

HGS Bulletin

Volume 60, Number 9

Houston Geological Society

May 2018

**VOICES OF EXPERIENCE – HAVING A
SUCCESSFUL GEOSCIENCE CAREER:
STORIES AND ADVICE FROM TWO
DISTINGUISHED EXPLORATION
VICE PRESIDENTS**

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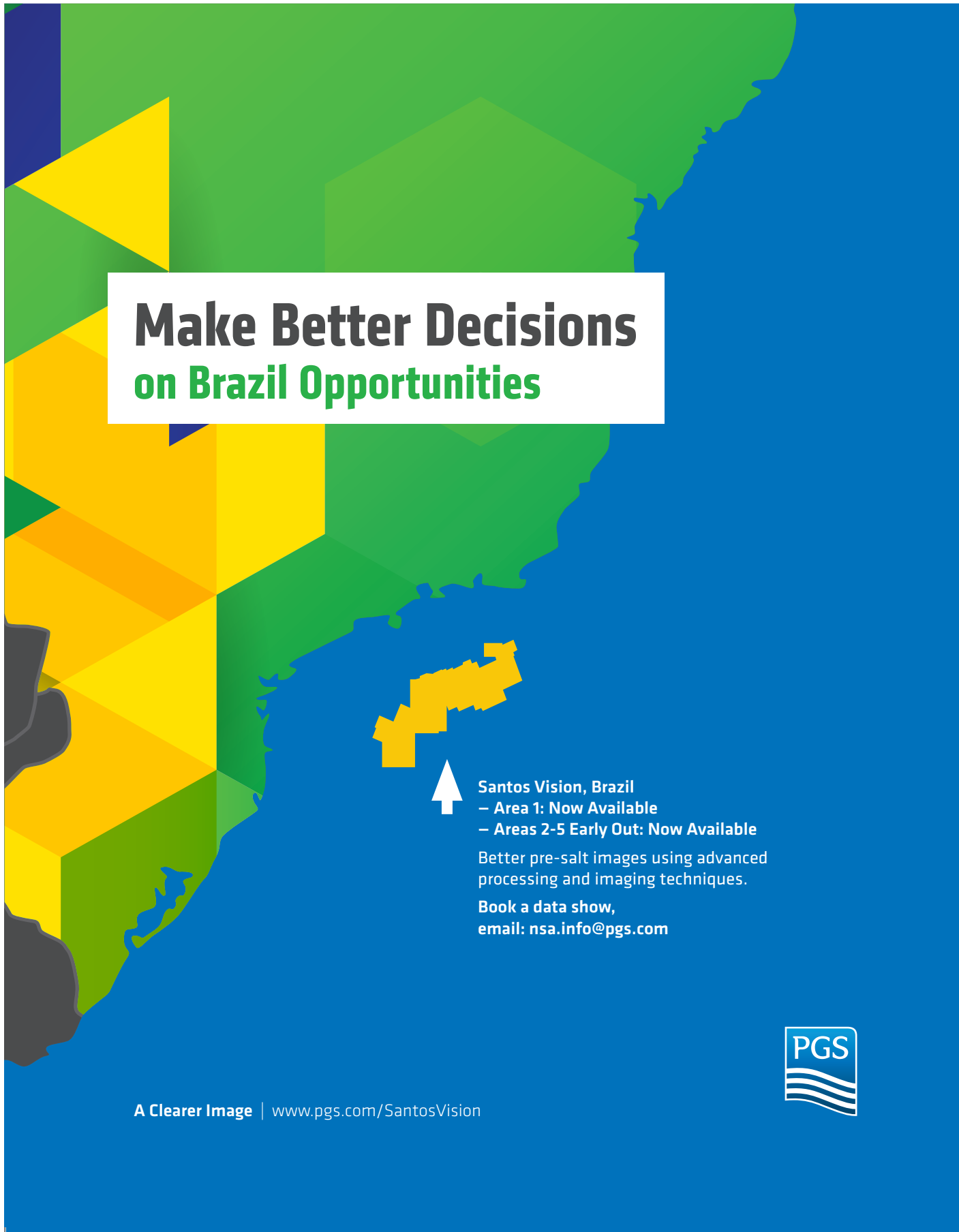
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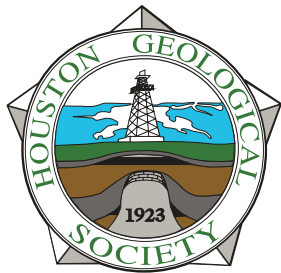
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Volume 60, Number 9

The Bulletin

Houston Geological Society

May 2018

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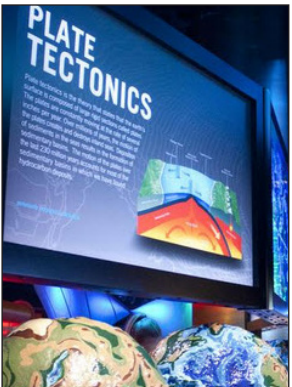
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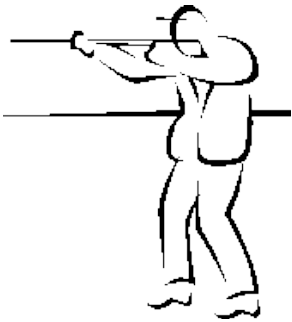
About the Cover: Summer flowers in the lateral moraine of Van Keulenfjorden, Svalbard, Norway. Photo by Brian W. Horn



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Big Continent | Big Ideas | Big Opportunity

Strategies for Success

17th Annual HGS/PESGB Africa Conference | September 10-13, 2018

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HGS Guest Night Explore the New Weiss Energy Hall

How the Weiss 3.0 Was Created Presentation by Paul Bernhard, 3D Model Designer

Saturday, June 9, 2018
Houston Museum of Natural Science
7:00pm to 10:30pm
 Free planetarium shows at 6:15pm and 6:45pm
 Buffet dinner and cash bar inside the museum
 Purchase tickets online – HGS.org
 Adults \$60
 Children under 17 \$30

Activities:
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 Buckle into the Eagle Ford Shale Experience
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In the Field...

I'd like to spend some time discussing geologists getting out into the field. Every geologist with whom I have ever discussed the subject professes their love of the outdoors and field geology. This often starts as an undergraduate taking your first few field courses or doing field work in support of your research. I have many fond memories of my own field camp crossing several western states even though a lot of it involved "getting out of the box" (van/bus) to look at outcrops and then getting back into the box to go to the next one! Unfortunately for most of us, field opportunities are few and far between in our day jobs. However, that doesn't mean you can't still do it. It just requires a little effort and commitment.

The HGS typically has several field trips a year and other groups like AAPG have many more. For example, HGS has a fantastic field trip to the Grand Canyon occurring this summer, June 3–June 11. This "Journey Through Time" field trip provides the opportunity to see the classic geology portrayed in the Grand Canyon, from Precambrian strata to modern processes which continue to shape the canyon. Chairman **Steve Earle** and his committee have run this trip multiple times in the past and it is always a BIG hit for members who attend. You can't get much more in the field than this trip!

The AAPG always has good field trips associated with its conventions. In case you didn't know it the AAPG ACE Convention is occurring later this month (May 20-23) in Salt Lake City. There are a 13 field trips planned by committee organizers that show off the spectacular geology of the state of Utah and even one trip up to the Green River Formation of Wyoming. I hope you can make it to the convention and take advantage of the field trips offered.

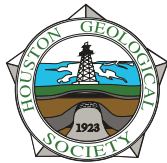
I have been to a few conventions in Salt Lake City over the years and always took the opportunity to get into the field. One year the company I work for put together a field trip with clients to collect fish fossils from the aforementioned Green River Formation. What an eventful day! The weather turned cold and it snowed, we managed to get a full-size bus stuck in the mud, and we had to shuttle people to the quarry from the stuck bus. But the sun came out as well as a tow truck and everybody found loads and loads of fossil fish (**Figure 1**). Participants STILL remind me of how much fun they had on that trip even though it occurred years ago!

Speaking of buses, I am reminded of a leadership lesson our company's chairman taught in the distant past called "Getting the Right People on the Bus". The thought process was to be extra diligent in the hiring process in order to get the right people on the team. The right people are a joy to work with, self-motivated, successful, and happy to help their co-workers and the company succeed. Getting the wrong people on the bus causes a lot of friction in the organization, lowers productivity, and generally drags down everyone's performance. Over the years I have found this management principle to be spot on and try very hard to live by it. Within HGS, I am very happy to report that we have many of the right people on the bus. And these folks are VOLUNTEERS, they aren't even paid to be on the bus! They graciously give their time and effort to give back



Figure 1

From the President continued on page 8



The Lucia Method of Carbonate Reservoir Characterization

A One-Day Short Course
by David Orchard
Rescheduled - Friday, May 11, 2018 • Apache Corporation
2000 Post Oak Boulevard, Room 108 • Houston, Texas 77056

Methods developed by Floyd J. (Jerry) Lucia provide a direct link between rock fabrics and the petrophysical behavior of carbonate reservoir rocks. These are core/petrography and log-based methods for modeling relationships between depositional/diagenetic facies, porosity, permeability, and water saturation/height functions in oil reservoirs. They effectively deal with the infamous complexity of carbonate rock properties. They are applicable for both “quick look” evaluations and detailed reservoir models and are widely applied to reservoir studies in the Permian Basin and other carbonate systems.

This one-day course provides lectures and spreadsheet exercises to train attendees in the theory and application of the methods. Mr. Lucia has provided his lecture and exercise materials for use in this seminar and additional new case studies will be introduced by the instructor.

Biographical Sketch

David Orchard began his career in the Houston and Denver offices of Energy Reserves Group and BHP Petroleum (Americas) Inc. He has worked as an exploration geologist, exploration manager and international exploration project manager. He has also spent several years as a development geologist on conventional carbonate reservoirs in the Permian Basin for ConocoPhillips. He currently is a development and operations geologist at Layline Energy, LLC. He is responsible for geological evaluations of the Company’s assets in north and east Texas and for evaluations of acquisition candidates. David founded and managed an information services company for clients in the oil and gas industry as well as a foundation supporting scientifically significant paleontological projects in Venezuela.

Mr. Orchard graduated from Stanford University in 1974 with a degree in Anthropology. He studied geology at San Diego State University and received a Masters of Arts in Geology from the University of Texas at Austin in 1979.

Pricing

HGS Members unemployed: call for special pricing

Early Registration: by 8AM, Friday, March 23, 2018:		Registration: Through 8 AM, Friday, March 30, 2018:	
HGS Member:	\$100.00	HGS Member:	\$110.00
Non-Member:	\$140.00	Non-Member:	\$150.00
HGS Student Member:	\$80.00	HGS Student Member:	\$80.00

Non-members can save \$10 and receive the Member registration price, if they apply for any category of HGS membership online (https://www.hgs.org/membership_overview), submit the application, including payment, then register for the course by calling the HGS Office (713-463-9476) before receiving formal acceptance.

Registrants will receive by email, before the course, a map and specific directions for entrance, parking, and visitor check-in.

Notebook, Certificate of Attendance, Networking Lunch, Continental Breakfast, Coffee and Break Refreshments are included in the Registration price.

Date: Friday, May 11, 2018 • 8:30 am – 5 pm (Doors open at 7:30 am)

Location: Apache Corporation • 2000 Post Oak Boulevard, Room 108
Houston, Texas 77056

Visitor Parking \$5.00 – Enter from Guilford Court

Please make your reservations on-line www.hgs.org

For more information about this event, contact HGS Office 713-463-9476 • office@hgs.org



Brian W. Horn
Brian.Horn@iongeo.com

10,000 Hours

Recently I had to visit the doctor as I was experiencing severe pain in my back and hips. My experience in the office brought back memories of my formal scientific training at university and reminded me of how fortunate I was to have trained with excellent instructors and colleagues. As many of us have experienced at a doctor’s visit, I was initially seen by a second-year medical student. This was not a surprise given the complaint that I had about my pain. I have spent many years surrounded by men and women training in medicine and have come to understand the reason doctors refer to their work as *the practice of medicine*. It is similar to why I consider my work *the practice of petroleum geology*, although there is obviously a little less at stake! The young doctor who examined me was quite thorough and did his best to understand and test various working hypotheses for the cause of my disease. He had a great rapport, was courteous and a well-spoken gentleman.

After his initial examination and a brief wait he returned with the attending physician, who happened to be the head of the department and, as it became quickly obvious, an excellent teacher. The attending physician sat down and then began to ask the student a series of questions. He was patient yet direct and followed the Socratic Method flawlessly. Each time his student gave an answer, he followed it with another question. Many times he pointed out the wrong direction of the young doctor’s analysis and how the proposed diagnosis (interpretation) did not match his observations. I recall the teacher saying, “What is this man’s disease?” The student would answer and he would then say, “Why do you think that?” The attending physician proceeded to perform a series of tests again with the student pointing out key observations that had been overlooked. I immediately knew that I was receiving excellent care, just as the student was getting excellent training.

The encounter brought a smile to my face as I recalled similar experiences in my training as a geologist. It reminded me about the value of learning to make observations in the field which is fundamental in becoming a geologist. The first geologic ideas were based on studies of outcrops. Field observations are what we can observe and need to accurately describe. These experiences give geoscientists the opportunity to learn and *practice* the science of geology. When I was first learning to make observations I tended

to put them into the context of a model that I had learned or had seen in another place. All too often I would interpret what I saw in outcrop rather than describe it. In a similar experience as the medical student, I had teachers asking, “Why do you think that?” It took time, but eventually I learned the power of an accurate description and the value of unbiased observations. If I make accurate, detailed, and most importantly, objective descriptions of what I observe, anyone can return to read and understand what was actually seen in outcrop, make further observations and interpret the observations for themselves. Similar to reading a book a second or third time, the words are the same, but the meaning is significantly different as nuances have the ability to change our understanding if properly interpreted.

Developing this skill takes time. Reading literature, making observations in the field and in the core warehouse is time-consuming. Achieving expertise in a field is a process that is often related to having practiced a discipline for more than 10,000 hours. This number was quantified in research on musicians that were training to make music their profession. The study showed that while excellent musicians were abundant, the most accomplished and successful shared a common theme: they all had more than 10,000 hours of regular and consistent practice. This is roughly equivalent to 14 months of dedication to a goal 24/7. Taking a more realistic view (2-3 hours of practice a day), the training expands to 10-14 years of dedicated daily practice.

Achieving this level of competence doesn’t happen overnight. While it may seem like an insurmountable task, the time will pass regardless of whether or not we practice and develop this skill. The key component is dedication to the goal and making sacrifices to attain excellence in a craft.

So when you are collecting new or evaluating legacy data, remember to ask yourself, “What is the question I am trying to answer? Have I accurately described the observations that I’ve made?” Understanding the question is the first step in developing a hypothesis and ultimately a conclusion that fits the observations. The acquired data may not always answer or address the initial question, but it will provide a method of analysis that will allow you to interrogate the data with a purpose. ■

From the President continued from page 5

to geoscience and to make HGS successful. Working with such people is one of the great perks of being president of the society.

Two excellent examples of highly committed individuals are **Tim Shane** and **Alicia Staszyc**. They are both members of the NeoGeos group within HGS. The NeoGeos are a committee within HGS that is dedicated to help early-career professional geoscientists network with other HGS members. Tim and Alicia each gave of their time early one Sunday morning recently to be interviewed on a KPFT radio program called miniGeology. They were fine representatives of HGS that day (see the podcast at <https://www.youtube.com/watch?v=jiZQNTJJP4k>). In addition, the NeoGeos place a lot of emphasis on doing community service projects. Tim and several NeoGeos recently traveled to a YMCA camp at Lake Livingston and spent the day building a gold-panning area for kids. Camp Cullen has several age appropriate geology themed courses including an outcrop field trip and a geology lab (Figure 2). Each year over 2,000 kids learn a bit about geology thanks to Camp Cullen. HGS also has the Outcrop Family Campout at Camp Cullen (Figure 3). Many thanks to Tim, Alicia and the NeoGeos community for all they do to make HGS a stronger and more vigorous society.

I'd like to conclude my column by encouraging everyone to get out in the field and remember why you decided to become a geologist in the first place. Whether you are 25 or 65, a field trip will do you good! ■



Figure 2



Figure 3

Flooding and Floodplains in the Houston Area: Past, Present, and Future

an Informational Workshop sponsored by the *Houston Geological Society*

Where: **Bayland Community Center**, 6400 Bissonnet, just west of Hillcroft

When: **Friday, May 18th, from 6:30-8:30pm**

Presenter: Dr. **William R. Dupre'**, Dept. of Earth and Atmospheric Sciences, University of Houston

Flooding in the Houston area over the last three years has caused residents and professionals alike to reconsider how we evaluate and respond to flood hazards in the region. Dr. Dupre' will discuss how watersheds and floodplains are defined and mapped, and how individuals can obtain (and understand) information on local watersheds and floodplain maps. He will also discuss recent floods, including how floods are measured and how flood frequency is calculated. Of particular importance is how and why floods and floodplains in Houston have changed in the past, and are likely to change in the future. Lastly, he will review some of the possible approaches to reducing flood risk in the future.

If you wish to reserve a seat, please send your request to wdupre@uh.edu, and put reservation in the subject line.



SAVE THE DATE

Houston Geological Society Presents

A Two-Day Conference

Flooding in Southeast Texas: The Science Behind the Floods

An educational conference bringing together stakeholders, including scientists, engineers, citizen coalitions, business, and governmental agencies to exchange current knowledge and ideas for the future.

Wednesday, June 6 and Thursday, June 7, 2018

At the



Student Center South, Houston Room #220
4455 University Drive
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TOPICS ADDRESSED:

- **HISTORICAL OVERVIEW**
- **CAUSES OF FLOODING AND RISKS FOR THE FUTURE**
- **PRESENT DAY DESIGN OF MITIGATION**
- **CURRENT AND PROPOSED ACTIVITY TO ADDRESS FLOODING ISSUES**

Registration Cost TBA

Registration includes:

Continuing Education Certificate of Attendance, Continental Breakfast
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June 6 & 7, 2018

An Educational Conference

Bringing Together Stakeholders To Exchange Current Knowledge and Ideas for the Future

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For more information please visit: www.hgs.org



Flooding in Southeast Texas: The Science Behind the Floods

June 6 & 7, 2018

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To sponsor, please contact Andrea Peoples at andrea@hgs.org or 713.463.9476

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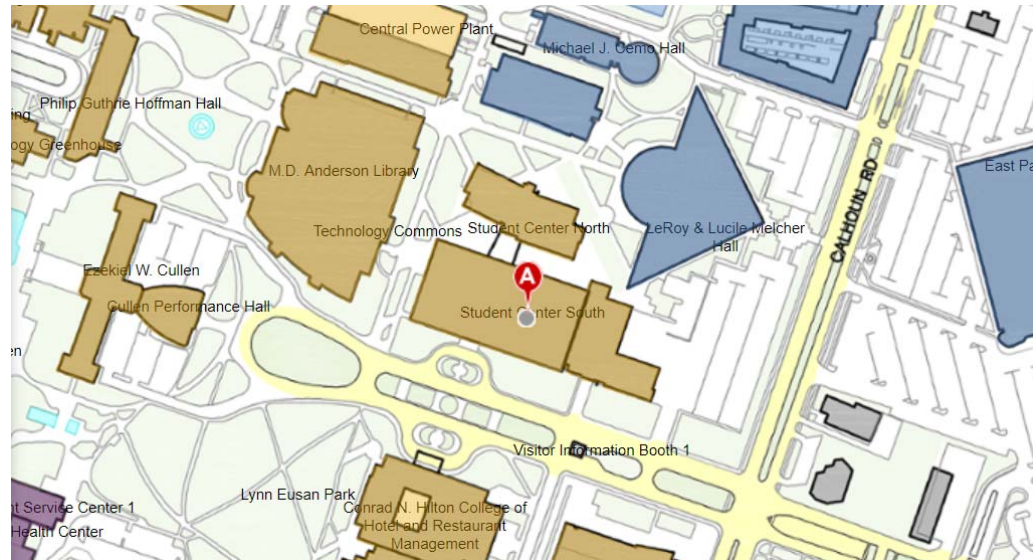
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Houston Geological Society Flooding in Southeast Texas: The Science Behind the Floods

Student Center South, Houston Room #220
4455 University Drive
Houston, TX 77204

UH Campus Map with Student Center South Marked



Directions From Downtown

- Exit Spur 5 South.
- Turn right on University Drive.
- Continue going straight at the stop light on Calhoun.
- The UH Visitor Information Booth is on the left.
- The Student Center is the first building on the right.

Directions From Galveston

- Take I-45 North and exit Elgin Blvd.
- At the First Stop Light, Elgin Blvd, take a left Drive under the bridges.
- At the Second Stop Light, TO Alt 90 (Spur 5 feeder road), take a left.
- At the next stop light, UH University Drive, take a right.
- At the next stop light, Calhoun, continue going straight.
- The Student Center is the first building on the right.
- Parking is available in the parking garage across the street next to the Hilton Hotel.

GPS

GPS +29° 43' 12.59", -95° 20' 27.46" (29.720163, -95.340960)

Wednesday, May 9, 2018

Black Lab Pub, Churchill Room • 4100 Montrose Blvd.
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.

If you are an Active or Associate Member who is unemployed and would like to attend this meeting, please call the HGS office for a discounted registration cost. We are also seeking members to volunteer at the registration desk for this and other events.

HGS Environmental & Engineering Dinner Meeting

Chase Jennings

ETHICS MOMENT

We will dedicate 15 minutes at the beginning of each meeting to ethics to apply towards 0.25 hours of ethics credit.

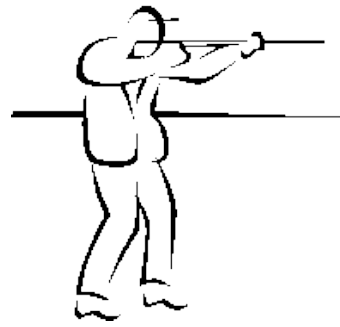
Amber Mining and Paleontological Preservation of Fossils

The Mexican state of Chiapas is rich in deposits of 23-33 million year amber. This deposit is valued for its well preserved inclusions and for its popularity in jewelry and carvings. Chase Jennings will give a presentation about his mining operations in Chiapas, the properties that make this Amber unique (for instance, phosphorescence), rare inclusions found at the mines (see a butterfly, dragonfly, and other museum grade specimens), and general information over the region and its indigenous people. Attendees will see videos and photos from the mines, raw amber, amber in-situ, and a vast array of rare specimens at this special presentation. ■

Biographical Sketch

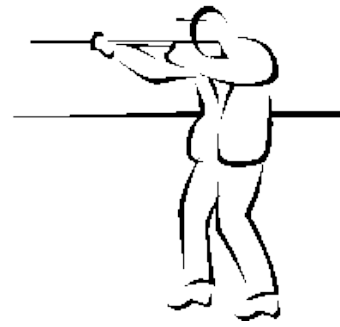
CHASE JENNINGS graduated Texas A&M University in 2014 with a Masters of Geoscience. He currently works as an Environmental Scientist. His areas of specialization are microfossils, amber, and petrified wood of the species *Mennegoxylon Jonesii*. Chase also operates an amber mine in the Chiapas province of Mexico, from which he has derived a large number of rare specimens. Chase is the only American to have visited these mines and is one of only three major importers of Chiapas Amber in the U.S.





HGS SKEET SHOOT

Saturday, June 9, 2018
Greater Houston Gun Club
6702 McHard Road, Missouri City



This tournament is a 50 target event. Shells are provided, however **you must bring eye and ear protection**. Greater Houston Gun Club and National Skeet Shooting Association safety rules will be in effect. Trophy winning shooters will be determined by the Lewis class system. Door prizes will be awarded by blind drawing after the conclusion of shooting. All competitors are automatically entered into the door prize drawing, but you must be present at the time of the drawing to win. BBQ lunch will be provided from 11:30 until 1:30. Refreshments will be available throughout the day. **Non-shooting guests are welcome to enjoy lunch and refreshments at a cost of \$20 per guest.**

HGS recognizes that 2018 is a lean year in the oil patch, and sponsorship for events like this is hard to find. **For \$150, you'll receive paid entry for one shooter and one guest (total value of \$120) and be listed as a platinum sponsor on the webpage and at the event.**

We are limited to 160 shooters in four rotations. Entry fee is \$90 per shooter for registrations received by FRIDAY, JUNE 1st. After June 1, registration will be strictly on a "space available" basis and the entry fee will be \$120 per shooter. **Register early!!**

For more information, contact: Gready Hunter at (281) 384-9035 or greadyhunter@comcast.net

For directions to the club, visit www.greaterhoustongunclub.com

ONLINE REGISTRATION INFORMATION AT: www.hgs.org/civcrm/event/info?id=1969

To pay by check, mail this form with a check made out to HGS to:
Houston Geological Society, 14811 St. Mary's Lane, Ste. 250, Houston, TX 77079

To pay by credit card, please call the HGS office: (713) 463-9476.

Name: _____ Company: _____

Email: _____ Phone: _____

Preferred time: (circle one) 9:00 10:00 11:00 12:00 Ammo: (circle one) 12 gauge 20 gauge

Entry Fees: \$ _____ + Guest Fees: \$ _____ + Sponsor Contribution: \$ _____ = Total: \$ _____

If you wish to register as a squad, please return forms for all squad members together.

.....

**ALL SHOOTERS WILL BE REQUIRED TO SIGN A DISCLAIMER OF RESPONSIBILITY
BEFORE THEY WILL BE ALLOWED TO SHOOT!**

Monday, May 14, 2018

New Location

Live Oak Room • Norris Conference Center • 816 Town and Country Blvd #210

Social Hour 5:30–6:30 p.m.

Dinner 6:30–7:30 p.m.

Cost: \$40 Preregistered members; \$45 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.

If you are an Active or Associate Member who is unemployed and would like to attend this meeting, please call the HGS office for a discounted registration cost. We are also seeking members to volunteer at the registration desk for this and other events.

HGS General Dinner Meeting

Susan M. Cunningham

Darcy Partners

William "Bill"

Maloney

Voices of Experience – Having a Successful Geoscience Career: Stories and Advice from Two Distinguished Exploration Vice Presidents

The May HGS dinner meeting is a joint meeting of the North American and the International Explorationists Groups. Susan Cunningham and William (Bill) Maloney are two distinguished oil and gas executives who started their careers in the early 1980s. They each built highly successful careers in major oil companies, spearheading efforts that led to major stake oil and gas discoveries in the U.S. and around the world. Susan and

Bill have graciously accepted the invitation to talk about their careers, their successes and challenges over their three decades of work experience. There will be time for audience participation through moderated questions and answers from the audience. This is an excellent opportunity for individuals starting their careers (NeoGeos) as well as 'experienced' professionals to attend and participate. ■

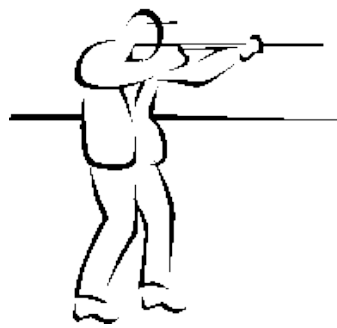
Biographical Skteches

SUSAN M. CUNNINGHAM began as an entry level geologist and rose through the corporate ranks at Amoco, Texaco, Statoil and Noble Energy. She holds a bachelor's degree in geology and physical geography from McMaster University in Ontario, Canada and has also completed a management program through Rice University's Office of Executive Development. Susan began her career in 1980 as a geologist at Amoco Canada in Calgary prior to moving to Houston in 1981 to join Amoco's International Region where she held various exploration and development positions. From 1997-1999 Susan managed teams at Statoil where she was responsible for West Africa and Deepwater Gulf of Mexico exploration. In 2000, Susan served as Texaco's Vice President of core worldwide exploration. Susan retired from Noble Energy in 2017, where she was Executive Vice President of EHSR (Environment, Health, Safety and Regulatory), global exploration and business innovation. While at Noble she guided the company's exploration efforts as they expanded internationally where she supervised Gulf of Mexico, Africa and Frontier Ventures and operations and the historic discovery and frontier success of Leviathon field in offshore Israel. Today she is an advisor for Darcy Partners, a research company connecting oil and gas companies with emerging technologies. Be sure to read an interview with Susan published in *GeoExpro*: <https://www.geoexpro.com/articles/2015/11/psychology-of-exploration>

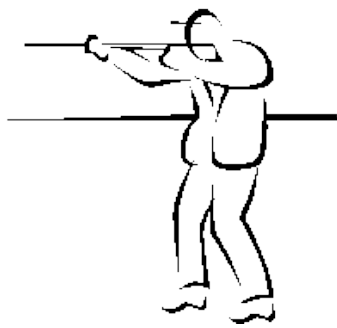


WILLIAM "BILL" MALONEY received his MSc in Geology from Syracuse University in 1981 and began his career with Shell Oil Company in Houston as a geologist in the Rocky Mountain Division. Over time he took on positions of increasing responsibility in the US and international arena. Upon leaving Shell in 1995 where he served as Region Manager for Latin America, Bill was the Director of International E&P for Davis Petroleum from 1995-1996. Bill next served as Vice President of Exploration and New Ventures for Texaco until 2002. From 2002-2008 Bill was the Senior Vice President, Global Exploration (GEX) for Statoil where he was responsible for all of Statoil's international exploration activity. Bill retired from Statoil in 2015 as the Executive Vice President of Development and Production North America. In this capacity he played a key role in Statoil's Corporate Executive Committee and was Statoil's senior executive in North America. Bill has served on the National Petroleum Council and was a member of the board of API. He is on AAPG's corporate advisory board and on the Energy Advisory Board for the University of Houston. Bill is an avid tennis player and still maintains an active interest in music. He is currently on the Board of Directors of Trident Energy and ATX Energy and also serves as a senior energy advisor to Warburg Pincus. Maloney was recently interviewed by *Forbes* magazine: <https://www.forbes.com/sites/uhenergy/2017/11/20/is-this-a-normal-business-cycle-or-are-we-seeing-structural-changes-to-the-energy-business/>





HGS SKEET SHOOT



Saturday, June 9, 2018
Greater Houston Gun Club
6702 McHard Road, Missouri City

Sponsorship Form

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Company recognition on the HGS website, Bulletin and event
- LUNCH SPONSOR \$1,000.00**
Registration for a Team of 5
Company recognition on the HGS website, Bulletin and event
- BEVERAGE SPONSOR \$750.00**
Registration for a Team of 5
Company recognition on the HGS website, Bulletin and event
- AMMO SPONSOR \$750.00**
Registration for a Team of 5
Company recognition on the HGS website, Bulletin and event
- FIELD SPONSOR \$750.00**
Registration for a Team of 5
Company recognition on the HGS website, Bulletin and event
- FLURRY SPONSOR \$750.00**
Registration for 2 team members
Company recognition on the HGS website, Bulletin and event
- PLATIMUN WEBSITE SPONSOR \$150.00**
Registration for 1 shooter and 1 non-shooting guest
Company recognition on the HGS website, Bulletin and event

To pay by credit card, please complete the form and return to office@hgs.org or call 713-463-9476
To pay by check, mail this form with a check made out to HGS to:
Houston Geological Society, 14811 St. Mary's Lane, Ste. 250, Houston, TX 77079

Name: _____ Company: _____

Email: _____ Phone: _____

Sponsorship Level: _____ Amount: _____

Credit card # _____ Exp. Date: _____

For more information, contact: Gready Hunter at (281)-384-9035 or greadyhunter@comcast.net
For directions to the club, visit www.greaterhoustongunclub.com

Tuesday, May 15, 2018

Southwestern Energy Conference Center, 10000 Energy Drive, Spring, TX 77389
Social 11:15 a.m., Luncheon 11:30 a.m.

Cost: \$35 Preregistered members; \$40 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.
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HGS Northsiders Luncheon Meeting

Ken Henry

History of Oil in the Middle East



This year is the 110th anniversary of the first oil discovery in the Middle East. Oil was first discovered in Iran in 1908 and followed by discoveries in Bahrain, Saudi Arabia and Kuwait. This presentation covers the history of the discoveries in these countries. The geology in the Middle East is also unique due to the high permeability reservoirs allowing for some of the highest flow rates of any wells in the world. The world's largest oil field is the Ghawar Field has the capacity to produce over 6 Million BBLs per day. One of the challenges of the reservoirs in Saudi Arabia is the large volume of water required for water injection in order to maintain production with the increasing water cut. An overview of the geology and the cause of this high permeability will be shown. ■

Biographical Sketch

KEN HENRY graduated from Purdue University in 1970 with a degree in Electrical Engineering. He joined Schlumberger after college as a wireline field engineer. Early in his career Ken was manager in Montana and Midland Texas wireline districts. In 1980 he was prompted to Marketing Manager for the Middle East, based in Saudi Arabia. In this role he gained first-hand experience with some of the largest oil fields in the world as he traveled throughout the Middle East. In 1986 he transferred to Thailand and then to Indonesia and Malaysia as East Asia Marketing Manager. Ken returned to Houston in 1991 as the Asia and Middle East expert at the Schlumberger International Coordination office until 1999 when he took early retirement.



Wednesday, May 23, 2018

Petroleum Club of Houston • 1201 Louisiana (Total Building)
Social Hour 11:15 a.m.
Luncheon 11:45 a.m.

Cost: \$35 Preregistered members; \$40 non-members/walk-ups

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

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HGS General Luncheon Meeting

Gary Citron, Creties Jenkins
and Mark McLane
Rose and Associates

Appraising and Developing Your Unconventionals: How to Avoid Squandering Billions of Dollars Next Time

Over the past three years, more than 100 oil and gas companies in North America with almost \$80B in debt have filed for bankruptcy. While these companies would like you to believe they were all victims of low commodity prices, many failed because of the way they approached appraising and developing opportunities. Two of the most common mistakes have been focusing on production attainment instead of value creation, and incorrectly thinking that enough was understood about a given reservoir to push ahead with development.

To mitigate these errors unconventional reservoirs must be evaluated in a series of stages. In each stage we need to; (1) identify the key uncertainties and risks, (2) collect the data needed to quantify these, and (3) generate a probabilistic assessment of potential outcomes and their associated values. A key aspect in this evaluation is not only using rock and fluid data to identify the area with the greatest potential, but drilling enough wells to understand the production variance (irreducible uncertainty) and whether the average well will be economic. This includes quantifying the range of the average well and the confidence of achieving some minimum rate.

This process requires discipline, including maintaining consistent drilling and completion practices so variations in reservoir quality can be understood. To help ensure this process is followed it is important to implement an assurance process consisting of; 1) guidelines and workflows, 2) peer reviews and assists, and 3) periodic performance lookbacks. The time to do this is NOW, before prices rise again and we revert to our destructive habits. ■

Biographical Sketch

During his twenty-year career at Amoco (in the 1980s and 1990s), Gary served as a geoscientist, exploration supervisor and asset

manager, as well as an internal consultant to executives and team leaders. While on Amoco's Prospect Quality Team, Dr. Citron actively reviewed prospects prior to and after drilling, and mentored younger geoscientists on prospect measurement. In 1999 Dr. Citron joined Pete Rose's consulting firm. He became Pete's first Partner in Rose & Associates in 2001 and held the role of Managing Partner from 2003 to 2014, leading Rose & Associates to multiple consecutive years of profitable growth.



In addition to his teaching and consulting obligations associated with conventional and unconventional resource opportunities, he coordinates a yearly gathering of risk team coordinators to share and compare best practices. In 2001, he received the best paper award from the AAPG's Division of Professional Affairs, and again in 2007 he was honored for delivering a 'Top Ten Oral Presentation' at the AAPG annual convention. Dr. Citron regularly donates his time to the AAPG's education curricula, teaching courses on prospect and play assessment. He has served in the AAPG House of Delegates and as an Associate Editor for the SPE's Economics and Management journal. He has authored or co-authored more than a dozen publications, and has been an honored speaker for the SIPES, Geological Society of London, AAPG, SPE, and SEG.

PhD Cornell University - Geology
MSc Cornell University - Geology
BSc University of Buffalo
Registered Professional Geoscientist (Texas)

Without Proper Staging of Investments, Companies can 'Squander Billions'

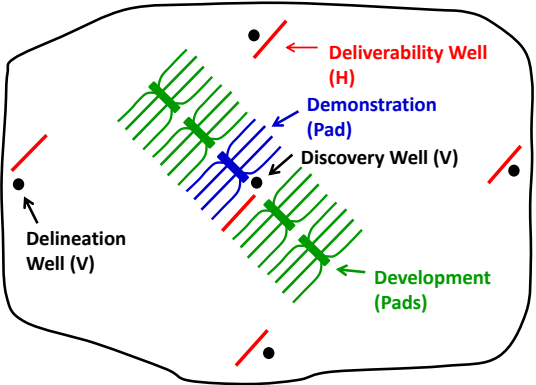
Reservoir	Wells Drilled	# Wells >12% ROR
Shale	307	53
Shale	96	40
Carbonate	52	39
Sandstone	57	28
Sandstone	104	24
Sandstone	86	19
Sandstone	115	11
Shale	18	2
Shale	10	1
Carbonate	15	1
Shale	79	1
Shale	80	1
Carbonate	2	0
Shale	16	0
Shale	6	0
Shale	6	0
Total	1049	220

A company's recent experience in low perm reservoirs

Project Risk Analysis Addresses The Challenge of Creating Value Through Staging

Project:

A "ring-fenced" area within a play segment where a company has planned **annual multi-well programs** on available acreage.

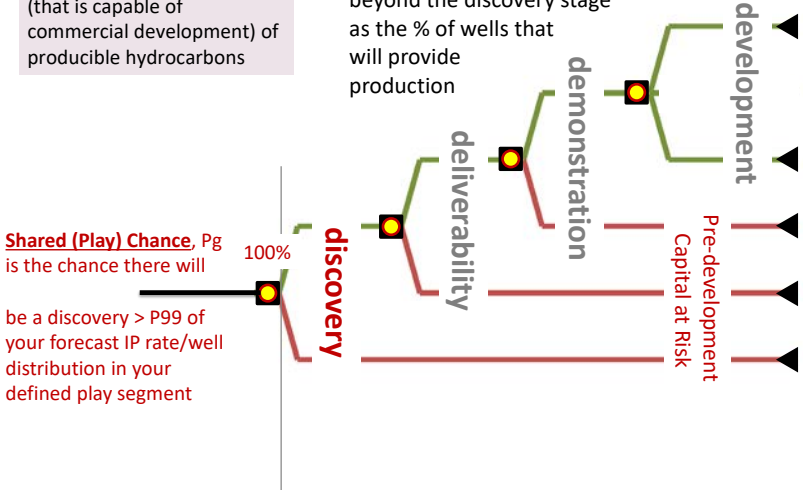


Staged Project Cash Flow Characterization

Discovery stage:

Locate a significant quantity (that is capable of commercial development) of producible hydrocarbons

If needed, local chance and mechanical success rate is applied beyond the discovery stage as the % of wells that will provide production





Sunday

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

	Members Pre-registered Prices: Dinner Meetings members..... \$40 Emeritus/Honorary members..... \$40 Student members \$10 Nonmembers & walk-ups \$45 Except - Env. & Eng. \$30 Nonmembers & walk-ups \$35 Emeritus/Honorary members..... \$15	1	2	3	4	5
6	7	8 HGS Board Meeting 6 p.m.	9 HGS Environmental & Engineering Dinner Meeting “Amber Mining and Paleontological Preservation of Fossils,” Chase Jennings Page 13	10 HGS Executive Board Election Ends at 5 p.m.	12 HGS Continuing Ed “The Lucia Method of Carbonate Reservoir Characterization,” David Orchard Page 6	12
13	14 HGS General Dinner Meeting “Voices of Experience – Having a Successful Geoscience Career: Stories and Advice from Two Distinguished Exploration Vice Presidents,” Susan M. Cunningham and William “Bill” Maloney Page 15	15 HGS Northsiders Luncheon Meeting “History of Oil in the Middle East,” Ken Henry Page 17	16	17	18 HGS Informational Workshop “Flooding and Floodplains in the Houston Area: Past, Present, and Future,” Dr. William R. Dupré Page 8	19
20 AAPG ACE2018 Salt Lake City, Utah Page 22	21	22	23 HGS General Luncheon Meeting “Appraising and Developing Your Unconventionals: How to Avoid Squandering Billions of Dollars Next Time,” Gary Citron, Page 18	24	25	26
27	28	29	30	31 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 office@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.		Don’t wait, make your reservations online at hgs.org



June 6-7, 2018
HGS Conference
Flooding in Southeast Texas: The Science Behind the Floods
(Page 9)

June 9, 2018
HGS Skeet Shoot
Greater Houston Gun Club
(Page 14)

June 9, 2018
HGS Guest Night
Houston Museum of Natrual Science (Page 4)

September 11-12, 2018
The 17th HGS-PESGB Conference on African E&P
Houston, TX (Page 2)

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interest participation in projects and prospects.

Contact Walter S. Light Jr.
President/Geologist
713.823.8288
EMAIL: wthunderx@aol.com

Guest Night continued from page 23



fourteen feet in diameter—which spins vigorously overhead in the center of the hall.

- Crawl inside the reinvented GEOVATOR. The exhibit takes visitors on a reimagined fantastic voyage plunging down through the museum floors into the Earth, then back in time to the Cretaceous Period for an attack by hungry flying prehistoric raptors, and finally experience the meteor impact from 65 million years ago.
- Don't miss the Unconventional Resources Gallery featuring the jaw dropping Eagle Ford Shale Experience, a.k.a. the "EFX 3000," which beckons visitors to step aboard for a wild ride out to prime Texas shale oil and gas drilling country. Strap into the seats and go visually down into the borehole of an oil well, made real with curved projection techniques, and mechanical motion effects. The ride goes underground and ventures into the narrow spaces of a hydraulic micro-fracture, surrounded by seemingly massive grains of proppant.

- A crowd pleaser is the "Energy City," a 2,500-square-foot 3-D landscape representing Houston, the surrounding Gulf coastal waters and the terrain of southeast and central Texas. This projection of laser light on models uses projection mapping technology to bring to life the energy value chain. It's a surreal experience, set to music, which follows day to night in a 20 minute timeline.

Tickets are \$60 for adults and \$30 for children under 16. Adult tickets can be purchased on the HGS website calendar at <https://www.hgs.org/civicism/event/info?id=1946>

Call the HGS office at 713-463-9476 to make reservation for children's tickets. Guest Night tickets are only available in advance, no walkups at the door, please. ■

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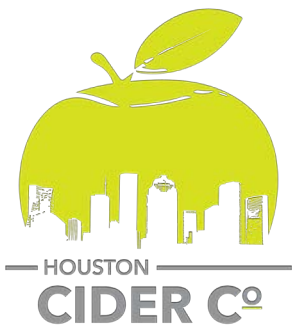
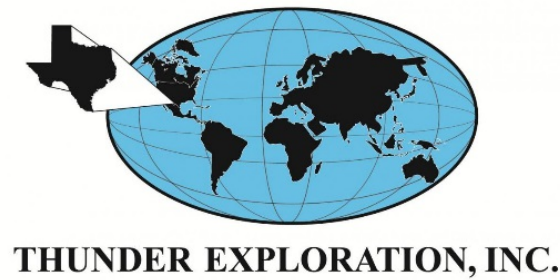
SCA

HGS Shrimp Peel & Crawfish Boil

Thank you to our
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John and Dawne Jordan
Former HGS President 2017-2018



HGS Shrimp Peel & Crawfish Boil



Keith Peoples and Dave Miller



Andrea & Keith Peoples - The Cooks



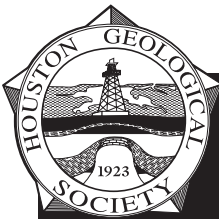
John Tubb, Jr.



Big Daddy Crawfish



Ready to eat



HGS Welcomes New Members

New Members Effective April 2018

ACTIVE MEMBERS	STUDENT MEMBERS
Wesley Buckner	Rachael Hirsch
Matthew Campbell	Christopher Odezulu
Robert Davidson	Sergei Parsegov
John Messa	Rahul Sudhakar
Jacqueline Palmer	John Teske
Michael Quintero	Mohamed Ziane
Nickolas Raterman	
Kim Shih	
Gary Simpson	
Christopher Varga	
Shalina Warrior	
Kylie Wright	
Carrington Wright	
Yifan Zhang	

Welcome New Members

Cheated, Mistreated, Pushed Around?

Have you been cheated, mistreated or somehow deprived of your share of a deal, working interest or royalty? If so, give me a call. I have thirty years experience as a working interest and royalty owner in the oil and gas business to go along with forty years of court room experience. A trusted team of professionals together with the necessary resources is available to work on your case. You do not pay anything unless we win.



- Proven Results**
- \$6,000,000 Future payout projected for settlement to widow with ORRI recovered under husband's consulting contract after company contended no payments due after death.
 - \$5,800,000 Combined cash settlement for UPRC East Texas and Central Louisiana royalty owner class action cases for underpaid royalties. Court approved fee of 1/3.
 - \$4,700,000 Jury verdict, oil company violates geologist non-compete contract. Settled later on confidential terms.
 - \$2,000,000 Settlement for downhole failure of casing results in loss of well bore, net to client \$1,372,411.79.
 - \$1,175,000 Settlement for geologist and family where oil company drilled too close to geologist property. Case filed 18 years after well drilled. Net to client \$664,822.51.
 - \$986,000 Cash settlement, net to clients \$657,207.60, plus future mineral interest valued at \$500,000.00. Dispute over mineral interest ownership from thirty year old contract.

Robert A. Chaffin
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Government Update

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

AGI Geoscience Policy Monthly Review (January 2018) NSF Report on the State of U.S. Science Shows America in the Lead as China Rapidly Advances

According to the National Science Foundation's (NSF) Science and Engineering Indicators 2018 report released on January 18, 2018 the U.S. is currently the global leader in science and technology (S&T), though our nation's share of global S&T activities is declining as others continue to rise. As countries across the world have increasingly come to view scientific and technical capabilities as engines of economic growth, many have been escalating efforts and heavily investing to improve their S&T capabilities. Building on their relative strengths, China's rapid, unprecedented, and sustained growth has been accompanied by S&T developments in India, South Korea, and other Asian countries.

This year's report indicates that, in a global context, the U.S. invests the most in research and development (R&D), attracts the highest venture capital, awards the most advanced degrees, and is the largest producer in high-technology manufacturing sectors. However, U.S. leadership in the global science and engineering (S&E) landscape is being challenged. While the U.S. led in R&D expenditures in 2015 at \$496 billion – comprising 26 percent of the global total – China was a close second at 21 percent. China has rapidly grown its R&D spending since 2000, at an average rate of 18 percent annually, with its focus primarily geared toward development rather than basic or applied research. Meanwhile, R&D spending in the U.S. only grew by four percent during the same time frame.

Along with the report, the National Sciences Board (NSB) released a policy companion statement that addresses the need to grow a STEM-capable U.S. workforce. The statement notes that the number of Americans with a four-year degree in S&E grew by 53 percent between 2000 and 2014; in China, this number increased by 360 percent. China's investment in higher education and R&D has fueled the growth of its high-technology industries. The NSB emphasizes that, "As a nation, we must work together to ensure all segments of our population have access to affordable, high-quality education and training opportunities beginning as early as kindergarten and lasting well beyond graduation."

The NSF's Science and Engineering Indicators is a biennial, congressionally mandated report on U.S. progress in S&T. The report was also accompanied by a digest that includes 42

indicators highlighting issues of current opportunity or concern for policymakers.

FERC Rejects Department of Energy Proposal to Subsidize Coal and Nuclear Plants

On January 8, 2018 the Federal Energy Regulation Commission (FERC) rejected a proposal that was submitted by Secretary of Energy Rick Perry in September 2017 to subsidize the operating costs of coal and nuclear power plants, since the rule did not satisfy certain statutory standards. However, the agency recognized that this issue warrants further attention and initiated a new proceeding to specifically evaluate the resilience of the bulk power system in certain operating regions. The Secretary's proposed rule highlighted the need to diversify our fuel resources in order to improve the resiliency and reliability of our nation's electric grid in the face of potential outages from threats such as cyber-attacks or natural disasters. In a letter to FERC Commissioners, Secretary Perry noted that the proposed rule would rectify the artificial devaluation of coal and nuclear power created by market inefficiencies that have led to the "premature" closure of these power plants in recent decades.

Congressional proponents of the proposed rule include those representing coal-producing states, such as Senators Steve Daines (R-MT), Shelly Moore Decapio (R-WV), and Joe Manchin III (R-WV). Private-sector support is almost exclusively from coal producers. Critics of the proposal include energy suppliers from the oil, gas, and renewables sectors, electrical power suppliers, free-market groups, and energy regulators, which have expressed concerns that the rule would violate the free-market principals necessary for a competitive and healthy wholesale electricity market – a market which has been deregulated since the 1990's in order to ensure the lowest-cost sources of power.

Interior Department Announces Plans for U.S. Outer Continental Shelf Oil and Gas Leasing Program

Secretary of the Interior Ryan Zinke announced on January 4, 2018 plans for the development of the National Outer Continental Shelf Oil and Gas Leasing Program (National OCS Program) for 2019-2024. The new Draft Proposed Program (DPP) aims to make more than 98 percent of the undiscovered, technically recoverable oil and gas resources in the OCS available for leasing and exploration. By comparison, the current 2017-2022 Program

Government Update continued on page 30

implemented by the Obama Administration makes available 70 percent of the OCS resources economically recoverable at an oil price of \$40 per barrel and nearly one-half of all the estimated undiscovered, technically recoverable resources in the region.

The original 2015 draft of the Obama Administration's 2017-2022 Program had included many of the same leasing areas as the new DPP for 2019-2024, with the notable exception of the Pacific, southern portion of the South Atlantic, and entire North Atlantic regions, but the final draft of the 2017-2022 Program was revised to remove those highly contested areas in Alaska and the Atlantic that are currently under scrutiny in the recently proposed program. The 2019-2024 DPP, which is the largest lease sale proposal for the National OCS Program to date, includes 47 potential sales in 25 offshore planning areas, of which 19 are in Alaska, 12 in the Gulf of Mexico, 9 in the Atlantic, and 7 in the Pacific.

Although this recent move to increase the nation's offshore energy development is consistent with the current administration's priorities as outlined in President Donald Trump's Executive Order 13795, it is facing opposition on both sides of the aisle.

Earlier this year, Representative Alan Lowenthal (D-CA-47) led a group of over 100 Democratic members of the House of Representatives in a letter urging Secretary Zinke to keep Atlantic and Pacific oceans off-limits to new oil and gas leases. Similarly, a number of Republican lawmakers representing some areas recently proposed for leasing have opposed Secretary Zinke's OCS leasing plan. Representative Scott Taylor (R-VA-2) recently stated his opposition to the DPP due to the potential negative impacts it would cause to military operations and tourism in Virginia. Senators Susan Collins (R-ME) and Angus King (I-ME) also opposed the plan in an open letter arguing that drilling off the coast of Maine would harm the state's fisheries and coastal resources.

Less than a week after release of the DPP, Secretary Zinke announced that all of Florida's coastline would be removed from consideration in the proposed five-year leasing program. Of particular interest is the oil-rich area of the Gulf of Mexico within 125 miles off the western coast of Florida, which is subject to a congressional moratorium until 2022 as part of the Gulf of Mexico Energy Security Act of 2006 (GOMESA) (P.L. 109-432). Although Secretary Zinke had originally planned to reopen the area for lease after the expiration of the moratorium

in 2022, when Governor Rick Scott (R-FL) met with Secretary Zinke on January 9, 2018 they informally came to an agreement that drilling in Florida's eastern Gulf of Mexico and Atlantic regions would be taken off the table. Senator Bill Nelson (D-FL), a longtime proponent of restrictions on Florida offshore drilling, labeled the closed-door meeting between Secretary Zinke and Governor Scott as a "political stunt" that may have potentially violated administrative law. The sudden withdraw of Florida's offshore areas following this meeting has prompted questions surrounding the seemingly preferential treatment given to the state and whether others will be allowed to follow suit.

House Oversight Hearing Looks at DOI Burdens to Onshore Energy Production

On January 18, 2018 the House Natural Resources Subcommittee on Energy and Mineral Resources held an oversight hearing to assess the Department of the Interior's (DOI) progress on eliminating burdens to domestic onshore energy production, pursuant to Secretarial Orders 3349 and 3354. According to the Bureau of Land Management (BLM), the onshore oil and gas leasing process takes at least 16 months from the time a parcel is nominated to the award of a lease sale.

During the hearing, witness Jarred Kubat, vice president of land, legal and regulatory at Wold Energy Partners, LLC (WEP), commented on the regulatory uncertainties, inefficiencies, and inconsistencies that he believes disproportionately impact small businesses. With only 37 full time employees and 71 percent of WEP's assets residing on federal lands in Wyoming, Kubat explained that the 415-day average delay between parcel nomination and lease offering is far too long for small operators.

Shane Shulz, director of government affairs for QEP Resources, echoed Kubat's sentiments, stating that lengthy impact reports and protest periods on lease nominations have decreased the overall leasing activity on federal lands. This federal "paralysis by analysis," as Shulz referred to it, is often a major driver for energy companies to find private, state-regulated lands as more attractive

investments. According to a 2016 Congressional Research Service report analyzing energy production in federal versus nonfederal areas, oil production on federal lands has fluctuated over the past 10 fiscal years but has increased dramatically on nonfederal lands.

BLM's Deputy Director for Programs and Policy Brian Steed affirmed that recent actions to reduce regulatory burdens have created more revenue for the agency. From 2016 to 2017, the 30 percent increase in onshore oil and gas lease sales generated an 87 percent increase in revenue totaling \$360 million, which is a dramatic rise compared to the previous year's \$193 million. Steed noted the DOI's plans to further reform lease sales by rescinding the duplicative Master Leasing Plans (MLP), deferring to the Resource Management Plans (RMP), and streamlining reviews under the National Environmental Policy Act (NEPA). He also stated that the DOI intends to eliminate a 2016 rule on venting, flaring, and leaks and a 2015 rule on hydraulic fracturing.

Minority witness Nada Culver, senior director of policy and planning for the Wilderness Society (TWS), argued against the legality of dismantling BLM's venting and flaring rule, mentioning the DOI's past efforts to administratively eliminate the rule and a Senate rejection in November 2016 of a joint resolution that sought to nullify this rule. Culver stated that aside from the negative health effects stemming from the release of volatile organic compounds and smog particulates, the federal government also loses out on royalties that could be collected on the natural gas that is vented or flared, citing a GAO report published in 2010. Culver claimed that the key factors in industry lease investments were mainly market forces, resource geology and distribution, and BLM acreage, as opposed to federal regulation.

House Energy Subcommittee Holds Oversight Hearing to Discuss Permitting for Offshore Seismic Surveys

On January 19, 2018 the House Subcommittee on Energy and Mineral Resources held an oversight hearing to identify and examine regulatory obstacles to offshore geological and geophysical resource surveying on the U.S. Outer Continental Shelf (OCS). Congress is seeking compromises within the regulatory framework that would allow the U.S. to understand our offshore resource potential and ensure national energy security, while also minimizing the negative effects of anthropogenic noise in the marine environment.

The hearing was held in response to a December 2017 Government Accountability Office (GAO) report requested by House Natural Resources Committee Chairman Rob Bishop (R-UT-1). Entitled "Offshore Seismic Surveys: Additional Guidance Needed to Help Ensure Timely Reviews," the report details the permitting process for seismic research and identifies instances of inefficiency and inconsistency in meeting federal internal control

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standards. Entities seeking to conduct seismic surveys to identify oil, gas, and other mineral resources in the OCS must obtain a permit from Interior’s Bureau of Ocean Energy Management (BOEM) – the federal agency responsible for the oversight of most offshore oil and gas leasing and exploration activities. Given the possibility that seismic surveys may disturb or injure marine mammals, entities may also need to request an incidental take authorization from the National Marine Fisheries Service (NMFS) or the U.S. Fish and Wildlife Service (FWS), although this is not necessarily required. During the hearing, GAO Acting Director Jon Ludwigson testified about the report findings, which recommended that BOEM, NMFS, and FWS should analyze their time frames for reviewing applications and develop guidance that clarifies how and when staff should record that an application has been determined adequate and complete.

Ryan Steen, a partner in the law firm of Stoel Rives, highlighted the need for modernizing the Marine Mammal Protection Act (MMPA), which prohibits the “taking” of marine mammals in U.S. waters unless authorized by NMFS or FWS, depending on the species which might be affected. According to Mr. Steen, MMPA authorizations are often the primary cause of administrative delay in the offshore seismic survey permitting process. Also on the witness panel, BOEM’s Acting Director Walter Cruickshank explained that seismic surveys “support BOEM’s mission to ensure the responsible development of conventional and renewable offshore energy and marine mineral resources while protecting the environment.” Dr. Cruickshank mentioned some of the different uses of seismic data, such as identifying critical minerals and sand and gravel resources, while clarifying that this involves a different type of seismic activity than what is used for oil and gas exploration, which requires much deeper penetration to look at the geology thousands of feet below the seabed. South Carolina State Senator Tom Davis cited the potential negative impacts of seismic testing to the environment and to the local economy of coastal regions.

In response to questions from Representative Alan Lowenthal (D-CA-47) about Secretary of the Interior Ryan Zinke’s recent OCS leasing plans and subsequent decision to exclude Florida’s offshore areas from exploration, Dr. Cruickshank assured the subcommittee that BOEM will proceed with a complete analysis of all the areas in the Draft Proposed Program for OCS leasing in 2019-2024, including those areas off the coast of Florida that Secretary Zinke informally announced on January 9, 2018 would be taken off the table. Representative Don Beyer (D-VA-8) then introduced for the record a letter to Secretary Zinke signed by more than 150 members of Congress that requests the removal of all the lease sales scheduled for the Atlantic, Arctic, and Pacific Oceans, and the Eastern Gulf of Mexico planning areas. Following suit, Representative Jared Huffman (D-CA-2) brought up that he also led a letter with 36 members of the California

delegation asking for California’s shoreline to be exempt from the 2019-2024 National OCS Leasing Program.

Department of the Interior Mandates Political Review for Grants of at least \$50K to Universities and Nonprofits
Based on a December 28, 2017 memorandum obtained by the Washington Post, the Department of the Interior (DOI) is now mandating review by a political appointee for all grants and cooperative agreements with an individual or aggregate award of at least \$50,000 to a nonprofit organization that can legally engage in advocacy or to an institution of higher education, and for all grants or cooperative agreements of over \$100,000. In the memo, Scott Cameron, DOI’s principal deputy assistant secretary for policy, management, and budget, instructed other assistant secretaries and heads of bureaus and offices to submit qualifying grants and agreements to one of his senior advisors for approval. The memo also states that financial decisions will promote the Interior Secretary Ryan Zinke’s “Top Ten Priorities” listed in an attachment.

A DOI spokeswoman told the Washington Post that political appointees have been reviewing grants and cooperative agreements totaling at least \$100,000 since April 2017, and an Environmental Protection Agency (EPA) memorandum obtained by E&E News this past summer directed all grant solicitations to the agency to be reviewed by John Konkus, the deputy associate administrator in EPA’s Office of Public Affairs, before they are posted online and there is any external engagement relating to the solicitation.

Concerned about maintaining the scientific integrity, transparency, and accountability of the grant review process, the National Academies of Sciences, Engineering, and Medicine released a statement on January 16, 2018 indicating that they “view any political review of scientific proposals as inappropriate, as it gives the appearance of political interference in science.”

White House Announces Intent to Nominate Director of the U.S. Geological Survey and Re-nominates Heads of Key Science Agencies
One year after taking office, President Donald Trump announced his intent to nominate Dr. James Reilly to be Director of the U.S. Geological Survey (USGS) at the Department of the Interior. After a 13-year career at the National Aeronautics and Space Administration (NASA), during which he flew three spaceflight missions and conducted five spacewalks, Dr. Reilly currently serves as a technical advisor on space operations for the U.S. Air Force’s National Security Space Institute in Colorado Springs, Colorado. Dr. Reilly earned his B.S., M.S., and Ph.D. in geosciences from the University of Texas at Dallas; his studies included a scientific expedition to Marie Byrd Land, West Antarctica, to research isotope geochronology. Prior to joining NASA, Dr. Reilly worked for 15 years as an oil and gas exploration geologist

with Enserch Exploration, Inc. Following his career at NASA, Dr. Reilly served as an administrator for the American Public University System, retired from the U.S. Navy as a Lieutenant Commander, and started his own firm, March 25 Management. Reflecting on his experience working at the International Space Station, Dr. Reilly stated, “There hasn’t been a moment when I had the chance to look down on our planet from orbit when I haven’t been amazed at how geology has played a significant role in the development of humankind.”

After 98 presidential nominees were returned to the President on January 3, 2018 pursuant to Senate Rule XXXI, paragraph 6, President Trump sent a list of several of these nominations back to the Senate on January 8, 2018 seeking to fill key science positions in his administration. The list included Barry Myers to be Administrator of the National Oceanic and Atmospheric Administration (NOAA), James Bridenstine to be Administrator of NASA, Kathleen White to be Chair of the Council on Environmental Quality, Andrew Wheeler to be Deputy Administrator of the Environmental Protection Agency (EPA), and Steven Gardner to be Director of the Office of Surface Mining Reclamation and Enforcement. This list did not include Michael Dourson, who was previously nominated for Assistant Administrator for Prevention, Pesticides, and Toxic Substances for the EPA. On January 18, 2018 the Senate Committee on Commerce, Science, and Transportation approved the nominations of Barry Myers to be Administrator of NOAA and James Bridenstine to be Administrator of NASA on party line votes (14-13); they are awaiting confirmation by the full Senate. Committee votes have yet to be announced for Kathleen White, Andrew Wheeler, or Steven Gardner.

On January 25, 2018 R.D. James was confirmed as Assistant Secretary of the Army for Civil Works by a vote of 89-1. To track the confirmation process of key geoscience presidential nominations from the Trump Administration, visit AGI’s Federal Nominations page.

Two-year Delay to WOTUS Applicability Date Finalized after the Supreme Court Ruled that Challenges Belong in federal District Courts
On January 22, 2018 the U.S. Supreme Court unanimously ruled that any challenges to the Waters of the United States (WOTUS) Rule must be filed in federal district courts, not federal courts of appeals. Since the WOTUS Rule was finalized in 2015, dozens of parties filed lawsuits in both federal district courts and appeals courts challenging the Obama-era regulation that expanded the definition of “waters of the United States” protected under the Clean Water Act. On October 9, 2015, the Sixth Circuit Court of Appeals stayed the WOTUS Rule nationwide, thus blocking the Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) from using the new definition when enforcing the Clean Water Act. The Supreme Court jurisdictional ruling on the National Association of Manufacturers vs. Department of Defense (No. 16-299) now removes the nationwide stay from the Sixth Circuit Court, but the August 28, 2015, North Dakota federal district court’s injunction against implementation of the WOTUS Rule in 13 states remains in effect.

While the Supreme Court’s ruling would have permitted enforcement of the WOTUS Rule in 37 states, the EPA and USACE finalized a rule (82 FR 55542) on January 31, 2018 that creates a new applicability date for the WOTUS rule two years from now. Meanwhile, the agencies are in the process of overturning the rule to recodify the previous definition (82 FR 34899) and eventually write a replacement regulation, pursuant to President Donald Trump’s executive order on February 28, 2017. Changing the applicability date is a novel approach to delay regulation enforcement and will likely be challenged in court by environmental groups that argue the intention was to change the “effective date” of WOTUS. According to the Administrative Procedure Act, the effective date for a rule cannot be changed after the regulation takes effect – the WOTUS Rule already took effect in August 2015. ■

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Remembrance

PAUL M. BASINSKI



With great regret we mourn the passing of Paul M. Basinski, a well-known expert in unconventional resource geology and geophysics. Paul's unique career included corporate assignments at Chevron, Kerr McGee and many years at ConocoPhillips. Paul led a team at COP that discovered and developed the volatile-oil play in the South Texas Eagle Ford Shale. He later led another team focused on global unconventional resources using the methodology his team generated working on the Eagle Ford.

Paul was active in AAPG in the Energy Minerals Division and in the Houston Geological Society. Paul was Unconventional Resources theme chair for the 2011 AAPG Conference in Houston, and worked on the GCAGS 2015 Convention in Houston. Paul was the essence of the creative thinker and had a personal system of scientific inquiry that he said led him to find new reserves in old basins. At the Houston Playmaker program in 2014, Basinski gave a well-received talk on the method of his unconventional thinking. This program is online at <https://youtu.be/BPYDhyvDHMY>.

Part of what made Paul Basinski successful in unconventional exploration is that he started as a mining geologist, first at University of Nevada at Reno (MS degree 1978), and then as a mining geologist at Kerr McGee and successor companies. His undergraduate degree was at the State University of New York at Buffalo. His grasp of mining technology and engineering helped him attain insights into the value of the Eagle Ford before competitors.

After retiring from ConocoPhillips, Paul started Burgundy Exploration, Bordeaux Xploration and the Icewine venture that explored source rock shale in Alaska. The Icewine #1 was drilled in 2015 and core analysis confirmed the target HRZ Shale geological model. Icewine #2 was drilled in 2017 and is still being tested with a vertical completion.

In early 2018 Paul's health started failing due to a heart condition. His great regret was that he may not be able to follow through on his exploration efforts in Alaska. As he said in an email before his heart operation, "Yet the greatest gift is that I'm totally at peace with whatever our Almighty chooses for me next. Why? It's all about discovery that awaits on the other side of this operation ... be it on our beloved Gaia or in the eternal ether." ■

– Linda Sternbach

Remembrance

DAVID J EWING
1927–2018

DAVID JAY EWING was born in Newell, West Virginia, on April 18, 1927. He succumbed to lung cancer on February 17, 2018, at his home in Sugar Land, Texas. He joins his parents, Robert and Grace Ewing, his sister Patti Rowe, his brothers Paul and Richard, plus his son, Robert Ewing, who preceded him.

Dave graduated from Wooster College, Wooster, Ohio, with a BSc in Geology, and an MA in Petroleum Geology from The University of Pittsburgh. He was involved in both prospect generation and field development geology in the U.S. and Canada specializing in the Rocky Mountain basins as well as Texas and Louisiana, for more than 65 years.

His employment history included Amoco Production Company, Woods Petroleum Company, Wainoco Oil & Gas Company, Energy Sources, Inc., and finally his own Ewing Exploration Company.

Dave enjoyed singing baritone, joining the Barbershop Harmony Society (then the SPEBSQSA) with the Calgary Stampede Chorus, serving as the first non-Canadian President. After moving to Houston he joined the Houston Tidelanders, where he also served as President.

The highlight of his barbershop career was winning the 1989 International Seniors Quartet Competition, held in Honolulu, as the baritone of the Bayou City Music Committee. He later served as President of the Association of Seniors Quartet Champions (AISQC). This musical association gained him many life-long friends.

He is survived by his wife, Marilyn Turner of Sugar Land; daughter Leslie Melton, Sugar Land; daughter Anne Lang, Calgary, Alberta, Canada; granddaughter Robyn Lang, Calgary; grandson Richard Lang and wife Maria Teresa; great-grandson Graydon Sheardown, great-grandson Jakob David Lang, and great-granddaughter Kayleigh Anne Lang, all from Calgary; plus his sister-in-law, Ruth Ewing, Wooster, Ohio, and her two children, Heidi and Tim; niece Trish Rowe, Valparaiso, Florida; and nephew Rick Ewing, Columbus, Ohio. Many other extended family members and friends will miss him.

A Celebration of Life was held at 4:00 p.m. Sunday, March 11, 2018, at St. Mark's Episcopal Church, 7615 FM 762 (the extension of Grand Parkway, south of U.S. 59). ■

HGS Conference Flooding in Southeast Texas: The Science Behind the Floods

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See pages 9-12

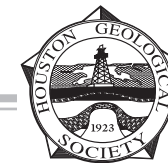
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Figures, maps, diagrams, etc., should be digital files using Adobe Illustrator or Adobe Photoshop. Files should be saved and submitted in .ai, .eps, .tif or .jpg format. Send them as separate attachments via email or CD if they are larger than 5 MEGs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

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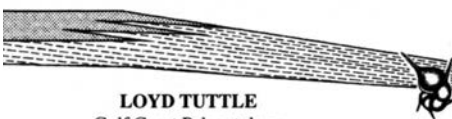


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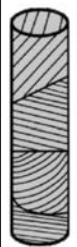
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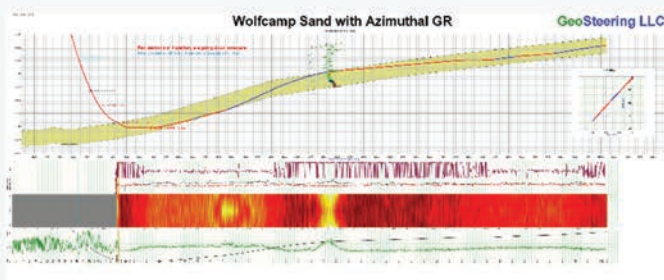
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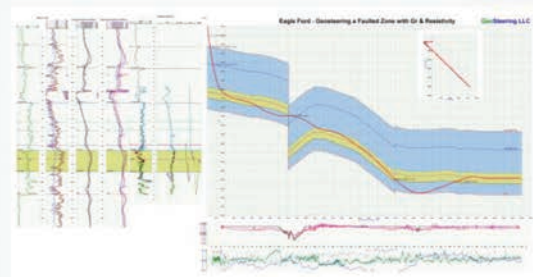
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