In the proposed mission, a robotic spacecraft would capture an asteroid and redirect it into orbit just beyond the moon where astronauts could visit it.

In contrast, Dr. Paul Spudis, Senior Staff Scientist at the Lunar and Planetary Institute reasoned that a lunar destination was preferable because the moon is the most accessible body in space, is scientifically interesting, and contains resources that would be useful to continued space exploration. "By developing the resources of the Moon," Spudis explained, "we become capability-unlimited, permitting the development of new, and as yet undreamed of capacities." ■

Full Color Ads Now Available!

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, Canvas or CorelDraw. Files should be saved and submitted in .ai (Adobe Illustrator) format. Send them as separate attachments via email or CD if they are larger than 1 MEG 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 1 MB) or on CD or DVD.

Advertising

The *Bulletin* is printed digitally using QuarkXPress. We no longer use negatives or camera-ready advertising material. Call the HGS office for availability of ad space and for digital guidelines and necessary forms or email nina@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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8	$750	$1,260	$2,242	$4,307	$5,169					
7	$665	$1,123	$2,014	$3,834	$4,600					
6	$590	$990	$1,782	$3,392	$4,069					$1,890
5	$497	$837	$1,503	$2,860	$3,432	$4,698	$4,536	$4,104		
4	$405	$683	$1,223	$2,326	$2,792					
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For more information regarding website advertising visit HGS.org or email nina@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.
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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.

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revised 8/6/10

Houston Petroleum Auxiliary Council News

Edie Bishop, *HGS Liaison* 713-467-8706 or ewbishop@bishorb.com

Technolory Chairs Mickey Murrell and Wanda Shaw.

The lazy days of summer vacation are over and the geological community is gearing up for another active year. The biggest event of the year will be the AAPG Convention & Exhibition (ACE) to be held here in Houston in April 2014. Until then, HPAC President **Barbara Peck** and First Vice President **Sally Blackhall** have been putting together a grand year for our organization.

Our opening event will be a luncheon at the HESS (Houston Engineering and Scientific Society) Club on September 16th. *Great Day Houston* host **Deborah Duncan** will be our speaker. Deborah is well versed in the talk show genre having hosted both television and radio talk shows that rely on her versatility, quick-wittedness and being in tune with what Houstonians want to know. What Houstonians enjoy hearing about are our favorite citizens, the Bushes. With this in mind, Deborah will conduct a humorous interview with guest **Neil Bush**, the middle son of George and Barbara Bush providing insights into the Bush Family. Hostesses **Shirley Gordon** and **Norma Jean Bacho** have selected a wonderful luncheon in a beautiful setting for members to greet old friends and meet new ones. Please mark your calendar for this must attend event.

The HPAC Officers for the upcoming year 2013-2014 are: President **Barbara Peck**, First Vice President **Sally Blackhall**, Second Vice President **Nancy Giffhorn**, Secretary **Sheri McQuinn**, Treasurer **Georgeann Massell**, Editor **Sandra Pezetta**, and Parliamentarian **Mickey Murrell**. Other Board Members are: Landmen Liaison **Sheri McQuinn**, Geological Liaison **Edie Bishop**, Geophysical Liaison **Donna Parrish**, and Engineering Liaison **Phyllis Carter**. Rounding out the board we have Yearbook Chair **Wanda Shaw**, Notification Chair **Dianna Gittelman**, Courtesy Chairs **Mary Harle** and **Nan Pye**, Technology Chairs **Wanda Shaw** and **Mickey Murrell**, Bridge Chair **Audrey Tompkins**, Book Club Chairs **Phyllis Carter** and **Anita Weiner** and, most entertaining of all, HPAC Exploring Houston Chairs **Martha Lou Broussard** and **Linnie Edwards**. Hats off to these individuals all for their service.

The fall meeting of the Book Club was held in the home of **Wanda Shaw**. **Martha Lou Broussard** led the discussion of the book "*The Mistress of Nothing*" by Kate Pullinger. This historical fiction of the Victorian author Lucie Duff Gordon, best known for her "*Letters from Egypt*", made for timely reading. The next meeting will be November 4th with the review of "*The Aviator's Wife*." Phyllis and Anita do a wonderful job of selecting books and that make this a great club.

Technology Chairs **Wanda Shaw** and **Mickey Murrell** have been hard at work this summer revamping the HPAC web site. Work continues to improve the site and to provide our members with up to date information and great reports and pictures of past events. Watch the October issue of the *Bulletin* for more information on their progress.

Geologists, please encourage your spouses to join HPAC, where they will have an opportunity to meet other spouses of geologists, geophysicists, engineers, and landmen. They will participate in informative and entertaining programs, delicious lunches and welcoming fellowship. The HPAC membership form is included in the HGS *Bulletin*. **Contact Edie Bishop at 713-467-8707** or **ewbishop@bishorb.com** for more information. ■

HPAC members Ann Koster and Linda Dobbin at May Business Meeting

You are invited to become a member of

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☐ Fall Event ☐ Yearbook ☐ Bridge ☐ Membership

☐ Christmas Event ☐ Spring Event ☐ Notification ☐ Book Club

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