

BULLETIN

HOUSTON GEOLOGICAL SOCIETY

ELECTION ISSUE



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Photo provided by Lawrence Walker.*

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October 17, 2022 at Sterling Country Club

26-28 September 2022
Houston, TX & Online

The 21st HGS-PESGB Africa Conference

CALL FOR PAPERS

"The Future of G&G in Africa's E&P: Skills, Transition, & Resources"



PES  **GB**

Submit Abstracts to:
africa2022@hgs.org

Abstract Deadline: June 15, 2022



The HGS/PESGB Africa Conference has built a reputation for hosting high-quality technical talks focused on the geology of the African continent and conjugate margin. In 2022, the conference will focus on how Africa transitions over the next decade. Alongside submissions on petroleum exploration, development, and reservoir management, we also seek submissions on subsurface technologies, skills and the projects supporting Energy Transition in Africa, such as geothermal, carbon storage and rare earth element exploration.

The HGS Africa Technical Committee invites you to submit an abstract for the program. Your research could be featured on the agenda, giving you a platform to reach 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 students and international contributors.

MIKE ERPENBECK



I was out and about on a Saturday several months ago on a mission to check out some interesting things to do with my six year old grandson, something beyond the usual kids' "manufactured fun" play centers that pepper the Woodlands area. Some minor research let me to a model railroading club north of Conroe, one that opened the

facilities to the public, by appointment only. After a couple hours giving me a tour of the impressive layout, their president suggested I might consider becoming a member. Part of the benefits I would reap was that in being one of a small member group and with the surprisingly high appraised value of the facilities, my member share of the assets would be in the \$40,000 range (all for a \$100 initiation fee). Naturally we both had a chuckle at that, knowing the asset was completely non-liquid and thus the "ownership" was nominal only.

This interchange caused me to think a little more deeply about what membership in a non-profit "corporation" really entailed. I had the occasion to review some HGS financial documents recently and came across the Statements of Financial Position from our audit firm. The summary line Total Liabilities and Net Assets indicated the value of our assets at nearly \$900 thousand. Using a not-very-useful exercise similar to the model railroad club's above that would mean each of the HGS members "own" \$450 in assets.

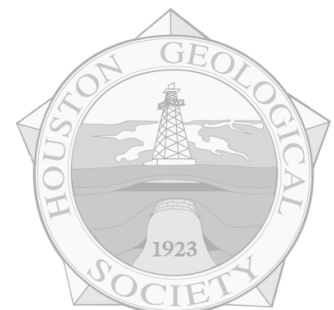
Except we are not owners. In legal terms' a nonprofit corporation has no owners (shareholders) whatsoever. Nonprofit corporations do not declare shares of stock when established. A nonprofit corporation is formed to carry out a non-commercial purpose, whether that be religious, educational, charitable, scientific or other qualifying purpose. It is prohibited from acting in a manner that results in private inurement (profit) to any individual.

Now that these fun facts have been established (or reiterated), what is the asset-equivalent that HGS members have. Some, perhaps most view their membership only as a type of asset, a kind of notation that can be used on one's resume to establish credibility as a professional geologist. To be honest this is how many of us first used this HGS asset: to jump-start our early careers. Nothing wrong with using a little resume-padding at some time in our career.

But as many of us instinctively knew early on, or learned it later in our careers, the real "asset" we owned in HGS had nothing to do with owning "stuff" but rather in the opportunities it provided. Ken Nemeth our departed colleague, the consummate volunteer in geological organizations and governance activities, stated it succinctly that geologists in Houston should make HGS part of their career development plan. This is the opportunity HGS offers you that your employer may not, or may not yet have offered to you. In your career your formalized training or narrow range of skills you use may not have given you a chance to demonstrate your ability to organize a plan on your own. Or to teach or motivate others, or share your passion for geology in a way that benefits others. Or, in general, the drive and ability to get things done. These opportunities are the assets you can "own" by fully engaging with HGS.

In my month by month observations as president I continue to see and get acquainted with volunteers and leaders who have taken advantage of these opportunities. Recently I attended a **Trivia night** offered in early April by the Student Expo Planning Committee. It was a pleasant evening for this largely outdoor event at the Houston Cider Company. We thank **Amanda Johnston, Katie Fry, and Andrew Stearns**, who organized this successful event, especially in creating the slew of questions, geologically-related, that made the contest so enjoyable and intensely competitive. Many of the attendees commented on how great it is to get out into the in-person realm again.

In April **Janet Combes**, with the Educational Outreach Committee had their booth at and supported the Reach for the Stars Festival for middle school girls at Rice University. See Janet's article later in this Bulletin.



FROM THE PRESIDENT ...continued

MIKE ERPENBECK

Last Friday the **HGS Shrimp Peel & Crawfish Boil** was held in Bear Creek Park. This event keeps getting better every year. The returns are coming in at this time, but there were at least 200 attendees, lots of sponsors (photo), and lots of shrimp and crawfish. The high striker was onsite again and the strongman winner was Mike Salazar who again out-muscled several contestants with much more bulk. Mike is also the Chair of this committee (just sayin'), and he and his volunteer crew put on quite an event. And speaking of heavy lifting we thank **Andi Peoples** who with her staff colleague **Alyssa Cushing**, were prime movers. The list of volunteers are too many to list, but we will try anyway, with the photo showing **Kevin Nguyen, Michael Salazar, Andi Peoples, Ryan Jasper, Derrick Whiting, and Patrick Jordan**; others not in range of the camera were **Beau Langla, Justin Vandenbrink, Igor Faoro, Shannelle Ecrette, Howard Wood, Bradi Cruz, and Paul Riegler**. Out in the sun and over the hot boiling pots were **Keith Peoples** and his father **Stephen Peoples**. A hearty thanks to you all.



Volunteer with HGS



Annual Events

Every year the HGS has annual social events, and we need volunteers to help us organize and set up on the day of!

These include events such as:

- Golf Tournament
- Shrimp Peel & Crawfish Boil
- Skeet Shoot
- Tennis Tournament
- Field Trips



Committees

HGS committees such as Educational Outreach and Continuing Education provide geoscience learning resources to students and the local geoscience community. These groups are always looking for volunteers! If you or someone you know is interested in lending a hand, please contact the HGS Office!

Interested in Volunteering?

The HGS is always looking for energetic members to become volunteers for the society! As the largest local geological society in the country, we depend on the support of our members to help us organize and execute our many activities. Committees such as Educational Outreach, Continuing Education, and our annual social event committees are always looking for extra helping hands! Contact the HGS Office at office@hgs.org to learn more!

FROM THE EDITOR

SCOTT SECHRIST



My congratulations to the AAPG for taking a public stand in FAVOR OF Petroleum Geology in the April 2022 EXPLORER.

Don Burdick is President of the AAPG Division of Professional Affairs (DPA); the Ethics and Mentoring Division. His column in the APRIL 2022 AAPH Bulletin

entitled: 'Petroleum Geology – Yes, Petroleum' is a clear statement of the incredibly empowering benefits to Humankind that have been provided by Petroleum Geology. See Don's article, at this link:

<https://explorer.aapg.org/story/articleid/62843>

The exceptional value of the energy density of hydrocarbons can be validated by viewing any of the impressive movies and presentations made by Dr. Scott Tinker, State of Texas Geologist from the UT Austin Bureau of Economic Geology, including: 'Switch', 'Switch On' and 'Energy Makes our World'.

Dr. Tinker's impressive communication efforts profoundly demonstrate the value and merits of Hydrocarbons to the world, often highlighting the plight of the Third World to to achieve the energy freedom enjoyed in the USA and Developed countries worldwide.

As our aforementioned speakers (and a huge host of fully-informed scientists worldwide) have accurately observed, The United States and Western Europe have some of the World's best Environmental, Safety and Governance improvement over the last half century, in cleaning up their hydrocarbon industries, compared to the other major world producers, such as Russia, China and the majority of the Middle Eastern Nations.

Internationally, prices remain high, around \$100 for oil and astonishing at \$7+ domestically for natural gas. Putin's war in Ukraine continues, as the United States and NATO do everything within reason to assist the Ukrainian people and government resist a brutal dictator's onslaught.

The resulting worldwide change in dynamics of supply chains for basic necessities from Energy and Food, to Manufactured Goods have been radically altered in every country around the world. It is abundantly clear we are not returning to the open, international trading world of the pre-Covid era anytime soon.

Decarbonization and electrification have been legislated, but are at economic odds with a long-lived vehicle fleet and the immense requirements of new electrical generating and charging infrastructure requiring multiple trillions of dollars and decades of investment necessary to achieve the desired completion of those transitions. That doesn't even touch the scope of rebuilding more than a century's worth of legacy electrical infrastructure; particularly in the Midwest and East Coast.

The damage caused by the political constraint of underinvestment in hydrocarbon projects is seen in \$5 gasoline prices, nearly 8% annual inflation, Natural gas prices tripled, and worldwide LNG prices skyrocketing. The resulting worldwide surge in demand cannot be filled overnight by low energy density alternatives.

The demand for oil and natural gas remains strong and immediate in this world of structural shortage, despite the concerns of Wall Street and environmentalists worldwide of a two-to-six foot sea level rise by the year 2100.

In summary, every form of energy must be developed to their maximum potential, as technology and funding allow. That will likely be humanity's most successful path through the Energy Transition.

HGS in May 2022

As HGS Members and Volunteers begin May 2022, the [HGS Annual Elections](#) are underway, with online-only voting through each HGS member's own HGS website account. Voting has been underway since April 10, 2022 and will continue through May 10th 2022.

Candidates for the 2022-2023 Houston Geological Society Officer Election can be found on the HGS website and the HGS Bulletin. Be sure to vote before the deadline!

Although most of the HGS' technical presentations for the 2021-2022 are winding down in preparation for graduations and the start of summer vacations, the HGS still will maintain core services. While there will be fewer technical presentations from May thru August, the quieter summer months will be punctuated with some excellent learning opportunities.

[The SWS-AAPG Annual AAPG Southwest section Conference](#) will be held in Midland, Texas from May 2, 2022 - May 4, 2022. Theme of the event is: Combining Scales of Geology to the Reservoir.

Returning the focus back home to Houston, the [HGS Continuing Education Committee](#) will present two courses on Well Log interpretation. They will be presented in two separate one-day courses: Well Logs: Basics on May 6, 2022 and Well Logs: Beyond Basics on June 10, 2022. Each course has its individual registration, CEUs, and cost. Followed by session 2; HGS Well Log Courses - Well Logs: Beyond Basics on 10 June. Be sure to register for both, and enhance your log interpretation skills!

[HGS Virtual General Meeting](#) - A Simplified Guide to - Case Studies and Examples

Monday, May 9, 2022 Virtual Event 6:00pm - 7:00pm

Speaker: Dr. Vitor Abreu of ACT Geosciences

Dr. Abreu's presentation proposes a back-to-basics approach, emphasizing key observations that can be made from any geologic data: lithofacies, lithofacies association, vertical stacking, stratal geometries, and stratal terminations., and initial depositional profile.

FROM THE EDITOR...continued

SCOTT SECHRIST



HGS Virtual E&E Potential for REEs and Other Critical Minerals in Large Evaporitic Bodies: Examples from North American Phanerozoic Salt Bodies

Wednesday, May 11, 2022 Virtual Event 7:00pm - 9:00pm

HGS Virtual General Lunch- Reality Check: Life Cycle of Geophysical Data Utilized in the Exploration and Development of Deepwater Stratigraphic Traps
Monday, May 25, 2022 Virtual Event 12:00pm - 1:00pm
Speaker: Joseph Reilly recently retired as ExxonMobil Chief Research Geoscientist.

Geoscientists have been successfully exploring for, and developing, stratigraphic traps for decades. Deepwater clastic "play opening" examples within the greater Atlantic region and their varying seismic expression and rock physics responses of these clastic reservoirs will be discussed.

We truly appreciate and thank ALL our HGS Members, Volunteers and HGS educational outreach teams! Congratulations to NASA Geologist and Hometown GeoHero Elizabeth Watkins on her arrival at the International Space Station! On the the Moon with Artemis, and onto Mars! Wishing Everyone the best of health and continuing success in 2022!

HGS Editor 2021-2022
Scott C. Sechrist
Editor@ HGS.org



Last Call for HGS Executive Board Votes!

Last chance to vote for the 2022-2023 HGS Executive Board!

Eligible HGS Members are able to vote online via the HGS website. You must be logged into your account to cast your vote. Eligible HGS Members include Active, Emeritus, and Honorary Life Members.

The voting period ends on Tuesday, May 10th!





Save the Date!



May 2 – 4, 2022

Southwest Section AAPG Annual Convention

Midland, Texas

RESOLOGY



**"COMBINING SCALES OF GEOLOGY
TO THE RESERVOIR"**

[CLICK HERE TO REGISTER!](https://pheedloop.com/AAPGSWS2022/site/home/)

OR VISIT

<https://pheedloop.com/AAPGSWS2022/site/home/>

The Permian Basin – Open for Business!

Reach for the Stars! STEM Festival for Middle School Girls at Rice University

BY JANET COMBES, MUSEUM OF NATURAL SCIENCE COMMITTEE



These photos show the NASA speaker Nicola Fox talking to all 200 students at Rice U's Reach for the Stars festival for middle school girls on Saturday April 9, 2022. The enrollment at this event was at capacity.

The table below shows the different activities for the different groups. The blue text highlights the physical science groups and shows the career panel that HGS Director Barbara Hill participated in. The HGS K12 exhibit booth had visitors during all the sessions, with more during the physical science time.

"REACH FOR THE STARS 2022" Schedule/Location (8 groups of 25)

	SPACE AND ASTRONOMY		PHYSICAL SCIENCE & MATH		MEDICINE AND BIOSCIENCE		ENGINEERING AND ROBOTICS	
TIME/ GROUP	ORANGE 1	ORANGE 2	BLUE 1	BLUE 2	RED 1	RED 2	GREEN 1	GREEN 2
9:00 - 9:45	CHECK-IN	CHECK-IN	CHECK-IN	CHECK-IN	CHECK-IN	CHECK-IN	CHECK-IN	CHECK-IN
10:00-10:45	WORKSHOP Exploring other worlds: GRAFF / STANSBERY KRAFT 105	WORKSHOP Spectroscopy HOEINK / MORRIS KRAFT 110	WORKSHOP You light up my life BROWNE PCF TENT 3	WORKSHOP Fun with Chemistry YEARTY PCF TENT 4	MEDICINE PANEL FLORES, LUDWIG, AJO-FRANKLIN PCF TENT 2		EXHIBITS (OUTSIDE)	
11:00-11:45	WORKSHOP Spectroscopy HOEINK / MORRIS KRAFT 110	WORKSHOP Exploring other worlds: GRAFF / STANSBERY KRAFT 105	WORKSHOP Fun with Chemistry YEARTY PCF TENT 4	WORKSHOP You light up my life BROWNE PCF TENT 3	EXHIBITS (OUTSIDE)		ENGINEERING PANEL BISWAL, MATA, BEDFORD PCF TENT 2	
11:45-12:30	LUNCH (Exhibit area)		LUNCH (Exhibit area)		LUNCH (Exhibit area)		LUNCH (Exhibit area)	
12:30-1:30	KEYNOTE Dr. Nicky Fox (Exhibits area)		KEYNOTE Dr. Nicky Fox (Exhibits area)		KEYNOTE Dr. Nicky Fox (Exhibits area)		KEYNOTE Dr. Nicky Fox (Exhibits area)	
1:45-2:30	EXHIBITS (OUTSIDE)		SCIENCE PANEL YEARTY, HILL, YI PCF TENT 2		WORKSHOP Canteloupe Epidural ElMaoued PCF TENT 3	WORKSHOP Suturing Bidare PCF TENT 4	WORKSHOP Roving on Mars CASE KRAFT 105	WORKSHOP Squishy Matter Physics BISWAL KRAFT 110
2:45-3:30	SPACE PANEL STANSBERY, DUDLEY, DYSON PCF TENT 2		EXHIBITS (OUTSIDE or BRK 101)		WORKSHOP Suturing Bidare PCF TENT 4	WORKSHOP Canteloupe Epidural ElMaoued PCF TENT 3	WORKSHOP Squishy Matter Physics BISWAL KRAFT 110	WORKSHOP Roving on Mars CASE KRAFT 105

Reach for the Stars! STEM Festival...continued

Morning HGS volunteers included Jim Tucker, Marsha Bourque, Nana Xu, and Saher Uddin along with her daughter Shehza Hassan and her friend Norah Velasco. (No photos from that time frame). Afternoon volunteers included Anna Leslie, Janet Combes, UH student Jarely Mendez, and Michelle Pittenger. The volunteers were kept busy talking with the students about the rocks and the work a geologist does. The volunteers were from several different age groups – which helped during the discussions since all had different experiences to share. The visitors frequently had questions and were often invigorated and had a glow of interest in their eyes.

Barbara Hill provided the following comments on the panel discussion:

“The career panel consisted of 3 women who had achieved a PhD in a physical science. My group included a young chemistry tenure track professor, a young physics post-doc, and myself, a not young geologist who is currently working in the energy industry. The audience was a group of young girls and their adult chaperones.

Each of us was introduced by a moderator and gave a 10 minute explanation of who we were, what we currently do in our careers, and how we got to where we are today. Basically, we described what did it took for us to achieve our goals.



Above: New volunteer Anna Leslie, Janet Combes, UH student Jarely Mendez, and Michelle Pittenger.



HGS booth with visitors and the afternoon volunteers.

After the introductions, the moderator opened the floor for questions from the girls and each of us took turns answering. The girls were actively engaged in the session. The girls' questions ranged from 'how did you know you wanted to be a xxx' to 'what one thing do you regret in your career?'

We had some serious moments, some laughs when describing how things may not go as planned, and some thought provoking questions.

I think the overall messages from the panel was for the girls to be willing to try new ideas, to find their passion, and to not be discouraged when things didn't work out as expected, but to keep moving forward. We also encouraged them to find a mentor who could help guide them as they moved toward their goals. It was amazing how fast the time flew by. After it was over, I had several girls who wanted to ask me more questions, so our conversations continued after the session ended.”

HGS CONTINUING EDUCATION SHORT COURSE

FRIDAY, MAY 6, 2022

WESTERN GECO LLC | 10001 RICHMOND AVENUE, HOUSTON, TX 77042

8:00AM - 4:00PM

HGS MEMBERS \$110 NON-MEMBERS \$150 STUDENTS \$60

[HTTPS://WWW.HGS.ORG/CIVICRM/EVENT/INFO?ID=2380](https://www.hgs.org/civicrm/event/info?id=2380)

8 PROFESSIONAL DEVELOPMENT CREDIT HOURS OFFERED

Schlumberger

Schlumberger is graciously providing
a gratis venue for this course.

Well Logs Courses - Well Logs: Basics

The HGS CEC is pleased to present courses for Well Log Interpretation. These courses are presented in two separate one-day courses: Well Logs: Basics on May 6, 2022 and Well Logs: Beyond Basics June 10, 2022.

Each course has its individual Registration, CEUs and Cost.

Course Description and Outline

This 8-hour course will give both geoscientists and engineers:

Session One Topics: Introduction

- Logging measurements and acquisition of data
- Data formats and sources
- Depth control and uncertainties
- Well surveys and well placement in Geo-space

Session Two Topics: Qualitative Log Analysis, Reading the rocks from well logs

- The "triple-combo" measurement theory
- Lithology vs. facies and what is shale?
- Sensing grain size and depositional environments in clastics
- Visualizing geochemical evidence in determining rock lithology
- Visualizing the reservoir, fluid content and permeability

Session Three: Breakout sessions.

- Reading the logs: Break-out groups will be given a set of logs to discuss in group and report to the class. The analysis will include potential reservoir rock, lithology of the rock sequence, depositional evidence, wellbore quality, etc.
- Well-to-well correlation: Participants will get a set of well-logs to correlate with focus on structure and depth control (The data sets will be paper plots or digital LAS files).
- Well-to-well correlations using stratigraphic depth controls.

Lunch Break

Session Four: Quantitative Log analysis Litho-porosity models.

- Techniques for clay and mudstone volume
- Mixed lithology techniques such as graphical MMA and deterministic models
- Total porosity versus "effective" porosity

Session Five: Resistivity and water saturation

- Quantitative resistivity, what corrections are important? What are the quantitative parameters?
- Archie Equation, Pickett Plots and the relationship to core analysis
- Advanced saturation equations (e.g., Simandoux): how do we determine parameters?
- Evidence and measurements of hydrocarbon types.
- Economic parameters from the analysis

Session Six: Break-out session

- Participants will get a shale/sand well to process for economics evaluation. The data sets will be paper log plots and graphing papers, or digital from .LAS files.

Summary

The aim of the short course is to create a learning environment that can educate the novice and challenge the experts. There will be several in-class exercises and break-out discussions to get hands-on experiences. Course materials will be available to work on paper or digital files to process on the computer, participants that use a petrophysics platform are encouraged to bring a Laptop. Other course materials provided will be a list of references and a 3 month license of Hydrocarbon Data Systems Petrophysical platform HDS-LOG.

Biographical Sketch



Mr. Richard Odom is a petrophysicist and geologist with more than 40 years of experience in domestic and international basins. He has authored numerous papers and patents on petrophysics and well-logging tool design.

Areas of expertise:

- Reservoir monitoring using pulsed-neutron systems,
- Open-hole and LWD log analysis, basic and advanced techniques,
- Field-level data harmonization and geologic model building,
- Artificial intelligence and statistical analysis of large data sets,
- Analysis of production and completions (production logs, cement integrity).

Education and industry affiliations:

- BS, geophysics, New Mexico Tech, 1980
- MS, geology, University of Texas at Arlington, 2009
- TBPG Professional Geoscientist – Geophysics #6718

Current Positions:

- Chief Executive Officer at Hydrocarbon Data Systems Inc.
- Managing Partner at Oil & Gas Evaluation & Consulting

Instructor Contact Information:

Richard Odom
richard.odom@ogec.com
817-975-1231

OGEC **OGEC.COM**
Oil & Gas Evaluations and Consulting, LLC

Wrap-up discussion for the day one.

HGS VIRTUAL GENERAL DINNER MEETING

MONDAY, MAY 9, 2022 | 6:00 - 7:00PM

ZOOM WEBINAR

HGS MEMBERS \$15 NON-MEMBERS \$30 STUDENTS \$10

[HTTPS://WWW.HGS.ORG/CIVICRM/EVENT/INFO?ID=2319](https://www.hgs.org/civicism/event/info?id=2319)

EVENT CONTACT: PATTY WALKER | PATTYWALKER1@ICLOUD.COM

A Simplified Guide to Sequence Stratigraphy: Case Studies and Examples

In the past four decades the sequence stratigraphy jargon has proliferated, resulting in multiple definitions of the same surface or new surfaces and units based on drawings of deposition in response to relative changes in sea level. The close association between base-level changes, the formation of surfaces, and specific stratal stacking that define systems tracts are at the heart of the confusion.

This presentation proposes a back-to-basics approach, emphasizing key observations that can be made from any geologic data: lithofacies, lithofacies association, vertical stacking, stratal geometries, and stratal terminations. Parasequence stacking is a consequence of the interplay of accommodation and sediment supply, which are controlled by eustasy, tectonics, climate, and initial depositional profile.

Sequence stratigraphic surfaces are defined based on shoreline position, and systems tracts are defined based on shoreline trajectory; therefore, shoreline position and trajectory are in fact the key observations to be made in a sequence stratigraphic interpretation. Terms like lowstand, falling stage, transgressive and highstand should be replaced by observation-based terms like “progradation-aggradation”, “degradation”, “retrogradation” and “aggradation-progradation”. Finally, research remains to be done on the relations between stratal stacking and various controls, and on the formation and chronostratigraphic significance of surfaces that demarcate changes in stacking.

The interaction of tectonics and eustasy controlled the relative changes in sea level in the geologic past and is often hard to determine which of them is the leading control on a case-by-case basis. More importantly for the interpreter, the resulting stratigraphic architecture controlled by these relative changes in sea level are the result of the changes in the rate of creation and destruction of accommodation and sedimentation rate through time. The important part of this discussion is that the relative changes in sea level are not recorded directly in the geologic data. However, the changes in the accommodation creation and sedimentation rates are and can be directly measured from the geologic data.

Therefore, we support an interpretation method to build sequence stratigraphic frameworks based on the direct observation of the changes in accommodation and sedimentation rate through time. With this approach, it is possible to build internally consistent frameworks based on the physical relationship of strata, independent of time duration and magnitude of events, not tied to sea level curves and calibrated to age control. Another added advantage is that the same methodology can be applied to build stratigraphic frameworks in lakes or continental strata, as well as in deep marine or carbonate systems. Case studies will be shown from exploration to production to emphasize the importance of applying this simplified approach to achieve significant business results.

Biographical Sketch



Vitor Abreu is an internationally recognized consultant, considered one of the world leaders in sequence stratigraphy and deep-water reservoirs. He has a Ph.D. from Rice University, with more than 30 years of experience in the oil industry. Vitor worked for Petrobras and

ExxonMobil, evaluating and risking petroleum systems elements in 38 sedimentary basins in the 7 continents. He is currently the owner of the Abreu Consulting and Training in Houston (Texas, USA), a globally recognized company for oil and gas consulting, training, career development services and research. Vitor is Past-President of the Society of Sedimentary Geology (SEPM), Adjunct Professor at Rice University and former Head of Stratigraphy in ExxonMobil. He is the chief-editor of SEPM's best seller “Sequence Stratigraphy of Siliciclastic Systems”, received the AAPG's Jules Braunstein Memorial Award for best poster presentation in an AAPG meeting and was appointed AAPG's inaugural International Distinguished Instructor.

HGS VIRTUAL ENVIRONMENTAL & ENGINEERING MEETING

WEDNESDAY, MAY 11, 2022 | 7:00 - 9:00PM

ZOOM MEETING

HGS MEMBERS \$15 NON-MEMBERS \$30 STUDENTS \$10

[HTTPS://WWW.HGS.ORG/CIVICISM/EVENT/INFO?ID=2324](https://www.hgs.org/civicism/event/info?id=2324)

EVENT CONTACT: MATTHEW COWAN | MRCOWAN1@HAL-PC.ORG

Potential for REEs and Other Critical Minerals in Large Evaporitic Bodies: Examples from North American Phanerozoic Salt Bodies

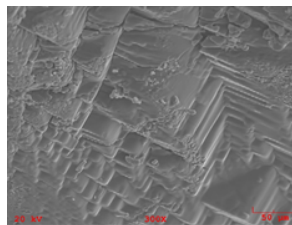
With the increased demand for rare earth elements (REEs) that coincide with our technological advances, we are looking for new sources. REEs are typically found in alkaline igneous rocks. Yet new potential sources lie elsewhere. Modern seawater contains REEs and other critical elements; extensive evaporitic bodies derived from ancient seawaters could be a potential source. Even at low concentrations, these elements could have commercial value, be useful indicators of palaeoceanographic conditions, and lead to insights in deposition, diagenesis, and halokinesis of salt bodies. Here, we present trace and bulk geochemistry of several large evaporitic bodies in North America: Salina Group, Louann Salt, Hutchison Salt, and Salado Salt. The bulk geochemistry shows that these bodies are primarily halite, with some containing anhydrite, shale laminations, and carbonates. The trace element geochemistry of the salts is highly variable, including REEs concentrations. Across the four evaporite bodies, there are relatively high amounts of Sr (0.0 – 1663 ppm), Fe (0 – 462 ppm), Mn (0 – 208 ppm), Nd (0 – 1237 ppm), Pr (0 – 817 ppm), Ce (0 – 468 ppm), La (0 – 471 ppm), amongst others. The REE enrichment in various samples can be argued to be an indicator of authigenic materials compared to diagenetically altered or weathered evaporite minerals or could be representative of ancient seawater chemistry. However, due to various basin flushing events, using the geochemistry alone for depositional analysis should be taken with a grain of salt. More data are needed to decipher the complex histories of these salt bodies. Overall, if found with high enough concentrations, these salt bodies, often brined for caverns, could prove economically valuable.

Biographical Sketch

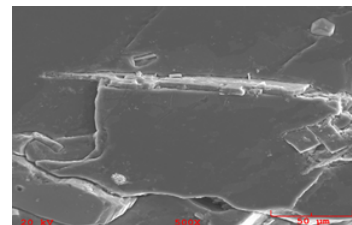


Dr. Julie Bloxson received her B.S. in geology from The University of Akron, her M.S. in geology from Kent State University, and her Ph.D. from Case Western Reserve University. For two years, she worked at the Ohio Geological Survey in the Energy Group on subsurface

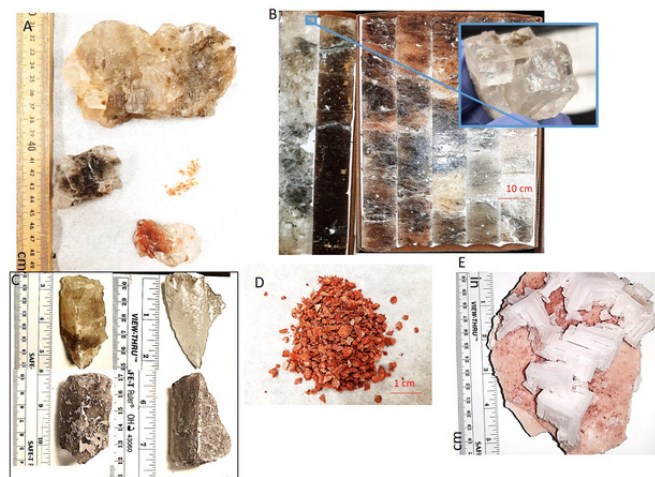
mapping projects that focused on salt deposits, carbon sequestration, and unconventional resources. She is currently an assistant professor at Stephen F. Austin State University and heads the East Texas Core Repository and the Core Lab. This facility focuses on non-destructive core analysis and correlates core data to well log data for better subsurface analysis for natural resources and energy-related issues.



Silurian Salina Salt
Sample 158 – 2573'
Potential chevron pattern



Silurian Salina Salt
Sample 127 – 2405' – Halite
precipitation in pores and cracks



HGS VIRTUAL GENERAL LUNCH

WEDNESDAY, MAY 25, 2022 | 12:00 - 1:00PM

ZOOM WEBINAR

HGS MEMBERS \$15 NON-MEMBERS \$30 STUDENTS \$10

[HTTPS://WWW.HGS.ORG/CIVICRM/EVENT/INFO?ID=2350](https://www.hgs.org/civicism/event/info?id=2350)

EVENT CONTACT: PATTY WALKER | PATTYWALKER1@ICLOUD.COM

Reality Check: Life Cycle of Geophysical Data Utilized in the Exploration and Development of Deepwater Stratigraphic Traps

Geoscientists have been successfully exploring for, and developing, stratigraphic traps for decades. Deepwater clastic “play opening” examples within the greater Atlantic region include Brazil - Marlim (1985), Equatorial Guinea - Zafiro (1995), Angola - Girassol (1996), Ghana - Jubilee (2007), Guyana - Liza (2015) and now Namibia - Graff & Venus (2021 & 2022).

Most of these clastic reservoirs are multi-cycle with varying rock physics responses. Individual reservoir thicknesses challenge the seismic methods ability to separate individual units and not be misled by tuning, overburden and focusing effects. This is particularly difficult in the pre-capture phase of the exploration cycle when 2D seismic, gravity and magnetic data might be the only geophysical data available to support the geologic concepts and models leading to identification, and initial assessment of an opportunity. Accurate DHI/AVO prediction becomes particularly challenging in this situation. Even when 3D seismic is available it will rarely, if ever, be optimized for a specific reservoir interval and calibration to rock physics will likely be poor. It is especially important to emphasize that the most critical decisions (Exploration acreage capture and wildcat drill) are made with significantly lower quality and quantity of data than that typically available during the Appraisal and Development phases. Analogs from these more mature settings are useful but need to be utilized in the context of the data actually available. Good geologic concepts, analogs, integration of all data types, experience, judgement, and good luck all are in play for true frontier exploration ventures.

All the above being true, recent advances in acquisition and processing technology are clearly an enabler for improving the resolution of our seismic images; hence improved identification and characterization of stratigraphic traps whether it be in the Exploration, Appraisal or Development stage. However, care must be taken to ensure these imaging enhancements retain the amplitude fidelity necessary to allow for detailed AVO/DHI analysis. Acquisition, processing, and interpretation all play important and interrelated roles in obtaining the maximum utility from the seismic data. The challenge is to maximize the bandwidth of the seismic data while retaining amplitude fidelity across all offsets/angle ranges with specific attention to what constitutes the irreducible seismic noise floor.

The primary focus of this presentation will be stratigraphic traps in the marine deepwater environment. We will discuss the challenges of data availability and confidence, where resolution and data fidelity can be gained or lost, what factors primarily determine bandwidth recovery, and what decisions still need to be made in a somewhat subjective, target oriented manner. In addition, the importance of visual resolution for interpretation, regardless of the actual data fidelity, will be highlighted. Data from deepwater Guyana is used to demonstrate fundamental principles and the evolution of acquisition, processing, and interpretation workflows over the history of this project.

Biographical Sketch



Joseph Reilly started his oil & gas career with Mobil in 1980 and has over 41 years of industry experience in addressing Exploration, Development and Production geoscience challenges throughout the world. In his early career he sat wells as both geologist and geophysicist offshore

USA East Coast, Morocco, UK and Equatorial Guinea. Similarly, he has been directly involved in countless seismic campaigns throughout the world and has had the good fortune during his career of experiencing numerous exploration successes, as well as failures. He has a BSc in Geology from University of Rochester and an MSc in Geology/Geophysics from Virginia Tech. He has authored/coauthored hundreds of papers and presentations on geophysical applications. He is a long-standing member of AAPG, SEG and EAGE. He has held both technical and management positions and recently retired as ExxonMobil Chief Research Geoscientist. He is currently serving as Second Vice President, SEG Board of Directors.

HGS CONTINUING EDUCATION SHORT COURSE

FRIDAY, JUNE 10, 2022

WESTERNGECO LLC | 10001 RICHMOND AVENUE, HOUSTON, TX 77042

8:00AM - 4:00PM

HGS MEMBERS \$110 NON-MEMBERS \$150 STUDENTS \$60

[HTTPS://WWW.HGS.ORG/CIVCRM/Event/Info?ID=2381](https://www.hgs.org/civCRM/Event/Info?ID=2381)

8 PROFESSIONAL DEVELOPMENT CREDIT HOURS OFFERED

Schlumberger

Schlumberger is graciously providing
a gratis venue for this course.

Well Log Courses – Well Logs: Beyond Basics

This course is the continuation of the course presented on May 6, 2022 Well Logs: Basics.

However, it can be taken without having taken the earlier Well Logs: Basics course.

Course Description and Outline

Session Seven: Sonic Logs

- Measurement theory, monopole, dipole, ultrasonic
- Applications for verifying cement integrity
- Sonic porosity, how does it fit in with the litho-porosity models
- Dipole and cross dipole, rock mechanics, anisotropy and external stress and strength fields

Session Eight: Unconventional Reservoirs, Lessons learned in the vertical wells

- A different optimization paradigm in Unconventional Plays
- Rock Mechanics and the external stress fields (current and ancient) from sonic and imager data
- Geochemistry techniques for TOC, Applying Passey Log Delta R and other models
- Direct Geochemistry from pulsed-neutron spectroscopy
- Data available in the lateral

Session Nine: Break-out, Surveying the lateral and geo-steering

In this break-out the participants receive a horizontal well survey plot (paper or digital) with a vertical well near the heel and a vertical well near the toe from the “Wolf Bone” play in the Delaware basin. After correlating the vertical wells what is the analysis of the geo-steering targets?

Lunch Break

Session Ten: introduction to NMR logs

Session Eleven: Introduction to Formation Testers and Capillary pressure discussion

Session Twelve: Small scale applications of Artificial Intelligence in log analysis

- Normalization and harmonization of well data sets: GR normalization example
- Emulation of missing data: mapping Cased-hole analysis example
- Automated classification of rock sequences for
 - pruning of training data,
 - sand thickness and bed counts,
 - time-to-depth for seismic.

Wrap-up discussion for the day two.

Summary

The aim of the short course is to create a learning environment that can educate the novice and challenge the experts. There will be several in-class exercises and break-out discussions to get hands-on experiences. Course materials will be available to work on paper or digital files to process on the computer, participants that use a petrophysics platform are encouraged to bring a Laptop. Other course materials provided will be a list of references and a 3-month license of Hydrocarbon Data Systems Petrophysical platform HDS-LOG.

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Areas of expertise:

- Reservoir monitoring using pulsed-neutron systems,
- Open-hole and LWD log analysis, basic and advanced techniques,
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- Artificial intelligence and statistical analysis of large data sets,
- Analysis of production and completions (production logs, cement integrity).

Education and industry affiliations:

- BS, geophysics, New Mexico Tech, 1980
- MS, geology, University of Texas at Arlington, 2009
- TBPG Professional Geoscientist – Geophysics #6718

Current Positions:

- Chief Executive Officer at Hydrocarbon Data Systems Inc.
- Managing Partner at Oil & Gas Evaluation & Consulting

Instructor Contact Information:

Richard Odom
richard.odom@ogec.com
817-975-1231

OGEC **OGEC.COM**
Oil & Gas Evaluations and Consulting, LLC

May 2022

<i>Sunday</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>
1	2 <i>SWS-AAPG Annual Convention: Combining Scales of Geology to the Reservoir</i> May 2 - 4	3	4
8	9 <i>HGS Virtual General Meeting</i> "A Simplified Guide to Sequence Stratigraphy: Case Studies & Examples" Page 14	10 <i>HGS Board Meeting</i> 6 p.m.	11 <i>HGS Virtual E&E Meeting</i> "Potential for REEs and Other Critical Minerals in Large Evaporitic Bodies: Examples from North American Phanerozoic Salt Bodies" Page 15
15	16	17	18
22	23	24	25 <i>HGS Virtual General Lunch</i> "Reality Check: Life Cycle of Geophysical Data Utilized in the Exploration & Development of Deepwater Stratigraphic Traps" Page 16
29	30 <i>HGS Office Closed for Memorial Day</i>	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.

Robert A. Chaffin

THE CHAFFIN LAW FIRM

4265 San Felipe #1020 • Houston, Texas 77027 • (713) 528-1000 • Cell (713) 817-2786 • robert@chaffinlawfirm.com

Thursday	Friday	Saturday	
5	6 HGS Well Log Courses "Well Logs: Basics" Page 13	7	<p>Reservations</p> <p>The HGS prefers that you make your reservations online through the HGS website at www.hgs.org. If you have no internet access, you can email office@hgs.org or call the office at 713-463-9476.</p> <p>Reservations for HGS meetings must be made or cancelled by the date shown on the HGS website calendar, which is normally 24 hours before hand or on the last business day before the event.</p> <p>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, please contact the HGS Office at office@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 still be billed.</p>
12	13	14 	
19	20	21	
26 	27	28	
			<p>Pricing</p> <p>In-Person Meetings HGS Members \$35 Non-Members/Walk-Ups \$40 Emeritus/Honorary Life \$15 Students \$5</p> <p>Virtual Meetings HGS Members \$15 Non-Members \$30 Students \$10</p>

**RENEW YOUR HGS
MEMBERSHIP**
www.hgs.org



**Houston
Geological
Society**

MEMBERSHIP DUES INCREASE

**EFFECTIVE FOR
2022-2023 DUES**

Active / Associate Members \$36

Emeritus Members \$18

Student Memberships still FREE

Prices effective for all renewals &
applications for the 2022-2023 year.

Thank you for your continued
support and understanding.

Effective for all membership renewals and membership applications moving into the 2022-2023 fiscal year, HGS has slightly increased its membership dues. Moving forward, the new membership fees will be as follows:

- Active / Associate Memberships: **\$36.00**
- Emeritus Memberships: **\$18.00**
- Student Memberships are still **FREE**.

Dues for the upcoming year are not due until June 30, 2022.

The Houston Geological Society is a society with a global view. The HGS includes students, geologists, geophysicists and academic experts. Our objectives are to stimulate interest and promote the advancement of the geosciences, to disseminate and facilitate discussion of geological information, to enhance professional interaction among geoscientists, and to aid and encourage academic training in the geosciences. As an HGS member, you will receive special privileges, discounts, and priority event registration. If you are an active AAPG member, please support this society and become an active HGS member!

Active Membership

In order to qualify for Active Membership, you must have a degree in geology or an allied geoscience from an accredited college or university or, 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 5 years. Active Members shall be entitled to vote, stand for election, and serve as an officer in the Society. Active Members pay \$36.00 in dues (effective beginning for all 2022-2023 dues).

Associate Membership

Associate Members do not have a degree in geology or allied geoscience but are engaged in the application of the earth sciences. Associate Members are not entitled to vote, stand for elections or serve as an officer in the Society. Associate Members pay \$36.00 in dues.

Student Membership

Student membership is for full-time students enrolled in geology or an allied geoscience. Student Members are not entitled to vote, stand for elections or serve as an officer in the Society. Student Member dues are currently waived (free). Students will have a 24 month grace period after graduation. After a student graduates and receives a job, he/she must apply for Active membership to HGS.

Emeritus Membership

Members who attain the age of 65 and have been Active members of HGS for a minimum of 10 years may request Emeritus status by contacting the HGS office. Emeritus Members shall also be considered Active Members. Emeritus Members pay \$18.00 in dues (effective beginning for all 2022-2023 dues).

Interested in becoming a member? Be sure to fill out a [Membership Application](#)!

We thank you for your continued support and greatly appreciate your understanding!
2021-2022 HGS Board



Candidates for the 2022-2023 Executive Board

Houston Geological Society Officer Election

The candidates put forth by the Nominations Committee are:

President-Elect: Paul Britt, Bryan Guzman

Vice President: Ceri Davies

Secretary: Meredith Faber, Amanda Johnston

Treasurer-Elect: Fang Lin, Lauren Robinson

Editor-Elect: Lucia Torrado, Caroline Wachtman

Directors (2 positions): Bill DeMis, Troy Meinen, Kenneth Mohn, Marcus Zinecker

HGS Election Voting Instructions

HGS Members will be able to vote online via the HGS website. You must be logged into your account to cast your vote.

Ballots will be online only - no mailed ballots!

Please check the HGS website for updates and announcements.

The voting period begins April 10, 2022 and continues to May 10, 2022.

President-Elect (two candidates)



Paul Britt

I am honored to have been asked to run for HGS President-Elect among a talented slate of candidates. The HGS is the premier geological society for the Houston Metro area and Upper Gulf

Coast. Our society serves a diverse interest of geoscientists (petroleum, environmental, mining, resource exploration, professors, K-12 educators, geotechnical, engineering, and others) and my vision for the society is to see growth in membership through an emphasis on this diversity and community outreach.

I moved to Houston to begin my career in 1978 after graduation. I joined the HGS in 1980 when I regularly attended dinner meetings and activities. I have been an active volunteer in HGS committees since 1987, and served on the HGS Executive Board and other professional society offices since 1994. During those times, I worked at several large oil and gas companies before becoming an independent geologist in 1992.

Having previously served as HGS Treasurer and AAPG President and other offices, I understand the complications the HGS is currently facing. As your President, I will endeavor to bring the HGS onto solid business footing, while staying focused on my expressed vision for HGS and on the membership's interests.

EDUCATION & CERTIFICATIONS

Eastern Michigan University, B.S. in Geology, 1977
Texas P.G., #2575 Louisiana P.G., #523
Certified Petroleum Geologist, AAPG #3727
Certified Professional Earth Scientist, SIPES #2249
Chartered Geologist, Geological Society of London

Read more about Paul's professional experience and HGS activities & awards by clicking [HERE](#).



Bryan Guzman

Ever since I joined the HGS, I have enjoyed the benefits of education, networking, and friendship. Currently, I am working with the GCAGS as Treasurer. For about 7 years, I had spent much of my

time working on the exhibits committee organizing the set-up and transportation of the HGS booth for various conventions throughout the year. When I served as HGS Secretary, it afforded me the opportunity to learn more about the many functions of the HGS. I was also exposed to the duties as the HGS Treasurer-elect and Treasurer where I witnessed the society's dedication to the various efforts through the annual budget. I was then given the opportunity to serve as the HGS Vice President during the COVID19 pandemic where I was able to schedule all our monthly technical talks digitally for the first time. It has been a pleasure meeting many people along the way and I am thankful to the opportunities the HGS has provided me while serving as a Chairman, Secretary, Treasurer, and Vice President. It would be my great pleasure to serve in the capacity of HGS President Elect.

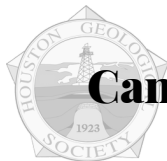
Education:

2008 BS Geology University of Texas at San Antonio
2018 MS Analytics Texas A&M University

Experience:

2008 – 2011 Geologist – Ingrain Inc.
2011 – 2013 Geoscientist – Ingrain Inc.
2014 – 2015 Product Champion – Drill Cutting Technologies – Ingrain Inc.
2015 – 2017 Geologic Advisor – Ingrain Inc.
2017 – 2018 Senior Technical Advisor – Halliburton
2018 – 2019 Senior Account Manager – TGS
2019 – Present Veilvox LLC – Founder
2020 – 2021 Senior Account Manager – Premier Oilfield Group
2021 – Present Director Global Business Development & Technology – Premier Oilfield Group

Read more about Bryan's professional affiliations and activities by clicking [HERE](#).



Candidates for the 2022-2023 Executive Board (*continued*)

Vice President (two candidates)



Ceri Davies

I am very appreciative of the nomination to run for Vice President of the Houston Geological Society. I moved to Houston 10 years ago and have always enjoyed the events and education provided by the

HGS and look forward to supporting the Society as it celebrates its centenary. The Africa and Latin America conferences have become a staple of my calendar and I enjoy the variety of talks provided by the evening dinners and general lunches. My recent involvement with the HGS has included co-chairing the North American Explorationist Group, Board Member, Editor and most recently Chair of the Latin America conference held this past November. As with all Societies, the HGS must adapt and evolve in order to provide our members with applicable and interesting events and I look forward to working with the rest of the HGS team in the coming years, either through a VP capacity or volunteering when resources are needed.

Education

2001-2005: University of Liverpool, Masters of Geophysics with Geology

2005-2009: University of Liverpool, PhD in Paleomagnetism

Professional Experience

2010 – Present: CGG (formerly Robertson Research), Various Sales, Business Development and Project Management roles across the Americas.

Professional Affiliates

Houston Geological Society, AAPG, Rocky Mountain Association of Geologists



Scott Sechrist

During more than 40 years of industry experience, the HGS has always been there to support me in my career. For Geoscientists of all ages and skill levels, I have observed the HGS to always be the

Number One source for Networking; with the highest quality Technical Meetings and Continuing Education presentations in the industry.

As an HGS member, I have volunteered through the years in a wide range of events: working at the registration table for Luncheon and Dinner meetings, stuffed convention bags, participated in Science Fair judging, volunteered at Shrimp Peels and Golf Tournaments, learned how to shoot Skeet and helped to promote the HGS Fishing Tournament, provided liaison with other local geoscience societies, was honored to serve on the HGS Board of Directors and serve as Vice President in 2020-2021.

As an Emeritus member of HGS, I am convinced that it is my duty to contribute further to the ongoing success of the Houston Geological Society. In humble recognition of all the benefits HGS membership has provided to me, I would be honored to serve my fellow Houston Geological Society members as Vice President. My first priority will always be to continue the HGS tradition of providing outstanding technical content, to benefit the entire HGS membership. I thank you for your consideration and would appreciate your vote.

Education:

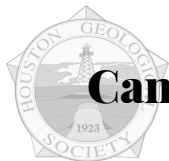
Houston Community College, Houston, TX. Post Baccalaureate Courses 1985-86, for University of Houston / MS Geology program.

S. F. Austin State Univ., Nacogdoches, TX. Bachelor of Arts Degree 1975- 1977 Electronic Communication R-T-F / Marketing

Southwest TX State Univ., San Marcos, TX. Bachelor of Arts Degree 1972-1974 Geography / Remote Sensing

Trinity University, San Antonio, TX. Baccalaureate Courses, 1970-1972 Geology / Geography

Read more about Scott's professional affiliations by clicking [HERE](#).



Candidates for the 2022-2023 Executive Board (*continued*)

Secretary (two candidates)



Meredith Faber

Born and raised in Texas, Meredith attended Trinity University in San Antonio where she joined AAPG as a student member in 2003. She graduated with a Bachelor of Arts degree in English and a Bachelor of Science degree in geosciences in 2005. She went on to attend graduate school at Southern Methodist University in Dallas, Texas, where she split her time between teaching oceanography lab classes, participating in various student organizations (including the SMU AAPG Student Chapter) and earning a doctoral degree in geology with an emphasis in stable isotope geochemistry. She completed her dissertation research on isotopic and ecological investigations of the land snail record and novel data management techniques in 2012.

After graduation, Meredith joined Swift Energy Company in Houston, Texas, to work in exploration in onshore South Texas. Meredith moved to Noble Energy in 2014 where she worked in the Marcellus Business Unit and in Development and Operations in the Permian. She currently works as a freelance editor for the Bureau of Economic Geology at The University of Texas at Austin.

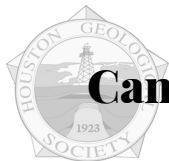
Meredith's most recent volunteer roles include serving as an HGS Delegate to the AAPG House of Delegates and the 2020-2021 President of AAPG's Division of Professional Affairs. Meredith credits her involvement with organizations like AAPG, HGS and SEG with providing the opportunities and resources that resulted in her present career path and considers it a privilege to give back to the Society by standing for the office of HGS Secretary.



Amanda Johnston

I started my career in the oil and gas industry as many others do, with field experience. I mud logged during the summer of 2017 with Datalog Geological Services and gained additional experience through several internships with companies including Southwestern Energy (2018), ExxonMobil (2019), and Hess (2019). At the end of 2019, I accepted a full-time position as a Foundation Geologist with Hess Corp. During my time with the company, I've had the great opportunity of completing a rotation in the Guyana Basin learning about offshore operations, and I'm currently in an exciting rotation as an operations geologist working the Williston Basin, North Dakota.

I earned my M.S. in geology from University of Louisiana at Lafayette and my B.S. in geology from Stephen F. Austin State University. While beginning my early career, I Vice-Chaired the newly formed HGS Student Expo Committee in 2021 and will be chairing this committee for HGS in 2022 and 2023. I am truly honored to receive a nomination for the HGS Secretary position. If nominated, I would look forward to learning more about the society and its members, as well as support the growth of its membership as a board member.



Candidates for the 2022-2023 Executive Board (*continued*)

Treasurer-Elect (two candidates)



Fang Lin

It is a privilege and an honor to be nominated as a candidate for Treasurer-Elect on the Board of Houston Geological Society (HGS). I am a mid-career geologist who have worked in the energy industry for sixteen years. My career started as a technical geologist and had increasing responsibilities as a project manager and supervisor. I have not served as a treasurer for any organization before, so I searched online about “What skills do you need to be a treasurer?”, one of the sources ([Characteristics of a Good Treasurer](#) | [DIY Committee Guide](#)) said: “A good treasurer will:

- be capable of handling figures and cash;
- have an orderly mind and methodical way of thinking;
- have experience in dealing with large sums of money and budgets;
- have experience of financial control and budgeting;
- have an eye for detail; be available to be contacted for ad hoc advice;
- have a financial qualification or relevant experience;
- have experience of pension schemes;
- good communication and interpersonal skills;
- ability to ensure decisions are taken and follow-up; and
- show good time-keeping.

I think I have majority of the skills due to my personality and experiences. I am disciplined both with personal finance and organizational spending. I have managed budgeting of large research projects with millions of dollars annual spending. I understand the criticality of accurate book-keeping and the importance of that for an organization. I am willing to learn and do what our organization needs me to do, to continue to serve our members and our community. Thank you for voting for me!

Education

B.S., Geology, Chengdu University of Technology, 1991 - 1995

M.S., Ore Deposit Geology, Chengdu University of Technology, 1995 - 1998

Ph.D., Geosciences, Virginia Tech University, 2000 - 2005

Experience

2020 - present: Chevron Corporation, Chapter Manager, Hydrocarbon Charge & Geochemistry

2000 - 2020: Chevron Corporation, Geochemist, Research Scientist, Team Leader

1998 - 2000: Chengdu University of Technology, Instructor

Professional Activities and Awards

2022 - present HGS Scholarship Night Committee co-Chair

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.



Lauren Robinson

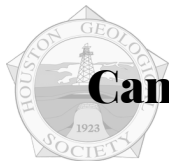
My passion for geology began as an undergraduate student at Smith College, continued throughout my time at Indiana University's Field Camp, as a field assistant in the Books Cliffs and an extended internship at Big Bend National Park, and culminated with graduate work in structural geology at Baylor University. In June it will be 15 years since I have been working in the oil patch.

During my professional career, I have teamed with large, independent operators (e.g. EOG Resources, Marathon Oil and EP Energy) on various unconventional and conventional projects. Most recently, I joined the Miller and Lents team where I am currently pursuing a range of domestic and international upstream projects with numerous clients.

In addition to volunteering with the HGS Social Media committee, I have been an active volunteer with both the SPE-GCS and Chemo Angels.

My husband, Eric, is also a geologist and works in oil and gas. Our son, Nate, is five years old and enjoys “working” with rocks and in the dirt. Shocking!

Thank you!



Candidates for the 2022-2023 Executive Board (*continued*)

Editor-Elect (two candidates)



Lucia Torrado

Lucia Torrado is a geoscientist with AGI Exploration. She received her B.S. degree in geology from the National University of Colombia, and her M.S and Ph.D. from the University of Houston.

She has worked with the Conjugate Basins, Tectonics and Hydrocarbon consortium at the University of Houston, PGS, TGS and interned at Shell and Talisman (now Repsol). She has experience in several Caribbean and Latin American basins. Her graduate work in Brazil was recognized as the best poster presentation at AAPG's Annual Conference and Exhibition in 2017.

Lucia is currently the Translations Committee Chair at SEG, an Imperial Barrel Award industry advisor for AAPG and a member of AAPG, SEG, HGS, GHS and AWG.

Lucia currently serves as Secretary on the HGS Board of Directors.



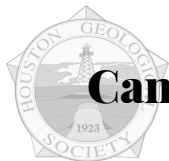
Caroline Wachtman

Caroline has extensive experience managing and executing complex subsurface projects and has explored, developed and produced resources worldwide. She spent 15 years with

ExxonMobil, where she led multiple cross-functional teams identifying and evaluating resources throughout West Africa, the Caribbean and Caspian regions. Recently, she worked US onshore conventional and unconventional mature production assets with Zarvona Energy. Now, she is applying her project management and reservoir characterization expertise as Director of Energy Transition & Capital Projects at Caliche Development Partners, where she is leading a carbon sequestration project.

Caroline has a B.S. in Geology from the College of William & Mary and a M.S. in Geology from the University of Wisconsin-Madison. She has participated in three executive leadership programs, including the Thunderbird School of Global Management. Caroline is published in the Journal of Structural Geology and Tectonophysics. She enjoys sharing her interest in geology with her two young daughters and their Girl Scout troop.

Caroline currently serves as Committee Chair of the HGS Africa Conference.



Candidates for the 2022-2023 Executive Board (*continued*)

Directors (four candidates)



Bill DeMis

I am honored to stand for the position of Director at the HGS. I will bring all of my business experience to the Executive Board to make the HGS economically profitable, scientifically relevant, and fun for our members. I have had executive experience across a broad range of companies that range from small independents to “big oil” to investment banking. I have held the positions of Exploration Manager at Marathon Oil Company (“big oil”), Exploration Vice President at Roxanna Oil Company (local Houston independent), and most recently, as Senior Vice President and Chief Geologist at Goldman Sachs in investment banking here in Houston.

I understand the issue facing all of our independent members as well as those who work for major oil companies. The critical strength I can bring to the HGS is a strong understanding the financial challenges we face as a professional society.

I currently run my own consulting company. I am working on getting funding for two different start-up companies; one company is situation in the US onshore Gulf of Mexico, and other is situated in Bulgaria. I like to look at deals and generate prospects. I still know how to slip well logs. I am also a visiting lecturer at The Jackson School of Geosciences at The University of Texas at Austin.

As a member of HGS, I actively participated in the continuing education committee, by chairing classes, inviting speakers, and I have taught a class. I have given several talks at the HGS on the Haynesville shale play, the Eagle Ford, and on the relationship of the US dollar to Oil Prices and OPEC policy. In 2021, I was awarded the dedicated Service Award from the AAPG. In 2000, I received the Dedicated Service Award from the West Texas Geological Society. In 1996 and 2000, I won the “best paper” at the AAPG National Conventions for my work on the effects of US dollar exchange rates on OPEC price policy. In 1993, I won a “best paper award” from the GCAGS for my work on production-controlling carbonate stratigraphy of the Smackover.

I am a member of HGS, WTGS, RMAG, and SIPES. I am AAPG Charles Taylor Fellow. I am also an AAPG foundation trustee associate. My LinkedIn page has links to some of my talks.

Read more about Bill's professional experience and awards by clicking [HERE](#).



Troy Meinen

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.

In my personal life I have served for more than 20 years as a mentor of students through my church and Scouting. Most recently, I have expanded my leadership experience through my service as the Chairman of a local Houston District of the Boy Scouts of America.

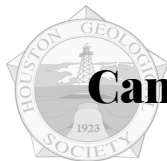
I believe my technical experience in the oil and gas industry combined with my experience and leadership in HGS and other organizations has prepared me to help lead HGS as we continue in challenging times.

Education

- M.S. Geology, Baylor University, 1996
- B.S. 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



Candidates for the 2022-2023 Executive Board (*continued*)

Directors (four candidates)



Kenneth Mohn

Professional Experience

Mohn & Associates, LLC – (2018-Present)

Formed to develop new business opportunities in consulting, project development and oil and gas exploration.

Developing exploration projects and seismic surveys both Proprietary and Multi Client.

Geoex/MCG –MCG was purchased by Geoex in 2016. **(2013 - 2018)** 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.

Fugro Multi Client Services, Inc., a division of Fugro N.V. under the Seismic Services Group. **Exploration Vice President (2002- 2013)** 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.

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: 1987-2002** Marketing Manager, Africa: 2000-2002
Marketing Manager, Gulf of Mexico 1995-2000
Project Manager, International Division 1989-1995
Geologist and Marketing Representative 1987-1989

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

Professional Societies and Affiliations:

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

Activities:

2021-Present AAPG House of Delegates Committee, Delegate, Foreman
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
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.



Marcus Zinecker

Marcus Zinecker received B.Sc. degrees in both geology and geophysics from the University of Houston in 2014, and a Ph.D. in geology from the University of Houston in 2020. He began volunteering for the Houston Geological Society in 2018, shortly after starting grad. school. Marcus volunteered with the exhibits committee, attending industry conferences here in Houston and across the country on behalf of HGS. (Many of you have probably seen him working at the HGS booth at a conference or two!) In 2019, Marcus became the committee chair for HGS Exhibits, coordinating HGS's presence at conferences and manning the booth. He received the HGS Rising Star Award for his efforts and contributions to Exhibits in 2018-2019. Marcus' goal with the Exhibits Committee has been to spread awareness of the programs available to and benefits of HGS membership at as many industry conferences and trade shows as possible, as well as to bring in new members – especially young professionals. Marcus has also volunteered as a session co-chair at the HGS-EAGE Latin America conference and presented at several other HGS conferences.

In his day job, Marcus works at BP as an exploration geologist in their Gulf of Mexico team, where he has had the opportunity to work on various prospect descriptions and sub-regional projects, as well as exploration well planning and drilling operations. In fact, Marcus celebrated his first oil discovery in 2021 with the Puma West discovery.

In his free time, Marcus enjoys cooking, camping, rock climbing, and all kinds of board games. He especially looks forward to taking his 2-year-old son on his first rock collecting trip this summer.



GOLF TOURNAMENT

Register Now

Entry deadline Oct. 14
www.hgs.org

***Monday,
October 17, 2022***

**Early Bird Special
through Oct 8**

One Golfer \$150
Four Some \$600

HGS ANNUAL GOLF TOURNAMENT

17 OCTOBER 2022 | STERLING COUNTRY CLUB



TEAM APPLICATION

Entry deadline: October 14, 2022

Come join us for golf, food, friends, and fun at the annual HGS Golf Tournament at Sterling Country Club and Houston National Golf Club (www.sccathn.com). There will be prizes awarded for closest to the pin and long drive, putting games before we start, as well as many great door prizes for participants.

Entry Fee: \$175.00/Golfer or \$700.00/Team.

Early Bird Special (Through October 8th): \$150.00/golfer or \$600.00/team

Entry Deadline: October 14th.

Individual entries will be grouped with other individual golfers to make a foursome. Entries are limited to and will be accepted on a first-in basis.

Schedule of Events

8:00am - 9:45am Registration, free use of driving range and mini games

(Breakfast will be provided by Core Lab and Petro Log International, Inc.)

10:00am Shotgun start

3:00pm Cash bar, open buffet

3:30pm Door prizes and awards presentation

Companies or individuals interested in sponsoring the event should contact the HGS Office at office@hgs.org or 713-463-9476. If paying by check, please make check payable to HGS or Houston Geological Society. Sponsorship deadline is October 8th.

Team Captain: _____ Phone: _____ Amount Enclosed: _____

Company: _____ Email: _____

Card Number: _____ Exp. Date: _____ CVC: _____

Billing Address: _____

Phone: _____ Email: _____

Card Number: _____ Expiration Date: _____ CVC: _____

Foursome Members

Company

Phone

Email

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2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____

Please print Please provide email addresses for ALL team members, as all communications will be done via email.



FOURTH EAGE/HGS CONFERENCE ON LATIN AMERICA

14-16 SEPTEMBER 2022 • CARTAGENA, COLOMBIA

CALL FOR ABSTRACTS OPEN!

Welcome to the Fourth EAGE/HGS Conference on Latin America: “Exploring Latin America’s role in the Future Energy Mix”

On this occasion, the EAGE/HGS will bring this event to Cartagena, Colombia aiming for the first fully in person conference since the first event. Considering recent developments taking place in the world since 2019, the aim of the Technical Committee is to deliver to the audience, an integrated and exceptionally enriched conference on Latin America, offering a forum to explore relevant topics affecting the future of energy supply and the key role Latin America can play in the future energy mix to tackle energy poverty.

Since the last two decades, the Latin American region has faced continuous development in energy resources, which has opened to increased investment. The conference will provide a forum to explore the wide variation in geological settings as well as the latest geological insights from Mexico to Tierra del Fuego, including the most recent views from the conjugate margin and global analogues. Sessions covering advances in seismic imaging and non-seismic methods as well as machine learning and digitalization, are expected to present ways to achieve a more efficient exploitation of these resources.

In recent years, the oil and gas industry has significantly increased exploration and production activities in the southern Caribbean margin, the Andean foreland, Guyana-Suriname offshore, deep-water Brazil and unconventional exploration in Argentina and Colombia. Recent significant hydrocarbon discoveries in deeper water have indicated great rewards in frontier exploration but there is also a strong move towards Infrastructure Led Exploration (ILX) or Advantaged Hydrocarbons and this is expected to be a key topic in the conference.

Sessions with invited speakers are planned to cover above ground and energy transition related issues. These will provide an opportunity to interact and hold more open discussions.

Topics

The Technical Committee invite practitioners, innovators and industry experts to contribute to this workshop and share their achievements and challenges, lay out big innovative ideas and seek new alliances to jointly develop a road for the future.

Contributors are welcome to submit abstracts of 2-4 pages in length. Submission for posters & oral presentations is welcome on all topics. Professionals, Bachelor, Master or PhD students are invited to share their work. Abstracts should be submitted via the EAGE website using the downloadable template.

The papers must follow the Abstracts Submission Instructions

The deadline for abstract submission is 25 June 2022.

Please submit abstracts on the following topics:

- The Geology of Latin America
- Seismic Imaging in E&P
- Applications of non-seismic Geophysical Methods
- Petroleum Geoscience for Conventional and Unconventional E&P
- Machine learning present and future role in exploration through to exploitation in Latin America
- Commercial/Above Ground
- Special Session: Energy Transition

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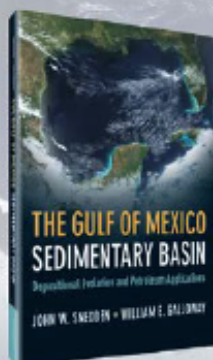
THE GULF OF MEXICO SEDIMENTARY BASIN

Depositional Evolution and Petroleum Applications

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Remembrance

GAR CHARLES WILLIS
1936-2022



Gar Willis passed away Monday the 4th of April 2022. He was born in San Diego California to Charles Anton Willis and Louise Adelaide Irwin. Gar graduated from San Diego High School and went on for his Bachelor of Arts Degree from San Diego State University, 1954, with a degree in Geology. Following his undergraduate degree Gar moved to Northern California. He graduated from The University of California Berkley with a Master of Arts in Geology, 1962. While at Berkley he was an Intern for Shell Oil Company, where during summer months, he was a field geologist on the North Slope of Alaska.

Following graduation Gar was hired as a staff geologist by Shell Oil and was moved in 1962 to Corpus Christi Texas, where he developed prospects and analyzed geo-pressuring in South Texas. In 1965 he developed seismic prospect mapping to determine economic potential in areas of the Texas Offshore. In 1968 he was assigned to Shell's head office in Houston and worked with a special study group investigating structural evaluation of Nevada and Utah with eventually lead to a active exploration by Shell. He was responsible for increasing Shell's interest and activity in Montana, Wyoming, and Utah. Between 1972 and 1975 he was involved in Basin evaluations on the African Continent and Shelf Areas of the Mediterranean Sea. Following his work at Shell he helped establish an independent company, Pond Oreille Oil and Gas, where he was Chief Geologist, advising upper management on areas of exploration and generating prospects in South Texas and Southwest Louisiana. Following Pond Oreille, he co-founded Realm Resources Inc. where he served as Vice-President of Exploration.

Following his experience at Realm Gar worked as a consultant for Forney and McCombs where his interest was South Texas developing at least 6 prospective areas that were drilled. Gar worked as a Consultant for Cabot Oil and Gas, 1998-2004, where he and his geophysicist partner, Don Frye, made a substantial discovery for the company in South Louisiana. Gar and his partner moved on to Palace Exploration in 2004-2007 and have consulted for Magnum Producing ever since, 2007-2022. Gar joined the Houston Geological Society on June 30, 2008.

In 1967, Gar met and married Judith Ann Eans in Houston and was then quickly transferred to Farmington New Mexico as part of Shell's investigation of Utah. Shortly thereafter he and a small team were moved to Western Canada to determine possibilities for drilling. During that time their first born, Charles Gregory Willis was born in 1971. After returning to Houston and after several years their youngest, James Derek Willis was born in 1974. Gar and Judy were divorced in 1984. Gar married Carol Sims Vaughan in 1988 combining their two families which included Carol's son, Geoffrey Scott Vaughan.

Gar was delighted with travel and loved good food and wine. The family and extended family holidayed in the US, Europe and some South American Countries. Gar particularly loved travel to his and Carol's 2nd home in La Jolla, California. He could finally go back to his beloved Pacific Ocean three or four times a year!

Gar is survived by his wife Carol Vaughan Willis, son Charles Gregory Willis and husband Jim Wilson, stepson Geoffrey Scott Vaughan, daughter-in law, Tiffany Lea Willis and grandson, Brayden James Willis. James Derek Willis, his son, was previously deceased in 2021.

Summarized from the Life Tributes Section of the Houston Chronicle on April 10, 2022.

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 can 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 Black & White Prices Shown – Color add 30% to prices below					Specific Page Color Ad Placement					
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.
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Event/Short Course Calendar Ad	\$100 – Monthly	An event ad posted within the HGS website calendar under the Events tab.
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APPLICATION TO BECOME A MEMBER OF THE HOUSTON GEOLOGICAL SOCIETY

Qualifications for Active Membership

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

Qualifications for Associate Membership (including students)

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

Apply online at www.hgs.org and click "Join HGS". Annual dues expire each June 30.

Annual dues are \$36; Emeritus members pay \$18; Students are free.

To the Executive Board: I hereby apply for membership in the Houston Geological Society and pledge to abide by its Constitution and Bylaws.

Full Name _____ Membership Type (choose one): Active Associate Student

Current Email (for digital Bulletin & email newsletter) _____

Phone _____

Preferred Address for HGS mail _____

Employer (required) _____ Job Title (**required**) _____

Will you volunteer? (Y/N) _____ Committee choice: _____

Active & Associate membership for one year (July 1st - June 30th) \$36.00 _____

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OPTIONAL Scholarship Contributions: Calvert/HGS Foundation-Undergraduate \$5.00 _____

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City _____ State _____ Postal Code _____

School (**required**) _____ Major (**required**) _____

Degree (**required**) _____ Year Graduated _____

School (*optional*) _____ Major (*optional*) _____

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Years Work Experience (**required**) _____

Please submit a brief statement regarding your work experience in the practice or application of earth science or an allied science.

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Houston Geological Society

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