



HGS Bulletin

Volume 63, Number 8

Houston Geological Society

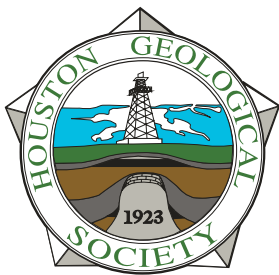
April 2021

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Houston Geological Society

Volume 63, Number 8

April 2021

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Houston Geological Society

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

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

Subscriptions: Subscription to a digital version of this publication is included in the membership dues (\$30.00 annually). The subscription price for non-members is \$160.00. The printed Bulletin for 10 issues for HGS members is \$150.00 or \$15.00 per issue while supplies last. Periodicals postage paid in Houston, Texas.

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

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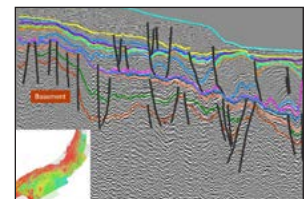
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About the Cover: Pictures from a recent trip through Caprock Canyon State Park, clockwise from top left; the Permian section, local flora, Permian Satin Spar Gypsum and grazing bison. Photos supplied by HGS member Tricia Rittaler.



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.

Register online at www.hgs.org



Jim Tucker
president@hgs.org

Wet and Dry

It is refreshing to see so much green, and even some other colors, as the area recovers from the February freezes. Even a couple of weeks ago, there was mostly brown plants and wilted cacti, but now there are signs of the potential shade we will need in August. Your society will also be refreshing this month, with new Board elections beginning on 10 April, and information on the candidates is at: <https://www.hgs.org/meet-2021-2022-hgs-board-candidates>. These committed volunteers will steer the HGS over the coming year, and there are many more volunteers on our many committees contributing their time.

It is also time to recognize the many volunteers who keep all the disparate activities of the Houston Geological Society going. It is no surprise that the largest local geological society has so many programs for the profession and the public, and the Board cannot know all the contributors to these efforts and ensure they are recognized. Information on past awardees is at: <https://www.hgs.org/awards-list>, and the qualifications for the awards is at: <https://www.hgs.org/houston-geological-society-awards-criteria>. Please send nominations for the Board's consideration to the HGS Office.

We recently observed World Water Day, and my morning weather report pointed out that this area is currently drier than normal, but not in the severe drought currently in the Rio Grande Valley and parts of West Texas. A news report last week discussed the drawdown in northern Louisiana's groundwater. I recently received an email discussing an investment fund focused on the Colorado River in the western U.S. The fund believes that the already-oversubscribed river system will be in even greater demand in the future, and ideas to address this demand will be worthwhile

investments. Around here, we often think about water when we have too much of it at a time, and only rarely when we have too little, as during the 2011 drought or the recent interruption of residential water service during the February freeze. A large part of the local economy depends on the Ship Channel, an enlargement of the Buffalo Bayou drainage as it enters Galveston Bay. There are numerous watersheds draining into our bayou and creek system, and let's hope our legislators know the watersheds in their districts (my guess is they do not).

*It is also time to recognize
the many volunteers who
keep all the disparate
activities of the Houston
Geological Society going...*

*Please send nominations for
the Board's consideration to
the HGS Office.*

At our recent University of Houston Sheriff Lecture event, several student poster presentations discussed subsidence mapped by the students in the northern and western parts of Harris County and areas nearby. This continues work done by UH students in recent years – I have enjoyed their posters and discussions with the students. Fifty years ago in the Houston area, ground subsidence was observed related to groundwater withdrawal. Some of us can remember trips to the Baytown area east of the Ship Channel, where petroleum withdrawal had caused local subsidence. This subsidence was on the order of the almost thirty feet of subsidence in the Long Beach, California area from

petroleum produced from the Wilmington Oil Field. Much of the Long Beach subsidence was recovered by water injection, but the geology in our area does not allow very much recovery of the ground elevation level, once the subsurface clays have compacted.

So, our geology surrounds us, even if we do not often think of it. ■

Stay safe, and volunteer for something this month.



AFRICA

E&P CONFERENCE

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.

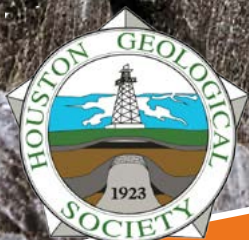
Alongside submissions on the latest activities in exploration, lessons learnt from past exploration activities, field development, reservoir management and enabling technologies; we also seek abstract submissions on geothermal activity, carbon storage and related subjects.

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
Abstract submission deadline: Friday 14 May 2021

Registration now open! Visit africa.pesgb.org.uk to book your early bird ticket.

For more information please contact: events@pesgb.org.uk



#AFRICA2021

africa.pesgb.org.uk



Ceri Davies
editor@hgs.org

See You Very Soon

Hello, Houston Geological Society Members – We are more than excited to announce our first in person event in over a year is on the calendar – I hope to see you at the Annual Shrimp Peel & Crawfish Boil on Friday May 21st at Bear Creek Park.

Monday March 16th 2020. We'd just returned from a Spring Break camping trip in Galveston and with an innocent ignorance had lunch with colleagues when we got the word it was time to head home. I duly watered my office plants and made my way onto the Beltway. How long will we be out – two weeks, maybe a month at the most, very latest by July 4th we'd be back in the office. A colleague working for a company downtown was astutely advised to plan on working from home for the remainder of 2020.

It's now been 12 months since I've gone into the office and by now I imagine my potted plants will be of more interest to my palynologist friends!

When talking with colleagues across Houston, there is definitely a trend of optimism, with most already vaccinated to some degree and the majority of the others have a vaccination date on the calendar. While offices at large remain mostly closed, the general feedback I'm hearing is a return to some form of hybrid working remotely/in office scenario being rolled out later in the summer.

For the oil price, aside from a nautical mishap, the price continues to steadily improve and I think the industry is far more confident of a stable \$60+ price. Exploration is gaining momentum once more and it's refreshing to hear the Staatsolie Suriname Shallow Licensing Round discussed late last year (please see December issue of the *Bulletin*) has attracted more than 30 interested companies. ■

Keep well, see you soon,
Ceri



2019 Annual Shrimp Peel & Crawfish Boil



2019 Annual Shrimp Peel & Crawfish Boil

EAGE

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ASSOCIATION OF
GEOSCIENTISTS &
ENGINEERS



THIRD EAGE/HGS CONFERENCE ON LATIN AMERICA

leading the global future supply growth

SESSION OVERVIEW

OCTOBER 2021 • HOUSTON, UNITED STATES & ONLINE

www.eage.org

Welcome to the Third EAGE/HGS Conference on Latin America



Latin America – An Exploration Overview

Chairs: Bob Fryklund (IHS) and Daniel Minisini (Shell)

The Atlantic conjugate margin agglutinates 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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join us on social media!

SPE-GCS SPRING 2021 HIRING EVENT




April 7, 2021 (TBC)
<https://www.spegcs.org/hiring-event/>



 @spehiringevent

 @spe-gcs hiring event

 @SPEHiringEvent

A virtual event for Energy Professionals in partnership with Texas Workforce Solutions



IN COLLABORATION WITH THE HGS-AAPG-SIPES

Energy Professionals FREE Virtual Hiring Event

Event, candidates must:

- . Be an active member of either SPE or any of the collaborating professional organizations
- . Have previous full-time position in support of an energy and/or upstream discipline

Monday, April 5, 2021

Virtual Meeting via Zoom

6:00 – 7:00 p.m.

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

<https://www.hgs.org/civicrm/event/info?id=2259>

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

Event contact: Bryan Guzman – 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

Raymond Franssen
Synergeo LLC

HGS General Virtual Dinner Meeting

The Energy Transition is Here: What to do?

The number of entities (countries, corporations, financial institutions) committing to carbon neutrality by mid-century increases rapidly. If all commitments are kept the Paris climate agreement goals are within reach by end century. To manage climate change and stay below 2°C increase by 2050 the world will need to decarbonize, Green House Gas (GHG) emissions will decline, and demand for fossil fuels will decrease significantly. Carbon Capture and Storage (CCS) is an essential part of realizing those commitments. This topic is hotly debated, contentious, and requires the industry's immediate attention.

The resultant energy transition imposes fundamental changes and unparalleled short-term and long-range challenges to the oil and gas industry. Concerns about stranding assets and financial risks abound. The presentation briefly introduces the current energy system and possible energy pathways. These are essential to understand the complexity and magnitude of the changes and challenges ahead.

Essentially there are three long-term choices in the oil and gas sector: i) to Dig In Your Heels; ii) “Maximize the Old and Go for the New”, and iii) Go Green and Go Fast. Which path to choose is key and will inform the subsequent business strategy, capital allocation, portfolio decisions, talent search strategies, etc.

Suggestions for immediate actions to prepare for the energy transition include consideration of lifecycle GHG emissions throughout the oil supply chain (as described by the Oil-Climate Index) when making portfolio and new business choices, standard emissions reporting (Scope 1, 2 and 3), and immediate methane emissions and flaring reductions. Employees in the industry can start learning skills that are of use in the new energy system and support a successful career transition. Think of e.g. PV Solar, offshore wind, and H₂ in refining.

Finally, we will look at the role of Carbon Capture and Storage (CCS) in the energy transition. The essential nature of what Carbon Capture & Storage must achieve is to dispose of billions of tons every year of an unwanted by-product of economic activity, carbon dioxide. Early identification of applications that can afford the premium CCS commands is key for the technology to establish at scale until new and cheaper pathways for carbon capture and sequestration become available

Developing CCS as a viable net zero carbon emission technology may well represent the single most significant opportunity for the oil and gas industry to apply its vast resources and skills to the energy transition. ■



Biographical Sketch

DR. RAYMOND C. FRANSSSEN, owner Synergeo LLC, joined the upstream oil and gas industry 31 years ago as a geologist. He has worked in Europe, Gulf of Mexico, Middle East, North Africa and SE Asia for Shell and its JVs. A successful global explorer with multiple commercial oil and gas discoveries in multiple basins and wide

perspective on energy issues. Leadership roles include developing and implementing a global transformational change project for Shell global exploration. He earned a BSc from Leiden University, MSc and PhD from Utrecht University, the Netherlands.

In May 2020 Raymond he founded Synergeo LLC, a small forward-looking energy business consultancy supporting the oil and gas industry to navigate the energy transition.

LinkedIn: <https://www.linkedin.com/in/raymondfranssen/>

GSH Annual Golf Tournament 2021

The Woodlands Country Club Tournament Course has been chosen to host this year's Geophysical Society of Houston's Annual Tournament. Winding through the village of Grogan's Mill, the overall design of the Tournament Course promotes the feeling of tranquility, with well-integrated ponds, lakes, natural trees, and pristine landscaping. The Tournament Course serves as host to The Insuperity Invitational which will be taking place 2 weeks after our event ensuring that the golf course will be in pristine shape.



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Please register online at
www.gshtx.org

Space is limited to 120 players

Sponsorships are still available

For more information contact Wesley Tyrrell:

{e} wes@tyrrelldataservices.com {c} 713.205.3546

Wednesday, April 14, 2021

HGS Environmental & Engineering Virtual Meeting

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=2251>

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

Event contact: Matthew Cowan – 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.****

*Kirsten Siebach
Rice University*

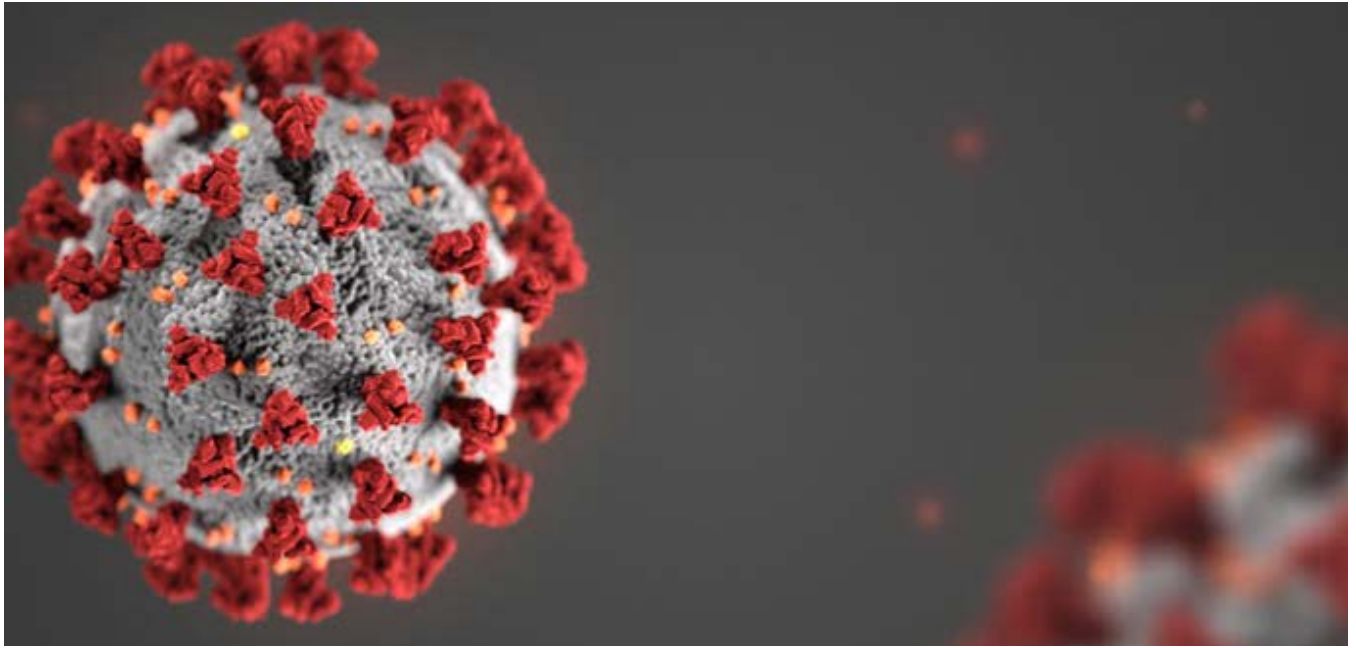
Roving Mars with Curiosity and Perseverance



In a stunning engineering feat, Perseverance, the largest and most complex Mars rover yet, landed successfully on Mars on the floor of Jezero crater on February 18, 2021. Its mission is ambitious: seek signs of ancient life and collect samples for future return to Earth. Perseverance's goals and landing site were selected largely due to the successes and key findings of the Curiosity rover, which is still roving 2,300 miles away. Together, these missions

have and continue to revolutionize our view of the Red Planet, and the eventual samples just might revolutionize our view of life itself. As a geologist on both mission teams, I'll share the motivation and context for these missions, our new and evolving understanding of our neighboring planet, and how it teaches us about our own world. ■

Environmental & Engineering *continued on page 15*



Coronavirus (COVID-19) Policy Statement: Updated Monday, April 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://www.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

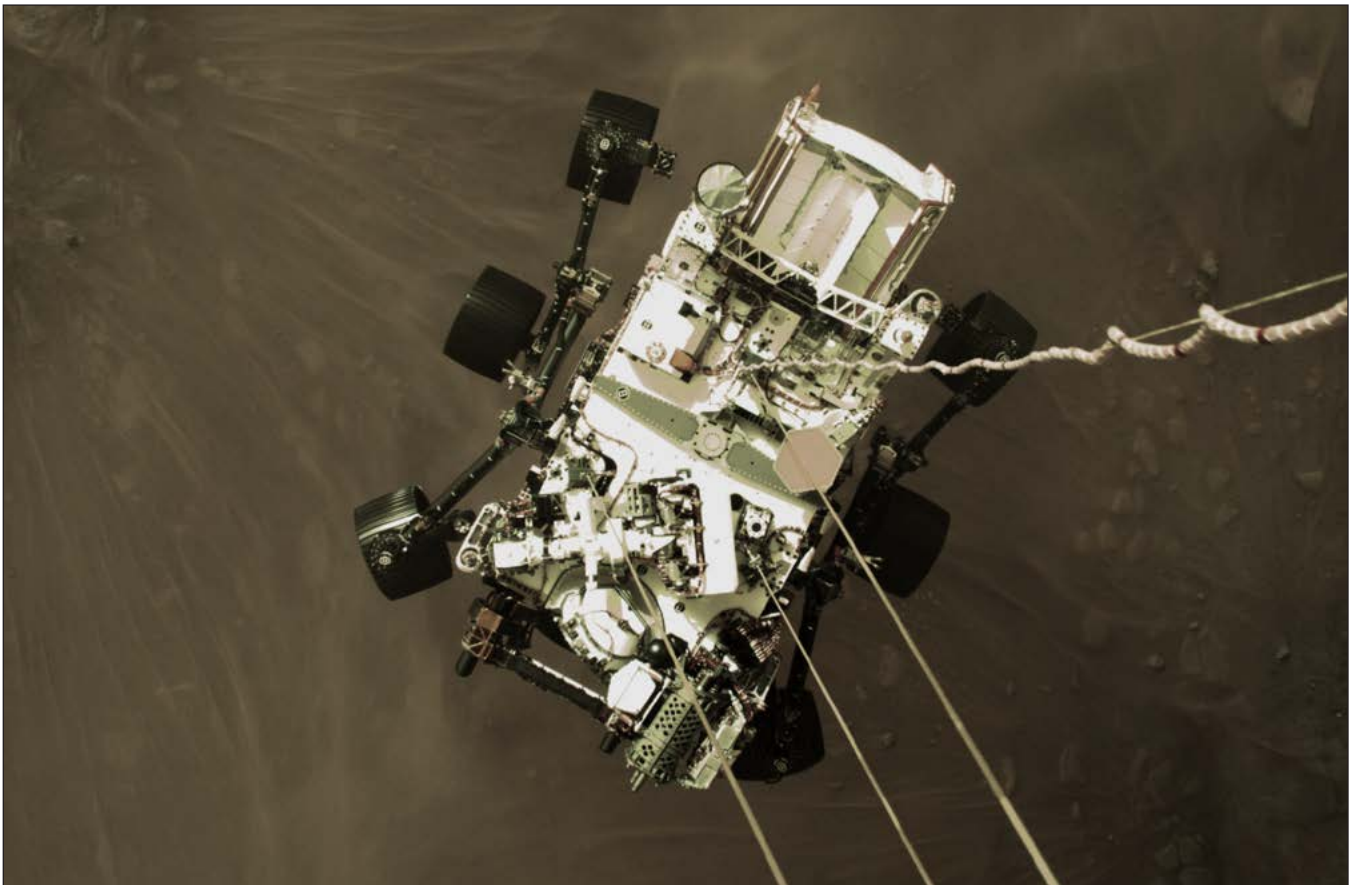
Biographical Sketch



KIRSTEN SIEBACH is an Assistant Professor in the Rice University Department of Earth, Environmental, and Planetary Sciences and calls herself a Martian Geologist. She studies the early landscapes and climate on Mars using rover observations of rock compositions and comparisons to analogous terrains here on Earth. She is currently a member of the Science and

Operations Teams for the Mars 2020 rover Perseverance and the

Mars Science Laboratory rover Curiosity, and previously worked on the science and engineering teams for the Phoenix Lander and the two Mars Exploration Rovers. Kirsten graduated with a BA in Earth and Environmental Science and Chemistry from Washington University in St. Louis, completed her PhD in Geology at Caltech, and did postdoctoral work at Stony Brook University prior to beginning her faculty position at Rice. She is actively engaged in promoting education and outreach related to Earth and Planetary science and loves travel and photography (on Earth as well as Mars).



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2021 GSH-SEG ONLINE SPRING SYMPOSIUM

DATA SCIENCE AND GEOPHYSICS: HOW MACHINE LEARNING AND AI WILL CHANGE OUR INDUSTRY

April 27th-28th 2021

JOIN US FOR AN EXCITING AND INTERACTIVE SYMPOSIUM ON HOW DATA SCIENCE WILL DRIVE THE FUTURE OF GEOPHYSICS.

SPEAKERS INCLUDE:

Aria Abubakar | *Schlumberger*, Satinder Chopra | *SamiGeo*, Jon Downton | *CGG*, Yuting Duan | *Shell*, Hugo Garcia | *Geoteric*, Wenyi Hu | *AGT & U of H*, Elive Menyoli | *Emerson*, Tom Smith | *Geophysical Insights*

THIS TWO DAY EVENT WILL ALSO FEATURE:

- The SEG Regional Student Challenge Bowl live event
- A special presentation of the Geophysics In The Cloud Machine Learning Competition results!

WWW.GSHTX.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.****

Cian O'Reilly
TGS

Following the Pre-Salt Play to its Outermost Extent in the Campos and Santos Basins, Brazil – An Analog for Gulf of Mexico Presalt?

This presentation reviews the major elements of the Brazilian pre-salt play in the Campos and Santos Basin: source, reservoir, trap and seal and how the evolution of these elements through the different depositional and structural domains can be seen on well and seismic (2D and 3D) data. We will then look at well and seismic data onshore and offshore Mexico to see if these same successful play elements can be seen in the Mexican Gulf of Mexico and answer the question: is there a pre-salt play in Mexico?

A major problem with considering the existence and viability of pre-salt play(s) in Mexico was the lack of a proven pre-salt source rock. Stabler and Gonzalez (2020) have demonstrated the existence of such a Middle Jurassic lacustrine source rock in the Huehuetepec-3 well onshore Tampico-Misantla province. The other major elements (reservoir, trap, seal) for a pre-salt play can be shown to exist at a variety of depths throughout the Mexican Gulf of Mexico. We show seismic examples of possible such plays and conclude that the best location for testing such a play is in the shallow water Campeche Salt Basin. ■

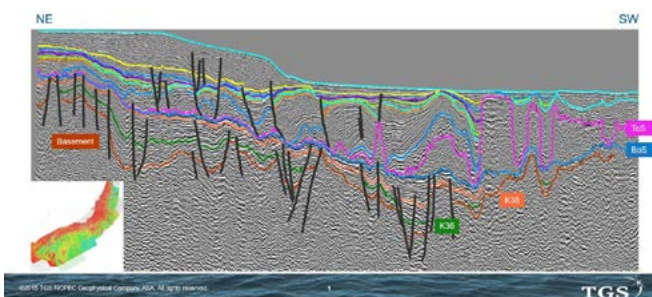
Biographical Sketch



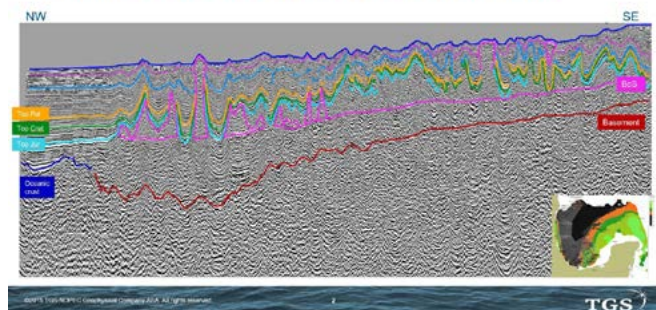
CIAN O'REILLY is a Senior geoscientist at TGS with over 18 years of experience in international oil and gas exploration, onshore and offshore. His main areas of interest are in the North Sea, Middle East, Pakistan, India, the South Atlantic salt basins, the Gulf of Mexico and onshore USA.

He obtained a BSc from the University College at Dublin, Ireland and a PhD from the National University of Ireland. He is currently employed at TGS as a Senior Geoscientist in their Houston office. He has also worked for Navan Resources (mining) and Fugro (Oil & Gas consultancy). Responsibilities in his current position include seismic interpretation, survey planning, and communication. He is a member of AAPG and HGS.

Regional pre-salt geology (Campos Basin, Brazil)



Regional pre-salt geology (Salina del Istmo Basin, Mexico)

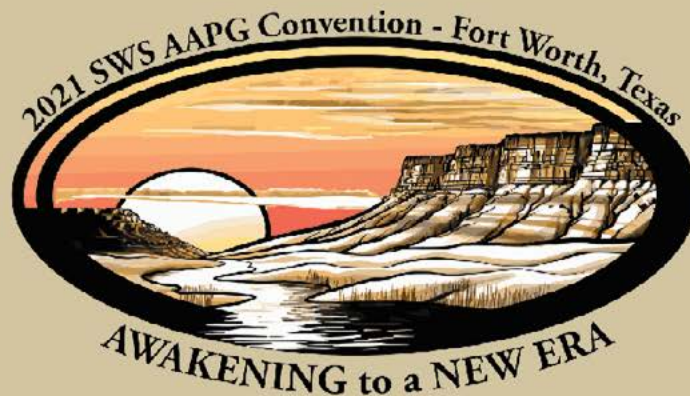


SW Section AAPG Annual Convention CALL FOR ABSTRACTS

June 29-30, 2021

The Technical Program Committee invites you to submit abstracts for oral or poster presentations at the annual convention of the Southwest Section of AAPG. There will be two special sessions: (1) the Permian super-basin and (2) the Eastern Shelf and Fort Worth Basin, but the committee encourages presentations on all topics related to the geology of Texas, New Mexico, and nearby areas. Students are encouraged to present at the convention.

Submission Deadline: April 2, 2021



Schedule

6/26: Teacher Workshop
6/27: Field trip
6/28: Short Course
6/29: Talks, Posters, All Convention Luncheon, Social Event
6/30: Talks, Posters, Ethics Luncheon

Hurst Convention Center
Hurst, Texas

www.swsaapg.org

Abstract Submittal

Email your abstract (2,000 characters or less) in a Word document to technical committee chair Richard Denne at this address:

r.denne@tcu.edu

Please list all authors and their affiliations, and indicate if you prefer an oral or poster presentation. For oral presentations indicate the presenting author. Submission deadline is April 2nd.

Wednesday, April 28, 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=2264>

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

Event contact: Bryan Guzman – 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

Andy Wood
CeraPHi

HGS General Virtual Lunch Meeting

Geothermal and the Energy Transition

Andy will talk to us about his background and transition from O&G to Geothermal Energy and provide a summary of the benefits of Geothermal Energy, specifically detailing some of the unique solutions CeraPhi Energy provides. ■

Biographical Sketch

ANDY WOOD has a BSc (Hons) in Earth Science from Qeen Mary College (University of London) and 30 years Upstream Oil & Gas experience, specifically in Subsurface, Drilling & Wells.

From a Mudlogging, Wellsite Geology & Operations Geology beginning Andy developed skills in operational optimisation and cost saving, before combining his passions for O&G and Environmentalism to transition to Geothermal Energy.

Andy is now Subsurface Manager at CeraPHi Energy Limited, a U.K. Geothermal Development Company, with a mission to save the planet 1 Megawatt at a time.

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Seen on the Street



Seen on the **Street**



	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.		
4	5 HGS General Dinner Virtual Zoom Meeting <i>"The Energy Transition is Here: What to Do?"</i> Raymond Franssen Page 11	6 HGS Board Meeting 6 p.m.	7
11	12 GSH Golf Tournament <i>The Woodlands Country Club Tournament Course</i> Page 12	13	14 HGS Environmental and Engineering Dinner Virtual Zoom Meeting <i>"Roving Mars with Curiosity and Perseverance",</i> Kirsten Siebach Page 13
18	19	20	21
25	26 HGS International Dinner Virtual Zoom Meeting <i>"Following the Pre-Salt Play to its Outermost Extent in the Campos and Santos Basins, Brazil - An Analog for Gulf of Mexico Presalt?",</i> Cian O'Reilly, Page 17	27 GSH-SEG Online Spring Symposium <i>Data Science and Geophysics: How Machine Learning and AI Will Change our Industry</i> Page 16	28 HGS General Lunch Virtual Zoom Meeting <i>"Geothermal and the Energy Transition,"</i> Andy Wood Page 19

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



1	2 Don't wait, make your reservations online at hgs.org	3
8	9	10
15	16	17
22	23	24
29	30 Virtual Pre-registered Prices: Virtual Meetings members \$10/15 Emeritus/Honorary members..... \$10/15 Student members \$5 Nonmembers \$30/35	

- April 7, 2021**
SPE-GCS Spring Hiring Event
Page 10
- April 12, 2021**
GSH Annual Golf Tournament
Page 12
- May 14, 2021**
Call for Abstracts
PESGB/HGS Virtual Africa E&P
Conference
Page 4
- May 14, 2021**
South Texas Geological Society
Seminar & Field Trip
Page 32
- 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
- October 15, 2021**
South Texas Geological Society
Field Trip
Page 34

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HGS.ORG**



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 28



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 28



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 29*



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. ■



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 2021-2022 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 29*



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 29*



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 31*



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 22

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 22

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 23

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 25

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! ■

continued from page 27

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

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

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/> ■

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Jackson	Austin Chalk	Pearsall
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Olmos	Georgetown	Smackover

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Contact **Walter S. Light Jr.**
President/Geologist

713.823.8288
EMAIL: wthunderx@aol.com



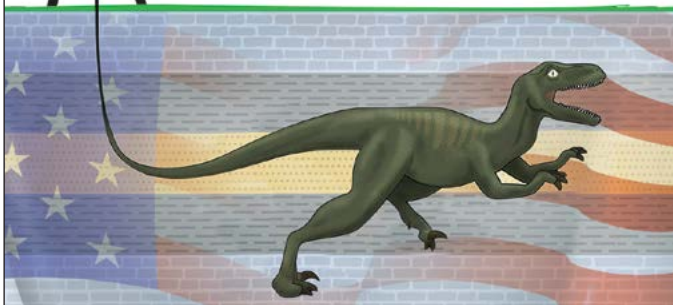
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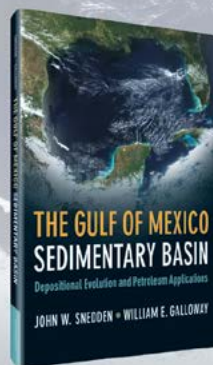
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Candidates for the 2021–2022 Executive Board *(continued)*

continued from page 27

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

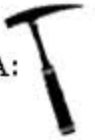
2000-2001 BP-Amoco Academic Scholarship
 2000-2001 University of Houston Geoscience Alumni
 Association (UHGAA) Academic Scholarship
 2000 UHGAA Field Camp Scholarship
 1999-2000 Outstanding Junior Award
 1998-1999 Phillips Petroleum Scholarship
 1998-1999 UHGAA Dalton Null Memorial Scholarship
 1999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



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.

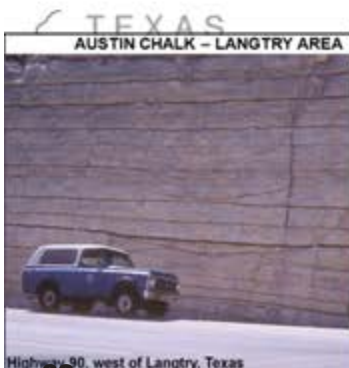
NOTE: The field trip will be moderately strenuous, especially in the event of rain

Friday, May 14th, 2021	
Coffee & pastries at Petroleum Club (7 th Floor, 8620 N. New Braunfels, SA TX).....	8 AM
Buffet Lunch.....	Noon
Conclusion and <i>happy hour</i>	5 PM
Saturday, May 15th, 2021	
Passenger bus departs Petroleum Club parking lot	8 AM
Box lunch	Noon
Return to Petroleum Club by.....	5 PM

\$380 per person

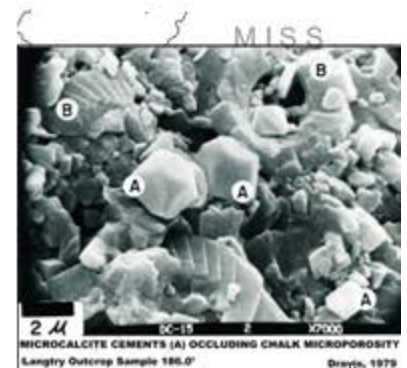
(seminar only: \$320—field trip only: \$100)

for reservations and payment instructions email: johnlonggeologist@gmail.com



SEEKING DEALS

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



Remembrance

JOHN "JACK" FROST
1924-2021



Jack was born in Winchester Mass., May 20, 1924 to Elliott and Hazel Frost.

Jack proudly served in the Army Air Corp during WWII as a navigator in the Pacific Theater.

Jack received his BS(1949), MS(1950) and PhD(1965) in geology from Stanford University. He was employed by Exxon to open mineral exploration worldwide. Jack joined the Houston Geological Society on 4/1990.

Jack was a member of Memorial Drive United Methodist Church. He will be remembered for his professional contributions to the field of mineral exploration, his sense of humor and his beautiful voice.

He is survived by his wife, Ann, sons, John (Kitty) and Jeff (Lynn); daughters Teresa Frost, Ginny Owen (Jim) and grandchildren Eric Frost, Kristi Frost Janosek, Jeffrey Frost, Carley Koivisto and Hope Redhawk . Jack was predeceased by his wife, Carolyn Carley Frost, and daughter Elizabeth Frost. A Celebration of Life is planned for late May. Memorial donations may be made to Gracegate Ministries, 4027 Young St., Pasadena, Texas 77504

Summarized from Life Tributes, Houston Chronicle March 7, 2021.



STGS Spring Field Trip - Friday, October 15th, 2021
“Geology, Frontier History, and Oenology of the Texas Hill Country”



Trip Leader: Pete Rose

Pete will discuss how geology shaped the white man’s settlement of the Texas Hill Country beginning with their slim pickings from farming and ranching, their grim encounters with Indian raiding parties and stage coach robbing desperados, to eventual law and order forged by the justice of Texas Rangers. Pete will show that geology creates and controls the extent of the true Hill Country terroir; that is, where actually nurturing vines in Texas soil, to harvest locally raised grapes that yield sustainable and desirable wine, is possible and thriving.

Schedule

40 passenger bus departs Petroleum Club parking lot (8620 N NewBraunfel SA TX)..	8 AM
wine tasting at <i>Sister Creek Vineyards</i>	9 AM
wine tasting at <i>Becker Vineyards</i>	10:30 AM
box lunch by <i>My Own Chef</i> at LBJ Park, Stonewall, Texas.....	High Noon
wine tasting at <i>Perissos Vineyard and Winery</i>	2:30PM
return to Petroleum Club	6 PM

COST: \$125 per person (students \$100 thanks to Millennium PetroCapital Corporation for reservations and payment information email johnlonggeologist@gmail.com)

The collage features several elements: a photograph of Pete Rose in a cowboy hat; a map of Texas with a red star and dashed line indicating the location of the field trip; a close-up of a bunch of purple grapes; a photograph of a road winding through a rocky, hilly landscape; and a row of four portraits of men wearing colorful bandanas. A large red diagonal banner with white text reads "rescheduled to October 15th, 2021".



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	
	\$1200 – 12 Months	
Vendor Corner	\$250 *4 Pack option with 1 FREE bonus event for \$1000.00 available. Send request to vendorcorner@hgs.org.	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.
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"> • 30% off website ads when combined with print ads in all 10 HGS <i>Bulletin</i> issues. • 20% off website ads when combined with print ads in 5 HGS <i>Bulletin</i> issues. • 10% off website ads when combined with print ads in 3 <i>Bulletin</i> issues. 	



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 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:

Check, VISA, MasterCard, American Express, Discover
 Card # _____

Expiration Date: _____ Card I.D. _____
 (Card I.D. - 3 or 4 digit number on front or back of card)

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

Name: _____
 Address: _____

Home Phone: _____ Spouse's Name: _____

Email: _____

Job Title: _____

Company: _____

Company Address: _____

Work Phone: _____ Fax Number: _____

Circle Preferred Mailing Address: Home Office

Professional Affiliations: _____

AAPG member No.: _____

Professional Interest:

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

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

Membership Chairman _____

HGS Secretary _____

School _____
 Degree _____ Major _____ Year _____

School _____
 Degree _____ Major _____ Year _____

Earth Science Work Experience _____

Applicant's Signature _____ Date _____

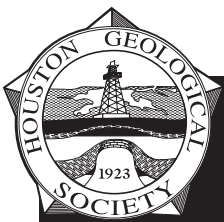
Endorsement by HGS member (not required if active AAPG member)

Name: _____

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