

# HGS Bulletin

Volume 63, Number 9

Houston Geological Society

May 2021

**ELECTION ISSUE**

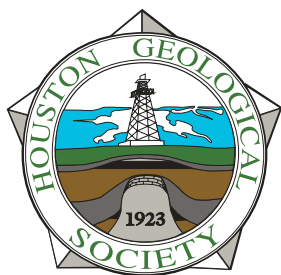
**ANALYSIS OF PALEO -LANDSCAPES,  
-SEASCAPES AND -ACCOMMODATIONSCAPES  
IN APPLICATION TO EXPLORATION AND  
DEVELOPMENT; ENGINEERING AROUND  
RISKS AND HAZARDS  
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HGS Executive Office Director	Andrea Peoples	713-463-9476	andrea@hgs.org		
HGS Admin. Assistant/Web Content Manager	Alyssa Cushing	713-463-9476	acushing@hgs.org		



# The Bulletin

## Houston Geological Society

Volume 63, Number 9

May 2021

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

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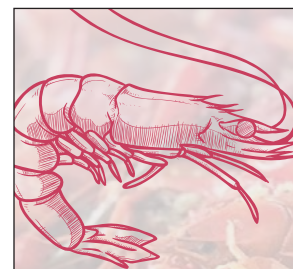
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Arnold Powell Milton

**About the Cover:** Mowry Formation near Alcova Reservoir, Natrona Co., Wyoming. An excellent outcrop of late Albian dark gray-black laminated, organic-rich silty mudstones with multiple interbeds of laterally variable bentonites (pale horizons). Oxygen-deficient conditions were prevalent, although occasional bedding planes are rich in pelagic and juvenile benthic fauna reflecting short duration phases of sea floor oxygenation. Kerogens are generally dominated by amorphous organic matter, with stress-tolerant organic walled microplankton prevalent. This geographically extensive formation comprises an unconventional reservoir in the Powder River Basin to the east of Alcova. Main bentonite bed approximately 12 inches thick.  
● Photo supplied by Jim Fenton, CGG Robertson.



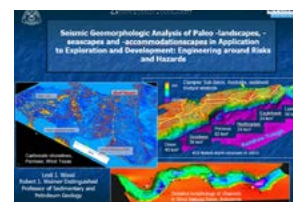
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# HGS SHRIMP PEEL & CRAWFISH BOIL

FRIDAY, MAY 21, 2021

12:00PM – 6:00PM

BEAR CREEK PIONEERS PARK, PAVILION 6  
3535 WAR MEMORIAL ST. HOUSTON, TX 77084

*Pavilion #6 is located off Bear Creek Dr.*



**BOILED SHRIMP  
CAJUN CRAWFISH  
CORN & POTATOES  
BEER & BEVERAGES  
DJ MUSIC**



Member and guest reunion & celebration at our first in-person event in over a year!

HGS Members \$30

Non-Members \$35

Walk-Ups \$45

## Sponsorship Opportunities

Shrimp Sponsor \$1,500 – 5 complimentary tickets

Crawfish Sponsor \$1,500 – 5 complimentary tickets

Beer & Beverage Sponsor \$1,000 – 4 complimentary tickets

Music Sponsor \$1,000 – 4 complimentary tickets

Platinum Corporate Sponsor \$1,000 – 4 complimentary tickets

Gold Corporate Sponsor \$750 – 3 complimentary tickets

Silver Corporate Sponsor \$500 – 2 complimentary tickets

Bronze Corporate Sponsor \$250 – 1 complimentary ticket

**For sponsorships, please call Andrea Peoples at the  
HGS Office at 713-463-9476 or email [office@hgs.org](mailto:office@hgs.org).**

**Register online at [www.hgs.org](http://www.hgs.org)**



**Jim Tucker**  
president@hgs.org

## Coming Up, and a Bit of the Past

I just finished listening to a HGS technical presentation on geothermal energy capture, including a bit on non-utility scale resources, and the potential for distributed geothermal opportunities for direct use for commercial and residential buildings, in addition for electric generation. Our knowledge of the subsurface allows us to be in the lead on developing this resource. Some of are looking for new professional directions to be involved in, and several were discussed at the recent 7 April Upstream Hiring Event initiated by the local SPE Gulf Coast Section, with participation of the HGS and other geoscience professional associations and over thirty other professional groups. It is always disappointing to see colleagues participating in these events who involuntarily have had their careers interrupted. We all enjoy our selected careers and the opportunity to develop and learn, while benefitting our employers, but unplanned career punctuations are a part of our careers these days. These local hiring events occur twice a year, and planning for the next one in Autumn 2021 will begin soon. If you would like to participate in the next one as part of the HGS Employment Committee, please contact me, as it is a great networking opportunity.

Although we have not had any in-person HGS events for over a year for health reasons, we plan to have the next edition of our periodic Shrimp Peel and Crawfish Boil on Friday 21 May in a park in west Houston, so we can all space comfortably while still being safely social with old friends and new colleagues. Information is elsewhere in this *Bulletin*. Also, elections for the next HGS Board will continue until 10 May. The voting is all online ([https://www.hgs.org/ballot/cast\\_your\\_vote](https://www.hgs.org/ballot/cast_your_vote)) and we thank all the Members volunteering to stand as candidates. It takes a lot of effort to produce the range of activities and distributing it to volunteers and the Board Members allows the many activities of the world's largest local geoscience society. Also, we are accepting nominations for the annual HGS awards, and nominations may be sent to the HGS Office. Online information on the awards (<https://www.hgs.org/houston-geological-society-awards-criteria>) and a list of past awardees (<https://www.hgs.org/awards-list>) is on the HGS Website at HGS.org.

### **A few other things while waiting to circulate bottoms up:**

Some of can still recall our student days when May was a time to prepare for summer geology field camp. This seems to be unique

to North America, and mainly the United States. My university had very small undergraduate classes and no field camp, so we all had to write letters (sometimes dozens) to geology departments to try and join their summer programs. Kind of like our first experience with applying for a job. Fortunately our department had a practice field exercise during our junior year spring break, and we drove to Big Bend National Park and mapped Mariscal Anticline, and toured area geology. Good preparation for later field camp in Montana (which was great) and the first time we were presented with some geology, defined the problems to be solved, prepared maps and reports, and presented our results, a preview of later career activities. I am still a member of my field camp, which is my cheapest professional membership. If your field camp has memberships, I'm sure they can use your support, or a donation. Field camps are becoming fewer and fewer, and we need to maintain this vital educational resource.

I don't often read The New York Review of Books, but the 11 March cover caught my eye. There were illustrations of rocks, geology block sketches and other natural history diagrams. So, I had to give it a closer look, and there was a review of *Strata: William Smith's Geological Maps* (University of Chicago Press, 256 pp.) by Jenny Uglow, a British biographer. As a biographer, she focuses a lot in her review on Smith's life (occasional unemployment-sound familiar?) and the context of the early development of modern geology. Her geological descriptions were good, so the compilation must read well. And she pointed out that much of Smith's reports and maps were directed toward economic geology and soils, essentially resources, as so many of us are involved in today. I am still surprised when talking to someone in Houston that they have never met a geologist, since there are so many of them here. But there is increasing attention by the public, in a general way, on geoscience, with all the discussion of resources and climate science these days. I hope when we have an opportunity to discuss our geoscience with someone, we take the few minutes to get beyond the lead paragraph of a news article or brief broadcast sentence to answer their questions and communicate our excitement in what we do, particularly if they are a student. ■

*Stay safe, and volunteer for something this month.*





**14 - 15 SEPTEMBER 2021**  
**Virtual Event**

## CALL FOR ABSTRACTS

The PESGB/HGS Africa conference has built a reputation for hosting high quality subsurface focused technical talks on activity in Africa. In 2021, the conference will focus on how Africa transitions over the next decade.

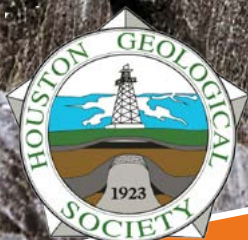
Alongside submissions on the latest activities in exploration, lessons learnt from past exploration activities, field development, reservoir management and enabling technologies; we also seek abstract submissions on geothermal activity, carbon storage and related subjects.

The PESGB Africa Technical Committee invites you to submit an abstract for the programme. Your research could be featured on the agenda, giving you a platform to present your work to a global audience. You also have the opportunity to win one of the prestigious awards for technical excellence for the best presentations, including special awards for student & overseas contributors.

**Submit your abstract online: [africa.pesgb.org.uk/callforabstracts](https://africa.pesgb.org.uk/callforabstracts)**  
**Abstract submission deadline: Friday 14 May 2021**

Registration now open! Visit [africa.pesgb.org.uk](https://africa.pesgb.org.uk) to book your early bird ticket.

For more information please contact: [events@pesgb.org.uk](mailto:events@pesgb.org.uk)



**#AFRICA2021**

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Ceri Davies  
editor@hgs.org

## Still Lots Left to Explore

This month has been busy with a visit to Galveston for the Nao Santa Maria tall ship and camping at Mission Tejas State Park and Bovay Scout Ranch.

Each of them promote a sense of adventure that all good geologists can relate too – I've yet to meet a geologist who does not enjoy exploring a new outcrop or discovering a new play that needs to be drilled.

Currently docked in Galveston, the Nao Santa Maria is a replica of the flagship used by Christopher Columbus on his first voyage across the Atlantic Ocean in 1492. Originating out of Santona, Cantabria, home of the limestone ridges mentioned in the HGS *Bulletin* October issue – the Santa Maria made its way to the new world only for, as one story suggest, it to become grounded on an unexpected sand bar off the coast of modern day Haiti.

Mission Tejas is a 660-acre state park located on the northern tip of Davey Crockett National Forrest. Although the exact location of the original Mission Tejas remains unknown, the park contains a replica of the original church built back in the late 1600's, representing the first Spanish settlement in East Texas. The settlement lasted three years before the Spanish headed onto San Antonio.

The last installment comes in the teaching for tomorrow, with a camp out at Bovay Scout Ranch. Here the Scouts can learn all sorts of activities ready for their own adventures, with nature, energy, ecology and conservation programs all available, all without the need for a video-conference call.

If you're ready for some new reading material this summer, I fully recommend Bill Bryson and his book *A Short History of Nearly Everything*. It's an excellent read, with the section discussing the French Geodesic Mission to Peru-Ecuador particularly inspiring for any explorer. Taking place nearly 300 years ago, the team (including Pierre Bouguer of the Bouguer anomaly amongst others) set about measuring the length of a degree at the equator through the most difficult of terrane anyone could imagine.

Keep well, see you soon,  
Ceri



Nao Santa Maria – recently docked in Galveston. Ocean Star Offshore Drilling Rig Museum in the background. Photo from [www.galvnews.com](http://www.galvnews.com).



Replica of Mission Tejas, built by the Civilian Conservation Corps circa 1935. Photo from [www.hipcamp.com](http://www.hipcamp.com)



Marathon Oil Company Oil Derrick at Camp Bovay. Photo from [www.samhoustonbsa.org](http://www.samhoustonbsa.org)

**EAGE**

EUROPEAN  
ASSOCIATION OF  
GEOSCIENTISTS &  
ENGINEERS



# THIRD EAGE/HGS CONFERENCE ON LATIN AMERICA

leading the global future supply growth

## SESSION OVERVIEW

8-10 NOVEMBER 2021 • HOUSTON, UNITED STATES & ONLINE

[www.eage.org](http://www.eage.org)



# Welcome to

## the Third EAGE/HGS Conference on Latin America



### Latin America – An Exploration Overview

**Chairs: Bob Fryklund (IH5) and  
Daniel Minisini (Shell)**

The Atlantic conjugate margin agglutinate the activity of most offshore operators. Analyzing the geological and non-technical risks at continental scale allows ranking the opportunities within the entire conjugate margin, classifying reliable sites against marginal sites, based on criteria derived from the same group of explorers, and on knowledge transferred from databases geographically far apart. Method, data and mindset behind these analyses will be presented to debate among explorers.

Brazil and Guyana are leading the region and the world in new volumes of discovered hydrocarbons. Mexico is in pursuit, but the next several years of deep-water drilling will be critical. Colombia offshore too is in the proof of concept stage and upcoming wells will be critical in determining if there are enough resources for commerciality. In Argentina, the Vaca Muerta is ramping up.

- Still lots of basins remain under-explored.
- Where will the next discovery be?
- What role will future demand and the call for a reduced carbon footprint have?
- Will Venezuela rejoin the marketplace?

### Frontier Areas; New Plays and Missed Opportunities

**Chairs: Catie Donohue (GeoMark Research) and  
Mark Olson (Apache)**

The Latin America and Caribbean regions contain about 20% of the global proven oil reserves but the excitement of the area lies in the significantly under explored offshore and unconventional opportunities. Recent exploration work

is challenging preconceived models of reservoir presence, source presence, and tectonic development to identify some compelling new petroleum concepts. From new reservoir provenance models in Mexico, updated crustal type models in the Caribbean and new details on the A-C-T source rock along the equatorial margin, these new ideas are driving frontier exploration and regenerating interest in the area.

### Greater Caribbean; Non-Guyana and Suriname

**Chairs: Bryan Ott (Hess) and  
Sean Romito (University of Houston)**

The Caribbean Region remains a challenging frontier area located between the prolific oil-rich basins of the Gulf of Mexico and northern South America. Despite a number of gas discoveries in recent years, bold explorers continue their search for the elusive oil field, and the region has seen numerous high-impact wildcats drilled in the recent years. This year BPC spud the Perseverance -1 wildcat targeting Jurassic to Cretaceous carbonates in a large fold on the Bahamas Bank. BHP and partners continue exploring in the deep water areas of Trinidad, where a number of gas discoveries have been made. Elsewhere in the Caribbean, Shell has farmed into offshore Colombia, and ongoing farm-outs continue in Jamaica.

### Greater Caribbean; Guyana and Suriname

**Chairs: Shawn Wright (Hess) and  
Ben Kirkland (CNOOC)**

The Guyana-Suriname basin is often considered one of the last remaining under-explored but highly prospective basins in the world. With exception of the discovery of the onshore Tambaredjo and neighboring heavy oil fields in Suriname in the 1960s, a spotted exploration history

dating back to the 1920's had been largely unsuccessful. Exploration interest was renewed when a 2002 report by the USGS estimated ~13.6 Bbbls of oil reserves were left undiscovered. Exploration efforts were soon rewarded with the economic discovery of high-quality oil-bearing Late Cretaceous turbidite sands at Liza-1 in the Stabroek block by an ExxonMobil-led partnership in 2015. Following the Liza discovery, additional operators have found success in the basin with discoveries at Jethro and Joe (Tullow-led), Maka, Sapakara, Kwaskwasi, and Keskesi (Apache-led) and Sloanea (Petronas-led). Since 2015, ~25 commercial discoveries have been made making the Guyana-Suriname basin the most exciting basin on the Atlantic margin. As exploration moves outside of the proven Upper Cretaceous stratigraphic trap play fairway in the SE Stabroek area, the level of technical understanding of the petroleum system is the key to predicting hydrocarbon fluid properties and discovering additional resources. In particular, source rock presence/maturity and reservoir presence/quality are areas of substantial interest. With several high-impact wells in the very near future targeting Paleocene to Jurassic plays, the players in this basin are continually acquiring new information and the future of the Guyana-Suriname basin is bright.

### **South Atlantic; Non-Brazil**

**Chairs: Katy Sementelli (BHP) and Corey Moss (Murphy)**

Industry activity has recently shifted south to the countries of Argentina and Uruguay with successful bid rounds held in each country in 2018 and 2019. Both countries saw an increase in interest in Frontier Offshore blocks with awards going to supermajor partnerships in Argentina (Shell, XOM, Total) and independents operators in both countries (BPC in Uruguay, for example). Recent seismic acquisition and reprocessing of data have expanded interest in new play ideas, such stratigraphic traps in deep-water reservoirs, and revisiting known plays in new areas (Malvinas Basin). Uruguay has revamped the bid-round process to include an open-round formula for flexible options in generating interest in both offshore and onshore acreage. Argentina has put the 2020 round on hold in light of economic investment concerns related to the COVID19 pandemic. However, activity in the region has not stalled with seismic acquisition associated with work commitments continued in 2020. Optimism in the Southern Atlantic was enhanced with a discovery in 2019 in the Outeniqua basin off South Africa by Total with the Brulpadda well. Further excitement continues with a well of interest; Total's Venus-1 wildcat targeting a major ultra-deepwater prospect in the Orange Basin offshore Namibia which may confirm the Cretaceous source potential in the South Atlantic. Frontier exploration continues in the Southern Atlantic areas.

### **South Atlantic; Brazil**

**Chairs: Bill Dickson (DIGs) and Marcus Zinecker (BP)**

#### **Equatorial Margin - huge region, unclear potential**

Vast region with potential for Upper Cretaceous & younger fan plays analogous to Jubilee (offshore Ghana) and Zaedyus (offshore French Guiana). Restrained by lack of infrastructure except Potiguar/Ceara (easternmost basins) where existing onshore and shallow water fields mature. Undeveloped deepwater discoveries at Pecem, Pitu, Tango.

### **Southeast Margin - giant and super-giant discoveries & production; unexplored potential**

2021 excitement includes:

**Sergipe:** ExxonMobil well on an outboard ultra-deep-water block, perhaps testing two new play types (contourite sands, carbonate buildups on rift-age volcanic features) which could require sourcing from Aptian seaward dipping reflectors interbeds where younger A-C-T marine source is too shallow or absent.

**Campos:** probe ultra-deep-water targets with both post-salt A-C-T marine source pods; and usual syn-rift-sag lacustrine source. Post-salt targets include contourites in lows; pre-salt CO3 targets difficult to image and areally reduced by lack of regional top seal resulting from extensive salt movement.

**Santos:** 3D mapping of present-day pre-salt structuration is excellent; reservoir facies inversions are good; but insufficient. Need better understanding of basin evolution at crustal level to improve models of thermal history, CO2 and volcanic pathways, source facies distributions.

### **Pacific Margin; Onshore and Offshore**

**Chairs: Lucia Torrado and Leo Liu (Chevron)**

The Pacific Margin of Latin America has one of the largest concentrations of oil seeps in the world. With several mature Cretaceous to Cenozoic source rocks, reservoirs like turbidite sandstone, extensive seal rocks and multiple, combined trapping mechanisms, the Latin America's convergent margin is proving to be an attractive area ready to be explored. The increased availability of high-quality data and farm-ins from major O&G companies like Equinor in Nicaragua's Sandino basin, and Tullow Oil, BP and Oxy's in the Peruvian offshore are an encouraging indicator of the value and potential of this margin.

### **Mexico**

**Chairs: Stan Ingram (CNOOC) and Mike Durcanin (Murphy)**

Mexico is a major petroleum producing country with numerous proven basins, including the both the Salina del Istmo and Sureste "Super Basin" with ~60 BBOE of recoverable reserves. These offshore basins are characterized by world-class mature source rocks with numerous reservoir – seal pairs proven in several different stratigraphic intervals similar to its northern counterpart. Unlike the US GoM however, initial exploration and development generally focused mainly on both shallow-water Cretaceous and Jurassic carbonates. As such, the deeper water clastic Neogene/Paleogene plays attracted little interest until now. Following the historic energy reform in 2013, five offshore license rounds were held between 2014 – 2018 with participation from 25 companies that bid over 50 exploration wells and numerous seismic acquisition programs across 55 licenses. With the exception of the giant Zama discovery (roughly 700+ mmbo recoverable) within the Upper Miocene play in the Sureste basin and minor successful step outs within this play (i.e. Cholula, Saskeen), exploration results thus far have been disappointing. Recently, the newest discovery, Polok-1, confirmed a commercially viable petroleum system in the Lower Miocene. To date, as over half of the initial commitment wells remain to be drilled, Mexico remains an exciting location for exploration activity in 2021 and beyond.





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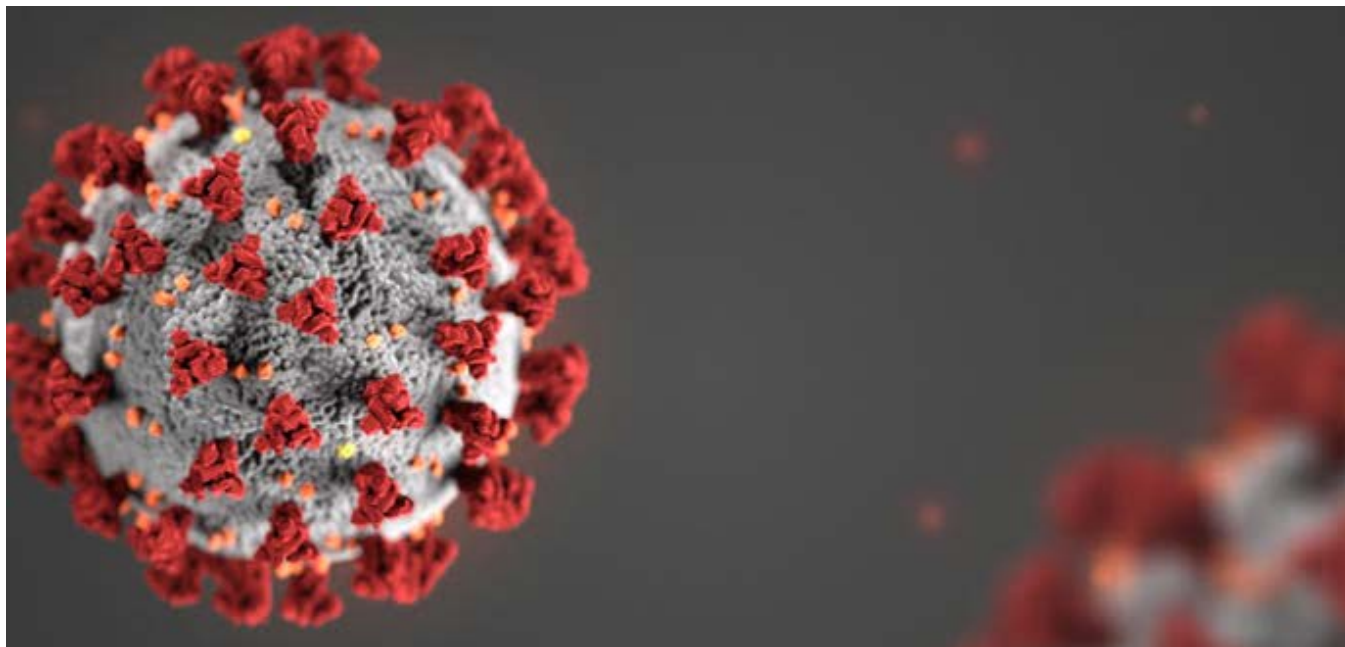
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## Coronavirus (COVID-19) Policy Statement: Updated Saturday, May 1, 2021

Slowly we are beginning to return to in person outdoor events, with the Shrimp Peel the first of these, but we continue to maintain a cautious approach to indoor social and educational gatherings. Please check the HGS website on a regular basis for all HGS online event opportunities.

The HGS Board will continue to monitor the situation and determine whether to extend the cancellation or postponement of HGS indoor in-person events.

Please monitor [hgs.org](https://hgs.org) and your email for further communication concerning HGS events.

For more information about how you can help to prevent the illness, visit the CDC website: <https://www.cdc.gov/>.

*2020-2021 HGS Board*



Monday, May 10, 2021

Virtual Meeting via Zoom

6:00 – 7:00 p.m.

HGS Members \$10 Non-Members \$25 Students \$5

<https://www.hgs.org/civCRM/event/info?id=2260>

Registered Attendees: A confirmation email will be sent upon registration with meeting links.

Event contact: Bryan Guzman – [bryanguzman85@gmail.com](mailto:bryanguzman85@gmail.com)

**\*\*Non-Members can submit an application and pay their dues before registering to get the member price. Please call the HGS office at 713-463-9476 to be registered only AFTER your application and dues are submitted.\*\***

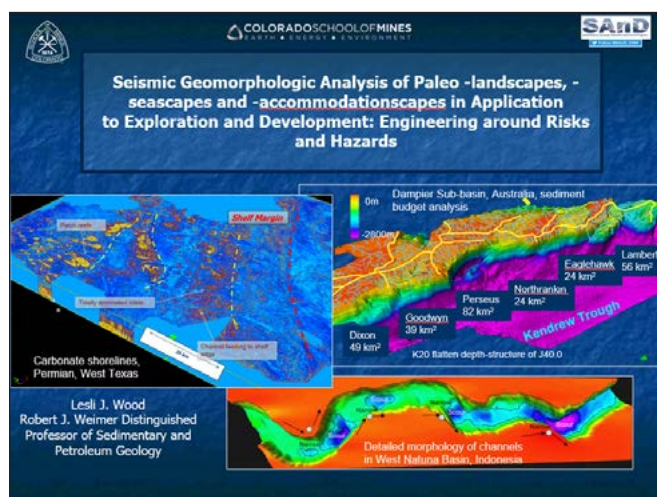
## HGS General Virtual Dinner Meeting

*Dr. Leslie Wood*

*Colorado School of Mines*

HGS General Virtual Dinner Meeting

# Analysis of Paleo -landscapes, -seascapes and -accommodationscapes in Application to Exploration and Development: Engineering around Risks and Hazards



The development in the 90s of seismic geomorphologic mapping of paleo-landscapes and -seascapes was truly an eye-opening revolution in the way we see the historic Earth and the processes that have shaped it. Likewise, recognition of the potential that seismic geomorphology brought to de-risking reservoir and seal, linking structural evolution to basin fill architecture and the toward understanding the magnitude of processes (volcanic, climatic and geomorphologic) that influence a basin's evolution led to the development of improved tools to image these landscapes and seascapes, such as Stratamagic, Geoprobe, and Paleo-Scan. Our ability to view these historic land-scapes and sea-scapes have evolved to mapping of accommodation-scapes (ie., the three-dimensional distribution of conditions of accommodation that influence processes of erosion and sediment accumulation). This talk will document; using the amazing detailed seismic images of

ancient surfaces, the advances in planet-surface process imagery through seismic geomorphologic and other technologies, and detail the revolution in our understanding of the earth's process history and the formation of our sister planets, born through the past 30 years of application of digital geomorphologic analysis of systems. Finally, we will talk about the importance of engineering for the future of life on this planet and beyond, through conditions that are revealed in our study of these ancient land-scapes, seascapes and accommodation-scapes. ■

### Biographical Sketch



**DR. LESLIE WOOD** joined the faculty at Colorado School of Mines in 2015 as the Robert J. Weimer Distinguished Chair and Professor in Sedimentary and Petroleum Geology, where she is Professor and Director of the Sedimentary Analogs Database and Research Program (SAnD). Prior to joining CSM, Dr. Wood held positions at The University of Texas

at Austin, Amoco Production Company and Arco. Dr. Wood specializes in quantitative seismic geomorphology of clastic basins, tectonics and sedimentary system interactions, submarine and sublacustrine mass failures, petroleum geology, shales tectonics and geomorphology of Mars. She has served as SEPM Society for Sedimentary Geology national Secretary-Treasurer, the GCSSEPM President and is active in AAPG. Dr. Wood has published widely on the nature of modern and ancient deep- to shallow-water systems around the world and she and her students have won numerous best paper and poster awards.

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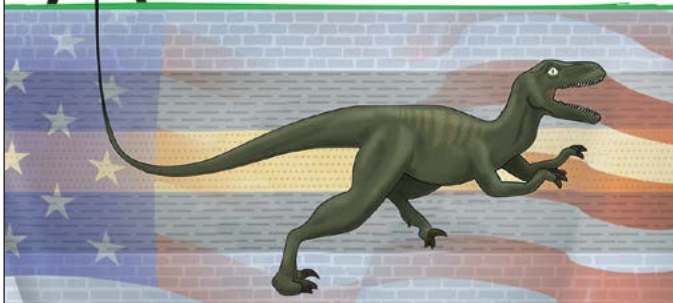


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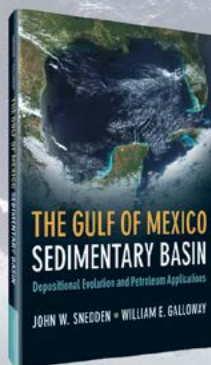
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Wednesday, May 12, 2021

Virtual Meeting via Zoom

7:00–9:00 p.m.

HGS Members \$10 Non-Members \$25 Students \$5

<https://www.hgs.org/civicrm/event/info?id=2252>

Registered Attendees: A confirmation email will be sent upon registration with meeting links.

Event contact: Matthew Cowan – [mrccowan1@hal-pc.org](mailto:mrccowan1@hal-pc.org)

**\*\*Non-Members can submit an application and pay their dues before registering to get the member price. Please call the HGS office at 713-463-9476 to be registered only AFTER your application and dues are submitted.\*\***

# HGS Environmental & Engineering Virtual Meeting

*Meagan Hale  
Rice University*

HGS Environmental & Engineering Virtual Meeting

## Urbanization's Environmental Impact on Water Quality

As human population grows, an increasing amount of land is being used for urban infrastructure. However, the environmental impacts of this urbanization are not completely understood. One aspect of urbanization's environmental impact is water quality. For instance, the concrete used in water transport and drainage systems can leach Ca ions into urban rivers and increase water pH. These changes are of concern because pH range is a major factor in determining the toxicity and bioavailability of chemical compounds. Additionally, many aquatic microorganisms can only thrive within certain ranges of pH and Ca concentrations.

To investigate how the concrete used in urban infrastructure impacts water quality, I studied two major rivers in Houston, TX – White Oak Bayou, which is lined with concrete, and Buffalo Bayou, which has a natural river bottom. These two rivers were

compared with the non-urban Trinity River, since river chemistry may be affected by the presence of concrete anywhere within the river's watershed. I collected water samples from Buffalo and White Oak Bayous and analyzed their major anions and cations using ion chromatography (IC) and inductively-coupled plasma mass spectrometry (ICP-MS) methods, respectively. In addition, I analyzed roughly 50 years' worth of public water quality data for each Bayou and the Trinity River. The data suggest that the concrete-lined White Oak Bayou has a higher Ca concentration and pH value than Buffalo Bayou. Both urban bayous have higher average pH values than the Trinity River. The results of this research expand our knowledge of the environmental impacts of water transport and drainage systems. ■

### Biographical Sketch



**MEAGAN HALE** is a (very) soon-to-be graduate of Rice University's Earth, Environmental, and Planetary Sciences department. She is primarily interested in pollution/urbanization and environmental chemistry, and she completed a senior honors thesis on the topic she is speaking about today. After graduating with her BS, Meagan plans to work for a few years in industry to get a more well-rounded understanding of environmental issues. She hopes to eventually attend graduate school and earn a PhD to further her research career. In addition, she is an avid artist, and would love to someday publish a graphic novel to educate kids about science.





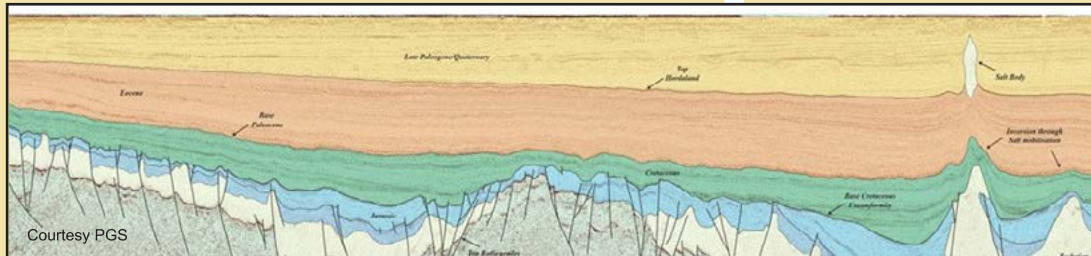
# A Live Webinar

Sponsored Jointly by the SEG and GSH



SOCIETY OF EXPLORATION  
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## Basic Seismic Interpretation



**Four Half-days (9 AM - 1 PM Houston Time) May 25-28, 2021**



*Presented by*  
**Don Herron & Bob Wegner**



The course consists of lectures on fundamental topics including basics of seismic exploration, seismic response, velocity, resolution, seismic migration, seismic correlation and mapping techniques, and quantified interpretation. Lectures are supported by hands-on exercises, and the second half of the course includes several practical correlation and mapping exercises and projects.

### Session 1

- What is Seismic Exploration
- Seismic Exploration Fundamentals
- Intro to Seismic Interpretation

### Session 2

- Seismic response
- Velocity
- Resolution
- Seismic migration

### Session 3

- Fault interpretation
- Horizon interpretation
- 2D seismic interpretation techniques
- Correlation and mapping exercise (3D seismic grid)

### Session 4

- Quantified interpretation
- Bright Spot Interpretation
- Course summary

Don Herron received a B.S. (with honors) in geological sciences from Brown University and a M.S. in geological sciences from the California Institute of Technology. He was a seismic interpreter at Texaco, Gulf, and Sohio/BP. Following retirement from BP he was a geoscience consultant for PGS and a seismic interpretation instructor for several major oil companies. He was co-instructor for the SEG Continuing Education course "Seismic Interpretation in the Exploration Domain", a member of the Editorial Board of The Leading Edge (TLE) (chairman 2006-2007), an Assistant Editor for the joint SEG-AAPG journal Interpretation, and wrote TLE's "Interpreter Sam" column (2003-2019).

Bob Wegner received a B.S. in geology from Queens College, a M.S. in geophysics from Lehigh University, and a Ph.D. in geophysics from Rice University. Bob retired from ExxonMobil's Upstream Research Company after developing quantitative seismic interpretation tools and techniques. He has taught petroleum exploration at Rice University and the University of Texas' Continuing Education Department, is a short course instructor for the SEG and AAPG in Basic Seismic Interpretation, has been a member and chairman of the SEG Continuing Education Committee, and is a reviewer for the special session of the joint SEG-AAPG journal Interpretation dealing with seismic Interpretation pitfalls.

This **16 hour course** can be taken in the comfort of **your office** or even **your own home**. It works on **PC's, iPads, iPhones**, or even two tin cans with a taut string (not recommended). **No travel costs.**  
**The Course Fee: \$390!** With major discounts for Groups and Students. 1.6 CEU's are awarded.



What if I have to miss a session?

Worry Not, All sessions are recorded and available to registrants.

**Visit [gshtx.org](http://gshtx.org), Events Tab to register and see expanded Course and Presenter Information**



Wednesday, May 19, 2021

Virtual Meeting via Zoom

12:00 – 1:00 p.m.

HGS Members \$10 Non-Members \$25 Students \$5

<https://www.hgs.org/civicrm/event/info?id=2265>

Registered Attendees: A confirmation email will be sent upon registration with meeting links.

Event contact: Bryan Guzman – [bryanguzman85@gmail.com](mailto:bryanguzman85@gmail.com)

**\*\*Non-Members can submit an application and pay their dues before registering to get the member price. Please call the HGS office at 713-463-9476 to be registered only AFTER your application and dues are submitted.\*\***

## HGS General Virtual Lunch Meeting

*Dr. Marit Brommer  
International Geothermal  
Association (IGA)*

HGS General Virtual Lunch Meeting

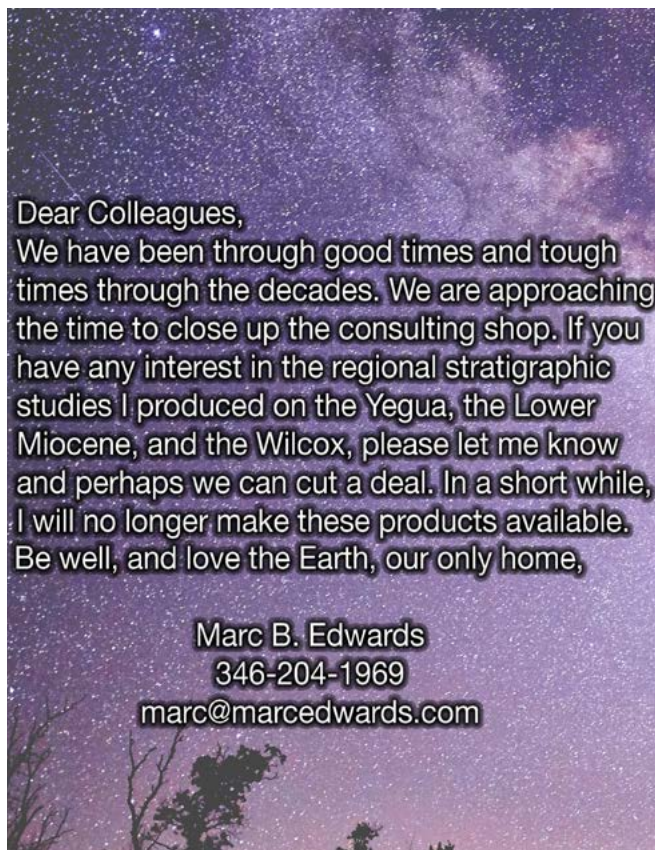
# Geothermal Breakthroughs: When, Where and Why?

Geothermal is considered the oldest start-up in the world, yet the time to scale seems to be right now: the world has a low-carbon goal to achieve, country governments are building back greener and renewable energy is becoming cheaper than fossil-fuels. In this presentation; Marit Brommer, Executive Director at the International Geothermal Association, will tell the geothermal story by looking into trends to watch and potential geothermal breakthroughs to come. She will talk about when, where and why geothermal energy may be the hottest projects in the years to come. ■

### Biographical Sketch

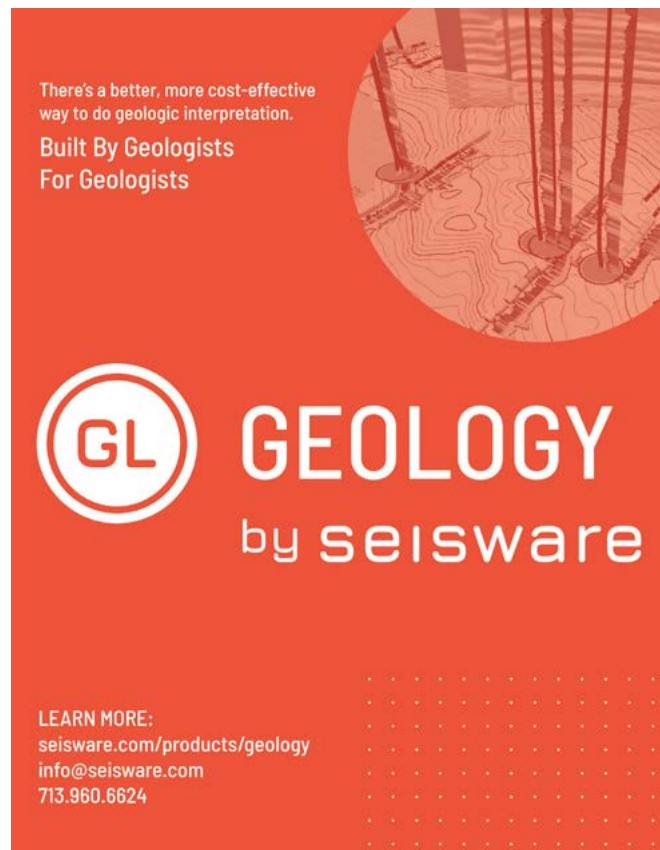
MARIT BROMMER is the Executive Director of the International Geothermal Association (IGA). She took seat in April 2017

coming from the Oil and Gas sector with a decade of experience in technology deployment and geoscience portfolio management. Marit is a passionate geologist with a Masters from the Free University in Amsterdam and a PhD from TU Delft. She is dedicated to transition the IGA into a professional body renowned for its geothermal expertise, networking opportunities and global presence. In addition she is keen to strengthen the activities with Clean Energy partners with a commitment to a low-carbon future energy mix




Dear Colleagues,  
We have been through good times and tough times through the decades. We are approaching the time to close up the consulting shop. If you have any interest in the regional stratigraphic studies I produced on the Yegua, the Lower Miocene, and the Wilcox, please let me know and perhaps we can cut a deal. In a short while, I will no longer make these products available. Be well, and love the Earth, our only home,

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# May 2021

Sunday

Monday

Tuesday

Wednesday



	<b>Reservations:</b> The HGS prefers that you make your reservations on-line through the HGS website at <a href="http://www.hgs.org">www.hgs.org</a> . If you have no Internet access, you can e-mail <a href="mailto:office@hgs.org">office@hgs.org</a> , or call the office at 713-463-9476. <b>Reservations for HGS meetings must be made or cancelled by the date shown on the HGS Website calendar, normally that is 24 hours before hand or on the last business day before the event.</b> If you make your reservation on the Website or by email, an email confirmation will be sent to you. If you do not receive a confirmation, check with the <a href="mailto:Webmaster@hgs.org">Webmaster@hgs.org</a> . Once the meals are ordered and name tags and lists are prepared, no more reservations can be added even if they are sent. <b>No-shows will be billed.</b>		
2	3	4	5
9	<b>10 HGS General Dinner Virtual Zoom Meeting</b> <i>"Analysis of Paleo -landscapes, -seascapes and -accommodationscapes in Application to Exploration and Development: Engineering around Risks and Hazards?,"</i> Dr. Leslie Wood Page 11	<b>11 HGS Board Meeting</b> 6 p.m.	<b>12 HGS Environmental and Engineering Dinner Virtual Zoom Meeting</b> <i>"Urbanization's Environmental Impact on Water Quality,"</i> Meagan Hale Page 13
16	17	18	<b>19 HGS General Lunch Virtual Zoom Meeting</b> <i>"Geothermal Breakthroughs: When, Where and Why?,"</i> Dr. Marit Brommer Page 15
23	24	<b>25 GSH-SEG Webinar</b> <i>Basic Seismic Interpretation</i> Page 14	26
30	31		

## 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.

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# GEOEVENTS

Thursday

Friday

Saturday



	<div>Don't wait, make your reservations online at hgs.org</div>	1
6	7	8
13	<b>14</b> <b>HGS-PESGB 2021 Virtual Africa Conference Call for Abstracts Deadline</b> <i>Page 4</i>	15
20	21	22
27	<b>28</b> <b>Virtual Pre-registered Prices:</b> Virtual Meetings members ..... \$10/15 Emeritus/Honorary members..... \$10/15 Student members ..... \$5 Nonmembers ..... \$30/35	29

**May 14, 2021**  
Call for Abstracts  
PESGB/HGS Virtual Africa E&P  
Conference  
*Page 4*

**May 21, 2021**  
HGS Shrimp Peel & Crawfish Boil  
*Page 2*

**September 14-15, 2021**  
PESGB/HGS Virtual Africa  
E&P Conference  
*Page 4*

**October 2021**  
Third EAGE/HGS Conference on  
Latin America  
*Page 6*

**November 5-6, 2021**  
South Texas Geological Society  
Field Trip  
*Page 28*

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# Candidates for the 2021–2022 Executive Board

## Houston Geological Society Officer Election

### The candidates put forth by the Nominations Committee are:

**President - Elect:** Walter Light, Joe Lynch

**Vice President:** Fang Lin, Patty Walker

**Secretary:** Patrick Loureiro, Lucia Torrado

**Treasurer-elect:** Neil Sullivan, Ryan Yarrington

**Editor-elect:** Ken Theis

**Directors (2 positions):**

Lanette Marcha, Troy Meinen, Kenneth Mohn, Dianna Phu

### HGS Election Voting Instructions

Members will be able to vote in one of two ways:

1. Return the paper ballot that will be delivered in the mail,  
OR
2. Vote online following instructions that will be delivered by e-mail.

**PLEASE VOTE** – Upon receiving the paper ballot or the e-mailed instructions!

**The voting period opens April 10, 2021 and continues to May 10, 2021.**

## President-elect (two candidates)



### Walter Light

#### Education/Industry Affiliations

Graduate of The University of Texas at Austin, Bachelor of Science in Geology – 1977

Member of The Hill Society, The Jackson School of Geosciences at The University of Texas at Austin 2012

40+ years experience directly involved in the oil and gas business  
Active Member American Association of Petroleum Geologists (AAPG) 1977 to Present

Trustee Associate of the AAPG Foundation 2010

Alternate Delegate – AAPG House of Delegates (2009-2010)

Delegate – AAPG House of Delegates of the AAPG (2010-2012)

Former Director and 32+ year member Houston Producers Forum

Former Director of Houston Geological Society (2008-2010)

Active Member of Society of Independent Earth Scientists (SIPES)

40-year Active Member: Houston Geological Society

South Texas Geological Society (San Antonio)

Corpus Christi Geological Society

#### Major Oil Company Experience

Sohio Petroleum Company subsequently acquired by British Petroleum. Worked as a petroleum geologist under both corporate cultures and regimes. (1977-1979)

#### Independent Oil Company Experience

Through his corporation, Thunder Exploration, Inc., Mr. Light has worked as an independent petroleum geologist with

*Walter Light continued on page 24*



### Joe Lynch

#### Education

University of Nottingham (UK).

BSc Geology 1976

University of Warwick (UK). MBA 1994

#### Professional Experience

2017-Present	Rock Flow Dynamics: Senior Advisor
2013-2017	Landmark: Director, Reservoir Management
2007-2013	SPT Group Inc: VP, Reservoir Optimization
2003-2007	Landmark: Product Manager
1996-2003	Roxar: Regional Manager, Americas
1984-1996	Development & Operations Geologist
1980-1984	Anadrill: Mud Logging

#### Professional Affiliations

HGS

AAPG

SPE

TBPG (#6262)

#### Professional Activities

2002-2006	HGS Vendor Corner Chair
2006-2013	HGS Finance Chair
2009 & 2010	HGS President's Award
2013-2014	HGS Treasurer Elect
2014-2015	HGS Treasurer
2016-2017	HGS Foundation Trustee
2017-2020	HGS Foundation Treasurer
2017-2020	HGS Foundation Chair
2019-present	SPE GCS Reservoir Study Group Treasurer

*Joe Lynch continued on page 24*





# Candidates for the 2021–2022 Executive Board *(continued)*

## Vice President (two candidates)



### Fang Lin

#### Education

BS, Geology, Chengdu University of Technology, 1991-1995  
MS, Ore Deposit Geology, Chengdu University of Technology, 1995-1998  
PhD, Geosciences, Virginia Tech University, 2000 – 2005

#### Professional Experience

2005- present Chevron Corporation, held many roles from individual contributor to project manager to team leader, currently Chapter Manager of Hydrocarbon Charge and Geochemistry  
2000-2005 Virginia Tech University, Graduate Assistant  
1998-2000 Chengdu University of Technology, Instructor

#### Professional Activities and Awards

2019-2020 Editor of the Houston Geological Society *Bulletin*  
2018-2019 Editor-Elect of the Houston Geological Society *Bulletin*  
2009-2014 Index Editor for HGS *Bulletin*  
2011-2012 Houston Geological Society Editor's Award  
Active member of AAPG, HGS and HOGS.  
Reviewer of AAPG *Bulletin*, *Marine and Petroleum Geology*, *Organic Geochemistry* etc.  
Judge of AAPG Student Poster Sessions, AAPG ACE/ICE abstracts and presentations.

#### Statement

It is a great honor to be nominated to run for Vice President of the Houston Geological Society (HGS). I am a geologist working in the upstream business of energy industry. I specialize in petroleum geochemistry and have worked as individual contributor, project manager and team leader to support oil and gas exploration and production in both onshore and offshore, domestic and international plays.

My involvement in HGS began when I attended a professional short course organized by HGS many years ago. Since then, I have become an active member of the HGS playing various roles from meeting attendees to Index Editor, Editor-Elect and Editor. Among them, my most recent role as the Editor of the HGS *Bulletin* and as a member of the Board of Directors, has particularly prepared me for a comprehensive understanding of who we are, what we do and how we operate as a professional organization. It would be my privilege to have the opportunity to serve our members again.

Fang Lin *continued on page 25*



### Patricia (Patty) Walker

- Originally from Tulsa, Oklahoma but have now lived in Houston, Texas for the last 34 years. Still an Okie at heart.
- Graduated from Oklahoma State University in 1984 with a BSc and in 1986 with an MSc degree in Geology from the Boone Pickens School of

Geology in the College of Arts & Sciences. Had the honor of being the commencement speaker at OSU for the CAS in May 2018.

- Started career in 1986 with ExxonMobil as a production geologist with responsibilities for field mapping, reservoir characterization, and infill drilling for several fields in the Texas Gulf Coast.
- Moved to Exploration in 1991 with assignments in Alaska and South America working regional scale to prospect scale opportunity generation.
- From 1997 to 2004, while balancing career and family, I worked part time as a geologic consultant focused on asset evaluations for independent oil companies and for ExxonMobil on regional projects in the Middle East, North Africa, Mexico, Russia and Australia.
- In 2004, returned to ExxonMobil on a full-time basis and worked multiple assignments in a diversity of geologic settings in both a technical contributor role and a management role.
- In 2013, was named to a Senior Principal Geoscientist role at ExxonMobil in the Upstream and in 2015 promoted to Chief Geoscientist. In this role I served as a technical expert and advisor to Senior Leadership on global ExxonMobil activities.
- I am married to another geoscientist and have two children – Amanda (28) and Nathan (24). Amanda is a meteorologist and working for a private weather company in Dover, NH. Nathan is currently attending graduate school at University of Houston after obtaining his BSc degree at University of Tulsa, where he was a student athlete (football).
- Active member in the AAPG and currently serving on the Houston House of Delegates, member of Houston Geologic Society, member of Executive Advisory board for the OSU Boones Pickens School of Geology, 2020 Distinguished Alumni OSU College of Arts & Sciences. ■



# Candidates for the 2021–2022 Executive Board *(continued)*

## Secretary (two candidates)



### Patrick Loureiro

#### Education

BS – Geosciences, University of Wisconsin-Madison, 2007-2011  
MS – Geology, University of Houston, 2012-2014  
PhD – Geology, University of Houston, 2014-2017

#### Professional Experience

2017– 2020 Geologist – Hess Corporation  
2013-2017 Research Assistant – CBTH Group at the University of Houston

#### Professional Affiliations and Activities

AAPG, HGS, AGU, SEPM, GSA, UHEASAA  
2021-Present President of University  
2018-2019 AAPG Student Expo Poster Session Judge  
2016 Student Representative – HGS Africa Conference organizing committee

#### Statement

Over the years, the Houston Geological Society has served a prominent role in both my development as a geoscientist and as a leader. It would be an honor to be able to serve as Secretary on the HGS exec board and help the organization continue its efforts to grow and improve the geoscientist community. ■



### Lucia Torrado

Lucia Torrado is a geoscientist with AGI Exploration. She received a BS in geology ('08) from the National University of Colombia, and a MS ('12) and PhD ('18) from the University of Houston. During her graduate studies, she worked with the Conjugate Basins, Tectonics

and Hydrocarbons consortium at the University of Houston in conjunction with Spectrum Geo Inc. (now TGS). She interned with Shell and Talisman Energy (now Repsol) where she worked on the Llanos basin and the Austin Chalk Formation in Texas, respectively. Her graduate research consisted on the integration of seismic interpretation, seismic attribute analysis, basin analysis, sequence stratigraphy and paleogeography to evaluate hydrocarbon prospectivity in the Llanos basin (onshore Colombia), the Nicaraguan Rise (Caribbean region), the deep-water Foz do Amazonas and the Amazon Cone in northern Brazil.

Her graduate work has been recognized as best poster presentation during the AAPG ACE including: "1st Place Poster Presentation" in 2017, "3rd Place Poster Presentation" in 2013, "Award of Excellence for Top 10 Poster" in 2014, and "Top 15 Poster Presentation" in 2016 and 2012. In 2017-2018, she was the secretary for the AAPG graduate chapter at the University of Houston which was awarded "Best Domestic Student Chapter" in May of 2018.

She has also worked for PGS in the Cayos Basin (western Caribbean Sea), and the Pacific margin of Colombia, for Hocol in Colombia and more recently, in the Mexican GOM and North Sea as a geoscience consultant for TGS.

Lucia has authored and co-authored five publications based on her graduate work. She is also reviewer for several geoscience publications, the Translations Committee Chair at SEG, and an Imperial Barrel Award industry advisor for AAPG. Lucia is a member of AAPG SEG, HGS, GHS and AWG. ■





# Candidates for the 2021–2022 Executive Board *(continued)*

## Treasurer-elect (two candidates)



### Neil Sullivan

Over a 50-year career in oil and gas geology (30 in the Gulf Coast), I have had the good fortune to be a member of the Houston Geological Society three times, most recently following a move back to Houston from Pittsburgh in 2013. It would be a pleasure and an honor to have the

opportunity to pay back to the Society some of the many benefits received from my nearly 25 years of cumulative membership.

My second-best preparation for this position is the years of supervision and management for organizations that entailed strict adherence to company budget plans. My best preparation is an inherent attention to detail and accuracy.

Dickinson College graduate with an MS from Tulane and post graduate studies at the University of South Carolina.

Also, a member of AAPG, SIPES, SEPM, GSA, LBOPG. ■



### Ryan E. Yarrington

#### Education

Houston Baptist University, Bachelor of Business Administration with double majors in Marketing and Business Administration 2005

#### Experience

2020-2021	Deep Cognition – Enterprise Account Executive/ Vice President of Sales specializing in AI software platform for both the DLS and other company products and platforms
2019-2020	Cleargistix – Enterprise Account Executive specializing in Cleargistix digital field ticketing platform
2018-2019	Oildex/Drilling Info – Enterprise Account Executive specializing in OSS (Oilfield Services Suite) Oildex Software
2014-2018	MultiClient Geophysical – Seismic Data Marketing Representative focusing on Global Offshore 2D and 3D Seismic Acquisition
2011-2014	Sigma/ESG/Global Geophysical Services – Business Development/Marketing for Onshore Microseismic Acquisition and Engineering services Data Processing, and Reservoir Characterization
2011	HSEQ – Safety Advisor specializing in Environmental laws and procedures

#### Professional Affiliations

Houston Geological Society  
Geophysical Society of Houston

#### Professional Activities and Awards

2014- Present	HGS International Explorationists Committee Treasurer
2016-2017	HGS Rising Star Award

#### Statement

I am very honored to once again be nominated for a position on the HGS Executive Board of Directors for the 2019-2020 year. The Houston Geological Society, with its vast history in the Houston area has been integral in providing continuing education opportunities within the Geoscience Industry as well as cultivating a strong sense of community both locally and across the globe.

Ryan E. Yarrington *continued on page 25*



# Candidates for the 2021–2022 Executive Board *(continued)*

## Director – Two-year term *Vote for two candidates*



### Lanette Marcha

I am fortunate to have 15 years of experience in the oil and gas industry, securing energy needs both locally and internationally working in major, mid-size, private, and national oil companies, as a tri-lingual native Houstonian geologist. I earned my MS in geology from

Rice University and recently integrated into Chevron working Equatorial Guinea – Cameroon both on development and near field exploration opportunities, including well delivery. My multi-faceted experience across more than 12 basins globally includes regional exploration (petroleum system framework analysis/play based exploration), prospect maturation, appraisal, field development planning, and operations in projects predominately involving extensional and salt-derived tectonic settings in both clastic and carbonate reservoir depositional environments, from onshore South Texas, Alaska, offshore deepwater GOM, Nigeria, Equatorial Guinea, Cameroon, and Oman.

As a member of HGS and AAPG, I have actively participated in activities both in the U.S.A. and Middle East, and thus, have had the privilege to work with, listen to the drivers of, and learn from geoscientists with varying cultural, religious, and socioeconomic backgrounds. I even have had the opportunities to present New Ventures on behalf of Shell at AAPG 2006, present the Budour NE-SE fields in South Oman at the annual AAPG Middle East Conference 2011, chaired and executed the first annual HGS Fall Family and Friends event 2019 here in Houston, volunteered to be a panel delegate representing both HGS and Noble Energy at the 2019 Exploring Energy Conference at University of Houston to encourage ~1300 high school students from local petroleum academies supported by IPAA/PESA and STEM-interested students from greater Houston area, as well as attend a myriad ACE conventions and HGS activities/conferences. While earning my MS, I was honored to receive the Marilyn Atwater Memorial AAPG Grant-in-Aid Award in 2003.

I am grateful to be nominated for and welcome the opportunity to serve on the Board of HGS. As an early mid-career geoscientist, I am enthusiastic about the future of HGS and AAPG organizations and hope to help uphold and adapt guiding principles to our changing times, support membership growth, as well as activities fostering development of current professionals, college students, and those aspiring to be geoscientists and/or work in the energy sector. ■



### Troy W. Meinen

#### Education

MS Geology, Baylor University, 1996  
BS Geology, Baylor University, 1993

#### Professional Affiliations and Registrations

Registered Professional Geologist in the States of Texas and Tennessee  
Certified Safety Professional (CSP-38937)  
American Society of Safety Professionals  
Houston Geological Society

#### Statement

I am honored to be invited to stand for election of one of the new Board Directors for HGS. My current positions as treasurer and now co-chair of the Environmental and Engineering committee in HGS have been most rewarding to me and I welcome the opportunity to further serve my fellow Members should I be elected.

We are living in exciting but challenging times when our collective expertise as Geologists is more valuable than ever. Who better than Geologists to help today's leaders understand the complex nature of energy, the carbon cycle, natural disasters, and the impact of each on our world. My hope is that organizations like HGS will bring wisdom and sound scientific reasoning to decision makers in the many public arenas where we serve.

I am a Technical Director and Global Health and Safety Advisor with Environmental Resources Management (ERM) in Houston. Over my 24-year career, I have served as an environmental and health and safety consultant servicing global oil and gas, chemical, manufacturing, and mining companies. I have utilized my geological expertise to assist global oil and gas companies to understand and address contaminated ground water, soil and sediment issues. My background includes managing investigation and remediation of upstream oil and gas sites and assisting with due diligence for large oil and gas acreage position transactions for major oil and gas clients, which includes assessment of water use and protection, property transaction support, environmental impact assessment, environmental permitting and management, and Stakeholder concerns. I currently utilize my field experience to support teams globally in improving health and safety performance primarily within Global oil and gas companies. ■





# Candidates for the 2021–2022 Executive Board *(continued)*

## Director – Two-year term *Vote for two candidates*



### Kenneth W. Mohn

#### Education

Bachelor of Science in Geology, Stephen F. Austin State University, 1983  
Master of Science in Geology, Stephen F. Austin State University, 1986

#### Professional Experience

2018-Present Mohn & Associates, LLC. Formed to develop new business opportunities in consulting, project development and oil and gas exploration. Developing projects and seismic surveys both Proprietary and Multi Client.

2013-2018 Geoex/MCG –MCG was purchased by Geoex in 2016. Started with MultiClient Geophysical (MCG), based out of Oslo Norway. Managing Director and Vice President Americas Started the group at MCG for the Americas. Developed surveys in Mexico and the Caribbean.

January 2013 to April 2013 CGGVeritas, Senior Marketing Representative. Worked for 3 Months in sales on the Louisiana Shelf existing 3-D library. CGG bought Fugro Group.

2002- 2012 Fugro Multi Client Services, Inc., a division of Fugro N.V. under the Seismic Services Group. Exploration Vice President, Started the Multi Client Group for the Americas in Houston. Group Manager of the Multi Client Group in Houston. We covered all Multi Client business for North, Central and South America. Responsible for all Multi Client Sales, Project Development, Project Management for the Americas. Reported to the Managing Director of Fugro Multi Client Services Worldwide.

1987-2002 TGS-NOPEC Geophysical Company ASA: Specializes in the global acquisition of non-exclusive seismic surveys. I worked at TGS from 1987 until 2002 in various positions:  
2000-2002 – Marketing Manager, Africa  
1995-2000 – Marketing Manager, Gulf of Mexico  
1989-1995 – Project Manager, International Division  
1987-1989 – Geologist and Marketing Representative

Kenneth W. Mohn *continued on page 25*



### Dianna Phu

#### Education

University of Houston, BSc (Geology & Geophysics), Cum Laude

#### Professional Experience

2011-Present Senior Geologist, Intecsea  
2008-2011 Project Manager / Senior Geologist, Geoscience Earth & Marine Services, Inc. (GEMS)  
2006-2008 Geologist, GEMS  
2000-2006 Associate Geologist/Geological IT Specialist, GEMS  
1999-2000 Geoscience Assistant, GEMS  
1997-1999 Thermochronology Laboratory Assistant, University of Houston – Dr. Peter Copeland

#### Professional Affiliations and Activities

Certified Petroleum Geologist (CPG), AAPG Division of Professional Affairs, No. 6147  
Licensed Professional Geoscientist (PG), Texas: Geology, License No. 4237  
Gulf Coast Association of Geological Societies (GCAGS)  
2019 Convention Website Manager  
2014-Present Social Media Chair  
2015 Convention Secretary & Website Manager  
Active Member of Houston Geological Society (HGS)  
2017-Present Communications Co-Chair  
2010-Present Social Media Chair\Co-Chair  
2006-Present Website Committee  
2006-Present Continuing Education Committee  
2007-2012 Geoscience Day Planning Committee  
2005-2007 NeoGeos Chair  
2014-2017 Offshore Technology Conference (OTC) Program Committee  
2017 Networking Committee Mentor  
2016 Networking Committee Chair  
2015 Networking Committee Vice-Chair  
2006-2014 OTC The Next Wave (TNW) Planning Committee  
2014 TNW Mentor  
2013 Chair  
2012 Chair-Elect  
2011 Social Media Sub-Committee Chair

Dianna Phu *continued on page 27*



# Candidates for the 2021–2022 Executive Board *(continued)*

## Editor-elect (one candidate)



### Ken Thies

Member of the HGS since 1978 for my 42+ year career in Oil and Gas. While I've had the good fortune to work many places around the world, my primary focus has been the U.S. Gulf Coast exploration. I have published a number of papers as senior author or co-author on stratigraphy,

salt tectonics and paleontology and edited publications on the Cretaceous Mollusks of Texas.

Currently consulting to several international companies on exploration joint ventures and actively working fossil digs in the Houston area for the Rancholabrean Mega-fauna of the Late Pleistocene.

I am one of the primary presenters for the HGS Bones in Schools Program.

Graduated Queens College CUNY with BA and MA in Geology and Paleontology. Member of AAPG DPA, CPG #5239. ■

*continued from page 18*

### Walter Light—Candidate for President-elect

numerous privately owned and publicly traded oil and gas companies, working mostly South Texas producing trends and counties. This has involved using a full spectrum of skills and aptitudes required to generate and assemble oil and gas projects, negotiate oil and gas leases, conduct landowner relations, plan several 3-D surveys and plan, evaluate and cause dozens of wells to be drilled during his career. Currently, Mr. Light is actively involved in several projects in the Eagle Ford Trend of South Texas. Through Thunder he has also actively purchased non-operated

working interest positions in South Texas drilling prospects with numerous operators.

### Relevant Employment/Affiliations

JWR Exploration, Inc. Houston (1979 -1981)

Incorporated as Thunder Exploration, Inc. 1981

C.J. Wofford, Operator Houston and El Campo Texas (worked as a consultant through Thunder)

Lightning Oil Company San Antonio (worked as a consultant through Thunder) ■

*continued from page 18*

### Joe Lynch—Candidate for President-elect

#### Statement

I am honored and delighted to have been nominated as a candidate for President-Elect of the Houston Geological Society. I joined the HGS shortly after arriving in Houston in 1999 and I have valued my membership ever since. For most of this time I have participated in a HGS committee or on the HGS Board. This has given me a broad understanding of how the HGS organization functions, and of the importance of the part played by all volunteers and by the office staff.

My work experience has been almost entirely in the oil & gas industry. I have benefited from a variety of jobs and from working in diverse teams. Prior to my transfer to Houston, I worked various

reservoirs in the North Sea and some interesting exploration and development prospects in Russia. Since arriving in Houston, I have worked in commercial, R&D, and technical roles.

In order to thrive, our HGS organization must adapt to broader changes in society. This is guiding some of the ideas I would like to implement if I become President-Elect. My objectives are:

- To make the HGS more relevant to the younger generation
- To widen the footprint of the HGS outside our core area of the oil & gas industry
- To develop further our educational mission
- To maximize the efficiency and effectiveness of the HGS

I will welcome your vote. ■





# Candidates for the 2021–2022 Executive Board *(continued)*

*continued continued from page 19*

## **Fang Lin—Candidate for Vice President**

If elected, I plan to focus on ensuring continued success of our technical program and business goals. I will strive to build a

program that meets the diverse and evolving needs of our members and society. I am confident, together with you, that I will fulfill the duty of HGS Vice President with enthusiasm, dedication, and excellent results. ■

*continued continued from page 19*

## **Ryan E. Yarrington—Candidate for Treasurer-elect**

After 7 years of membership and 7 years of volunteering for the HGS in the International Explorationists Group, I would love to expand my involvement in a Society that has made such a significant impact on my life professionally and personally. There are many things that I can bring to the table with a larger role in the HGS. Some of those attributes include flexibility, adaptability to new situations, integrity, networking skills, an ability to analyze situations objectively, quality communication, a willingness to work

with others, a positive disposition, and of course, my fantastic sense of humor! Between those characteristics and the guidance that I receive from other seasoned members of the Board I feel that I could be a strong member of the team. If I am elected Director, I would aim to channel my skills into supporting the various committees that I would oversee and to encourage them with their continued growth in the Society. As a part of the HGS Board as a whole, I look forward to the possibility of being involved in the ongoing success and expansion of the largest local Geoscience society in the country. I hope that I can count on your vote! ■

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## **Kenneth W. Mohn—Candidate for Director**

1982-1983 Strata Reserves Inc. – Field and Wellsite Geologist for stripper wells in East Texas

2011- 2015	Chairman of the Geophysical Society of Houston Sporting Clays Tournament
2009	Chairman of the International Association of Geophysical Contractors (IAGC) Sporting Clays Tournament.
2004-2015	AAPG HoD, Alternate
2001-2004	AAPG HoD, Delegate
2000-2001	Charity Selection Committee Member for the Children's Fund Charity.
2000-2001	Chairman of the Houston Geological Society Skeet Shoot Committee.

## **Professional Societies and Affiliations:**

Society of Exploration Geophysicists (SEG)  
American Association of Petroleum Geologists (AAPG)  
Houston Geological Society (HGS)  
Geophysical Society of Houston (GSH) Lifetime Member  
Texas Board of Professional Geoscientists Licensed Geology, License No. 6766

## **Awards**

Life Membership Award Geophysical Society of Houston 2016.  
Society of Exploration Geophysicists Recognition Award for co-Author: *The Santos Basin: Criteria for Mapping the Continental-Oceanic Boundary*; SEG 79th Annual Meeting, Houston, Texas; October 29, 2009.  
Africa "Big 5 Award" presented to Kenneth Mohn of TGS-NOPEC Geophysical Company – for African Service & Supply Company of Year 2001; Global Industry Awards 2001. <http://www.petro21.com/awards/> ■

## **Activities**

2021	AAPG House of Delegates Committee, Delegate
2021	AAPG HoD Membership Committee, Committee Member
2019 and 2020	Judge in the AAPG Imperial Barrell Award Student Contest
2018-2019	2nd Vice President of the Geophysical Society of Houston
2016-2020	AAPG HoD, Alternate
2015-2016	AAPG HoD, Delegate

## Houston Science Fair 2021 – HGS Winners

## Senior Division – Ved Ganesh, Dulles High School

## Stable Shores: An Experimental Set-Up to Test Economical Alternatives to Continental Coastal Erosion Control



Project ID: 01000234  
Ved Ganesh, Dulles High School, Sugar Land, TX, U.S.

RESEARCH QUESTION		RESULTS	
<b>Problem</b>	Coastal erosion is responsible for the loss of \$500M in property and 80,000 acres of land across the U.S. annually. Conventional structures (groins and seawalls) are costly and ineffective.	<b>Storm Surge</b> (% increase in water levels compared to current conditions)	<b>Avg. Erosion Rates</b> (% a percentage of current erosion rates, values identified)
<b>Goal</b>	This project compares the cost-effectiveness of existing methods of coastal defense to novel structures.	<b>Structure</b>	<b>Cost</b>
<b>Scope</b>	Perform an experiment to test effectiveness of structures. Develop a mathematical model for storm surge. Conduct a cost analysis of structures. Forecast implementation of structures on Texas Coast. Derive insights from the project to establish guidelines for future structures.	<b>Bernoulli</b>	\$ 50M/mile
		<b>Breakwater</b>	\$152M/mile
		<b>Seawall</b>	\$170M/mile
		<b>Net</b>	\$ 11M/mile
		<b>Plants</b>	\$ 6M/mile
			67%
			72%
			72%
			87%
			89%

**METHOD : PHYSICAL EXPERIMENT**

Structures Tested:  
• Novel: Bernoulli, Net  
• Conventional: Seawall, Breakwater, Dutch  
• Wetland Restoration Plant  
• The Physical Experiment:  
• Gravel and/or structures  
• Wave Action: Plastic be kept below water, spun to produce circular ripples, simulating longshore currents  
• Effectiveness revealed by the movement of the board in each tube  
• Two setting gradient: models environment's impact on structure performance  
• Measurement Device: excel & tube design records a cross-section of erosion rates

**CONCLUSIONS**

The Bernoulli was the most cost-effective structure tested, proving that **novel structures need to be further explored** because there are better ways to go about using our resources.

Comparing Future Texas Coast Year 2100

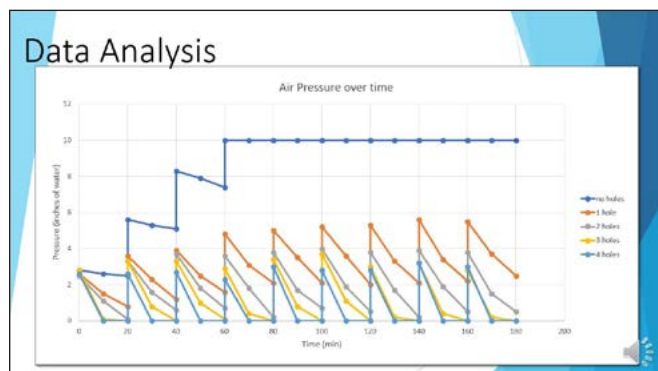
**CONCLUSIONS**

The Bernoulli was the most cost-effective structure tested, proving that **novel structures need to be further explored** because there are better ways to go about using our resources.

**The Golden Standard:**  
1. The structure must resist the wave at all levels.  
2. The structure must resist the vertical oscillations of the wave.

## Junior Division – Andy Hibbetts, Seabrook Intermediate School

## Small Scale Tidal Energy



# Data

		Air Pressure Readings																				
depth (in)	time (min)	0 Holes				1 Hole				2 Holes				3 Holes				4 Holes				
		trial 1	trial 2	avg.	std	trial 1	trial 2	avg.	std	trial 1	trial 2	avg.	std	trial 1	trial 2	avg.	std	trial 1	trial 2	avg.	std	
3	0	2.8	2.8	2.8	0.0	2.8	2.6	2.7	2.5	2.8	2.8	2.8	2.6	2.6	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10	2.6	2.5	2.6	1.2	1.8	1.5	0.8	1.4	1.1	0.9	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	20	2.6	2.4	2.5	0.6	1.9	0.8	0.9	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	30	5.2	5.6	5.6	1.5	3.6	1.6	1.5	2.8	3.8	3.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.5
	40	5	5.2	5.1	1.0	1.4	1.2	0.9	1.2	0.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0	8.2	8.4	8.3	4.0	3.8	3.9	3.0	4.4	3.7	2.8	3.8	3.3	2.4	3.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0
	10	7.8	8	7.9	2.8	2.2	2.5	1.2	2.4	1.8	0.2	1.8	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	20	6.2	7.8	7.4	2.0	1.2	1.6	0.9	1.4	0.7	0.9	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	30	10	10	10	3.2	3.0	3.1	1.2	2.4	1.8	0.2	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	40	10	10	10	1.8	2.4	2.1	0.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0	10	10	10	4.8	4.4	4.6	3.2	4.0	3.6	3.0	2.8	2.9	2	2.4	3	0.0	0.0	0.0	0.0	0.0	0.0
	10	10	10	10	2.0	1.8	1.9	1.2	2.4	1.8	0.2	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	20	10	10	10	1.8	2.4	2.1	0.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	30	10	10	10	5.2	4.8	5	3.4	4.2	3.8	3.2	3.6	3.4	3.2	2.8	3	0.0	0.0	0.0	0.0	0.0	0.0
	40	10	10	10	2.2	2.0	2.1	0.9	1.4	0.7	0.9	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0	10	10	10	5.4	5.0	5.2	3.8	4.2	4	3.6	3.8	3.7	2.6	3.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0
	10	10	10	3.6	3.6	3.6	2.8	1.8	1.9	1.8	1.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	20	10	10	10	2.0	2.0	2	1.9	0.9	0.5	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	30	10	10	10	5.4	5.2	5.3	1.2	4.4	3.8	3.2	2.8	3	3.2	2.4	2.8	0.0	0.0	0.0	0.0	0.0	0.0
	40	10	10	10	1.0	1.6	1.3	1.2	2.2	1.7	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0	10	10	10	1.8	2.4	2.1	0.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10	10	10	5.8	5.4	5.6	4.0	3.8	3.9	3.2	3.2	3.2	3.0	3.4	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	20	10	10	10	3.4	3.4	3.4	2.0	1.8	1.9	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	30	10	10	10	2.2	2.2	2.2	1.9	0.9	0.5	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	40	10	10	10	6.2	5.8	6.5	4.9	3.4	3.8	3.4	3.2	2.8	3.2	2.8	3	0.0	0.0	0.0	0.0	0.0	0.0
21	0	10	10	10	1.0	4.4	3.7	2.0	1.0	1.5	0.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10	10	10	1.8	2.4	2.1	0.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	20	10	10	10	5.8	5.4	5.6	4.0	3.8	3.9	3.2	3.2	3.2	3.0	3.4	3.2	0.0	0.0	0.0	0.0	0.0	0.0
	30	10	10	10	3.4	3.4	3.4	2.0	1.8	1.9	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	40	10	10	10	2.2	2.2	2.2	1.9	0.9	0.5	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0	10	10	10	6.2	5.8	6.5	4.9	3.4	3.8	3.4	3.2	2.8	3.2	2.8	3	0.0	0.0	0.0	0.0	0.0	0.0
	10	10	10	1.0	4.4	3.7	2.0	1.0	1.5	0.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	20	10	10	10	1.8	2.4	2.1	0.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	30	10	10	10	5.8	5.4	5.6	4.0	3.8	3.9	3.2	3.2	3.2	3.0	3.4	3.2	0.0	0.0	0.0	0.0	0.0	0.0
	40	10	10	10	3.4	3.4	3.4	2.0	1.8	1.9	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0	10	10	10	2.2	2.2	2.2	1.9	0.9	0.5	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10	10	10	6.2	5.8	6.5	4.9	3.4	3.8	3.4	3.2	2.8	3.2	2.8	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	20	10	10	10	1.0	4.4	3.7	2.0	1.0	1.5	0.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	30	10	10	10	1.8	2.4	2.1	0.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	40	10	10	10	2.0	3.0	2.5	1.9	0.9	0.5	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Many thanks to our HGS volunteer judges: Jim Tucker, Dorene West, Dwaine Abraham, David Miller, David Risch, Mike Erpenbeck, Martin Cassidy, and Michael Barnes.





# Candidates for the 2021–2022 Executive Board *(continued)*

continued from page 23

## Dianna Phu—Candidate for Director

American Association of Petroleum Geologists (AAPG)  
 AAPG Division of Professional Affairs (DPA)  
 2015-2016 Gulf Coast Section Councilor  
 2013-2015 Gulf Coast Section Councilor Alternate  
 2013-2016 DPA Website/Social Media Chair  
 SEG, AGU, GSH, SEPM, GSA, UHGAA, SUT, MIMarEST  
 SUT-US Offshore Site Investigations & Geotechnics (OSIG)  
 Committee, Full Member  
 University of Houston Earth & Atmospheric Sciences Alumni  
 Association (UHEASAA)  
 2020-2022 Communications Director  
 2000-Present Member

## Awards and Recognition

2016 Gulf Coast Association of Geological Societies  
 (GCAGS) Special Commendation Award  
 2014 Houston Geological Society (HGS) Distinguished  
 Service Award  
 2011 HGS President's Award  
 2007 HGS Rising Star Award

2000-2001 BP-Amoco Academic Scholarship  
 2000-2001 University of Houston Geoscience Alumni  
 Association (UHGAA) Academic Scholarship  
 2000 UHGAA Field Camp Scholarship  
 1999-2000 Outstanding Junior Award  
 1998-1999 Phillips Petroleum Scholarship  
 1998-1999 UHGAA Dalton Null Memorial Scholarship  
 1999 HGS Undergraduate Scholarship

## Statement

The Houston Geological Society is an important cornerstone for the geo-professionals in the Houston area and a critical hub of knowledge-sharing for our global profession. I have enjoyed every opportunity to serve the Society and participate in the broad range of learning, networking, and outreach events that are coordinated by this amazing group of volunteers. My year as Secretary, though challenged by the economic downturn and pandemic restrictions, has shed light on the many ways the HGS has yet to grow and explore. It would be my honor to serve the Society as Director for the 2021-2023 season and I look forward to an engaging period of continued growth and development for all of us in the HGS. ■



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# South Texas Geological Society Seminar & Field Trip

## OVERVIEW OF THE AUSTIN CHALK IN SOUTH TEXAS AND LOUISIANA: Depositional Setting, Diagenesis, Porosity Evolution, and Play Development

### Seminar Lecturer: Jeffrey Dravis

The Upper Cretaceous Austin Chalk trend in south Texas and Louisiana continues its resurgence in interest. Areas like Karnes Trough in south Texas, and central Louisiana, remain the areas of interest right now, but many companies also are exploiting established field areas like Pearsall and Giddings, and expanding into East Texas. Geoscientists who explore in the Austin Chalk, or hope to exploit existing Chalk field trends, should possess a firm understanding of the Austin Chalk's regional depositional and diagenetic framework. This includes appreciating the influence of regional and local paleogeography, preexisting topography, and underlying structural framework. Developing an appreciation of the various diagenetic pathways that affected Austin Chalk porosity and permeability evolution is critical as well, since fractures are only a part of the story.

### Field Trip Leaders: Tom Ewing, John Cooper, David Ferrill

Tom Ewing will show and discuss depositional details of Austin Chalk Group outcrops in the San Antonio area pointing out their implications on hydrocarbons exploration. John Cooper will explore the stratigraphy of the Austin Chalk Group in Bexar County from lower to upper contact and integrate geophysical logs to make ties to the subsurface. David Ferrill will discuss faulting and fractures seen in fault zones exposed in the San Antonio area. David's discussion will focus on understanding typical normal fault patterns and using these patterns as an aid in predicting the fracture zone width when planning oil and gas exploration.

*NOTE: The field trip will be moderately strenuous, especially in the event of rain*

#### Friday, November 5<sup>th</sup>, 2021

Coffee & pastries at Petroleum Club (7<sup>th</sup> Floor, 8620 N. New Braunfels, SA TX)..... 8 AM  
Buffet Lunch..... Noon  
Conclusion and *happy hour*..... 5 PM

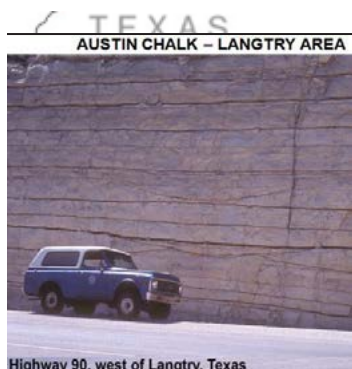
#### Saturday, November 6<sup>th</sup>, 2021

Personal car caravan departs Petroleum Club parking lot ..... 8 AM  
Box lunch ..... Noon  
Return to Petroleum Club by..... 5 PM

**\$380 per person (1<sup>st</sup> 5 students \$190)**

**(seminar only: \$320—field trip only: \$100)**

for reservations and payment instructions email: [johnlonggeologist@gmail.com](mailto:johnlonggeologist@gmail.com)

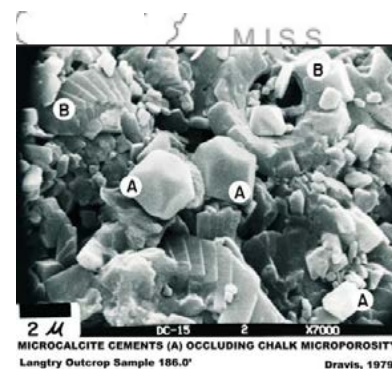


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To present your prospect for consideration, please email a summary and/or any associated confidentiality documents to our exploration team:

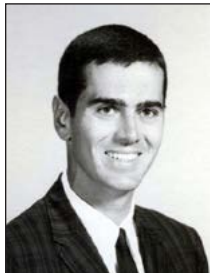
[geology@millenniumpetrocapital.com](mailto:geology@millenniumpetrocapital.com)





# Remembrance

**ARNOLD POWELL MILTON**  
 NOVEMBER 11, 1938 – APRIL 9, 2021



**ARNOLD POWELL MILTON**, a true renaissance man of great integrity and dignity passed away peacefully at home on April 9, 2021 with his loving wife by his side. Although born in New York City on November 11, 1938, while his father was attending graduate school, Arnold staked his claim as a proud fourth generation Texan, not born, but bred.

His educational journey began in Tyler, Texas and Panama, while his father was in the Navy, before moving to Houston where he attended Lamar High School through his junior year where he enjoyed playing trumpet in the band. He graduated from Longview High School before attending The Colorado School of Mines where he achieved a degree in Geological Engineering and completed his ROTC. He chose The University of Texas, Austin, where he earned a Master of Arts and met the love of his life, Jennie and continued his active membership in Sigma Alpha Epsilon. Before embarking on his career he fulfilled his ROTC obligation by serving in Korea for 13 months where he obtained his black belt in Karate.

Arnold began his career as a petroleum geologist in Corpus Christi, Texas before moving to Houston where he continued his career path until moving abroad for assignments in Tripoli, Libya, and Sumatra, Indonesia. Arnold's move abroad with his family enhanced their lives. A true highlight of a life well-lived.

His professional associations included: American Association of Petroleum Geology, Society of Exploration Geophysicists, Association of International Petroleum Negotiators and Houston Geological Society (Member since 8/1995).

Known to his beloved grandchildren as Papa, he was a devoted husband, father, father-in-law, grandfather and friend. The family were long time members of St. Francis Episcopal Church and then Palmer Episcopal Church. He loved being known as a rancher, pilot, Harley rider, adventurer, designer and builder of model planes. This passion for flying led to his building of his own RV-4 experimental aircraft for personal use. Whether flying for fried shrimp or burgers, he loved meeting people and making friends with this shared interest.

He is survived by his wife Virginia Phillips Milton, his daughter and two grandchildren.

*Summarized from Life Tributes, Houston Chronicle April 25, 2021.*

# HGS SHRIMP PEEL & CRAWFISH BOIL

FRIDAY, MAY 21, 2021

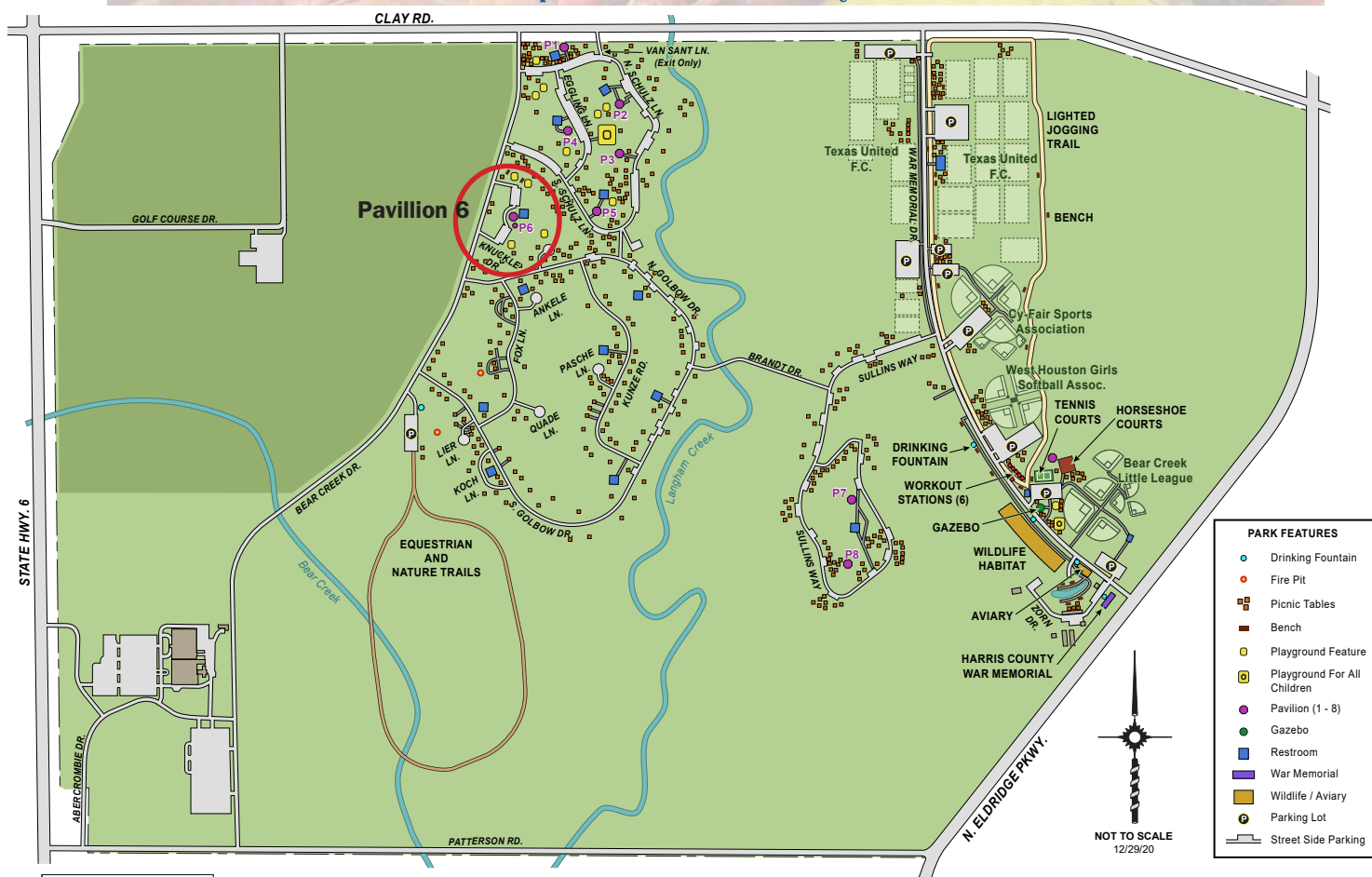
12:00PM - 6:00PM

BEAR CREEK PIONEERS PARK, PAVILION 6  
3535 WAR MEMORIAL ST. HOUSTON, TX 77084

*Pavilion #6 is located off Bear Creek Dr.*

**BOILED SHRIMP  
CAJUN CRAWFISH  
CORN & POTATOES  
BEER & BEVERAGES  
DJ MUSIC**

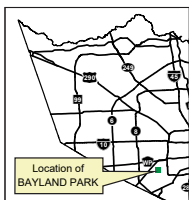
Member and guest reunion & celebration at our first in-person event in over a year!



PARK FEATURES	
	Drinking Fountain
	Fire Pit
	Picnic Tables
	Bench
	Playground Feature
	Playground For All Children
	Pavilion (1 - 8)
	Gazebo
	Restroom
	War Memorial
	Wildlife / Aviary
	Parking Lot
	Street Side Parking



NOT TO SCALE  
12/29/20



INSET MAP -  
West Harris County  
NOT TO SCALE

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Tom S. Ramsey, P.E.,  
Commissioner

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### HGS Bulletin Instructions to Authors

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

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

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

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

### HGS Bulletin Advertising

The *Bulletin* is printed digitally using InDesign. Call the HGS office for availability of ad space and for digital guidelines and necessary forms or email ads@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.**

Random Inside Ad Placement					Specific Page Color Ad Placement					
Black & White Prices Shown – Color add 30% to prices below										
No. of Issues	Random Eighth Page	Random Quarter Page	Random Half Page	Random Full Page	Inside Front Cover Full Page	Inside Back Cover Full Page	Page 2 Full Page	Outside Back Cover Half Page	Back of Calendar Full Page	Calendar Quarter Page
10	\$950	\$1,350	\$2,550	\$4,750	\$8,000	\$7,500	\$7,050	\$6,850	\$6,650	\$3,000
9	\$800	\$1,300	\$2,500	\$4,700						
8	\$750	\$1,250	\$2,250	\$4,300						
7	\$600	\$1,100	\$2,200	\$3,850						
6	\$550	\$950	\$1,800	\$3,500						\$2,000
5	\$500	\$800	\$1,600	\$3,000	\$4,700	\$4,500	\$4,350	\$4,000		
4	\$450	\$650	\$1,300	\$2,500						
3	\$300	\$550	\$950	\$2,000						\$1,000
2	\$250	\$400	\$700	\$1,500						
1	\$150	\$250	\$450	\$1,000	\$1,500	\$1,400	\$1,250	\$1,000	\$1,250	\$850

Professional Directory Section Business Card Ad: 10 Issues – \$160 (\$30 for each additional name on same card)

### Website Advertising Opportunities

There are currently 5 opportunities to help spread the word about your business or event and generate traffic to your website or campaign. Please submit all ad materials five (5) days prior to the go-live date for testing.

Placement	Rate	Specifications/Description
HGS Website Home Page Banner Ad	\$800 – Monthly	275 x 875 pixels; home page top banner ad. All Home Page Banner Ads rotate every 10 seconds.
	\$1800 – 3 Months	
	\$2800 – 6 Months	
	\$3600 – 12 Months	
HGS Website Home Page Column Ad	\$700 – Monthly	200 x 400 pixels; home page right column ad
	\$1500 – 3 Months	
	\$2400 – 6 Months	
	\$3600 – 12 Months	
HGS Website Event Page Ad	\$600 – Monthly	200 x 400 pixels; calendar page left column ad. All Event Page Ads rotate every 10 seconds.
	\$1200 – 3 Months	
	\$1600 – 6 Months	
	\$2600 – 12 Months	
Geo-Jobs	\$50 – 14 days	Posting of job opportunities on HGS website. Click the Geo-Jobs tab to get started. Must be filled out completed and the dates set appropriately.
	\$100 – 30 days	
	\$300 – 3 Months	
	\$600 – 6 Months	
Vendor Corner	\$1200 – 12 Months	
	\$250	Company logo, company website, and company description will be highlighted on HGS Calendar website event. This is an opportunity to display company wares, gain personnel exposure and hand out product information at HGS dinner meetings.
	*4 Pack option with 1 FREE bonus event for \$1000.00 available. Send request to vendorcorner@hgs.org.	
Event/Short Course Calendar Ad	\$100 – Monthly	An event ad posted within the HGS website calendar under the Events tab.
Bundle & Save!	<ul style="list-style-type: none"> <li>• 30% off website ads when combined with print ads in all 10 HGS <i>Bulletin</i> issues.</li> <li>• 20% off website ads when combined with print ads in 5 HGS <i>Bulletin</i> issues.</li> <li>• 10% off website ads when combined with print ads in 3 <i>Bulletin</i> issues.</li> </ul>	





# Application to Become a Member of the Houston Geological Society

## Qualifications for Active Membership

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

## Qualifications for Associate Membership (including students)

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

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

**Annual Dues Expire Each June 30. (Late renewals – \$5 re-instatement fee)**  
**Annual dues are \$30.00; emeritus members pay \$15.00; students are free.**

Mail this application and payment to:

**Houston Geological Society**

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

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

Payment method:

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

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

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

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

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

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

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

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

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

Circle Preferred Mailing Address: Home Office

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

☐ AAPG member No.: \_\_\_\_\_

Professional Interest: \_\_\_\_\_

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

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

Membership Chairman \_\_\_\_\_


HGS Secretary \_\_\_\_\_

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## HGS Welcomes New Members

### New Members Effective April 2021

#### ACTIVE MEMBERS

Sarah Barnes

Ronald Cormick

Kristi Darby

Kevin Donihoo

Michael Durcanin

Ashley Harris

Scott Hyde

Sabina Kraushaar

Marybeth Lundquist

Philip Papadeas

Courtney Rubin

Aaron Summerfield

Caroline Wachtman

#### ASSOCIATE MEMBER

Neal Cameron

#### STUDENT MEMBER

Tiffany Nordstrom

*Welcome New Members*



# HOUSTON GEOLOGICAL SOCIETY

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