

Volume 63, Number 10

HGS Bulletin

Houston Geological Society

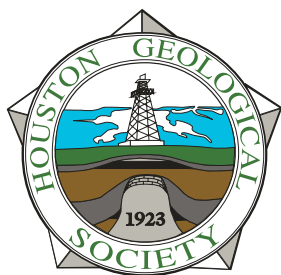
June 2021

**DRONE TECHNOLOGY
IN THE HOUSTON AREA**
PAGE 13



Board of Directors 2020–2021

President (P)	Jim Tucker	Occam Resources	301-807-9255	president@hgs.org	
President-Elect (PE)	Mike Erpenbeck	Upstream Advisors Group	832-418-0221	president.elect@hgs.org	
Vice President (VP)	Bryan Guzman	Premier Oilfield Group	832-503-4645	vice.president@hgs.org	
Secretary (S)	Dianna Phu	INTECSEA	281-236-3131	secretary@hgs.org	
Treasurer (T)	Brent Boyd	Retired	281-814-8383	treasurer@hgs.org	
Treasurer Elect (TE)	William Gough	In transition	713-446-0868	treasurer.elect@hgs.org	
Editor (E)	Ceri Davies	CGG	281-777-0683	editor@hgs.org	
Editor-Elect (EE)	Scott Sechrist	Acoustic Geoscience Consulting	281-638-1213	editor.elect@hgs.org	
Director 19-20 (D1)	Wayne Camp	OXY	832-314-4471	jcwc123@yahoo.com	
Director 20-22 (D2)	Barbara Hill	Schlumberger	315-706-4709	director_2@hgs.org	
Director 20-22 (D3)	Casey Langdon	Concho Resources	703-727-7893	director_3@hgs.org	
Director 19-20 (D4)	Bob Fryklund	IHS Markit	713-369-0137	director_4@hgs.org	
Committee	Chairperson	Phone	Email	Board Rep.	
AAPG House of Delegates	Cheryl Desforjes	713-816-9202	cheryldesforjes@hotmail.com		P
Academic Liaison	Paul Mann	713-743-3646	pmann@uh.edu		D2
Advertising	Bryan Guzman	832-503-4645	bryanguzman85@gmail.com		E
Africa Conference	Brian Horn	713-560-0772	brian.horn@hatterasenergy.com		PE
Applied Geoscience Conferences	VACANT				P
Subsurface Intelligence	Jason Simmons	832-573-2687	jason.simmons@bhge.com		P
Applied Geoscience Conferences - Geomechanics	Umesh Prasad	713-879-2529	Umesh.prasad@bhge.com		P
Arrangements	Bryan Guzman	832-503-4645	vice.president@hgs.org		VP
Awards	Mike Nieto	281-783-6130	michael.nieto@pofg.com		P
Ballot/Elections	John Jordan	713-594-5648	john.jordan.062255@gmail.com		S
Calvert Fund	Jeff Lund	713-253-7481	jeff.lund@corridoroilandgas.com		PE
Continuing Education	Thom Tucker	281-413-0833	century@flash.net		D1
Communications Committee	Dianna Phu	281-236-3131	hgs.socialmedia@gmail.com		P
	Rosemary Laidacker	713-805-9672	rmlgeo@gmail.com		PE
Earth Science Week	Sharon Choens	713-320-1792	Sharon.choens@sjcd.edu		D2
Educational Outreach	Steven Johansen	346-234-7032	geosjjohansen@gmail.com		D2
	Letha Slagle		drablavs@gmail.com		D2
Environmental & Eng. Geology	Matthew Cowan	713-777-0534	mrcowan1@hal-pc.org		VP
	Troy Meinen	713-962-5495	troy.meinen@erm.com		VP
Exhibits	Marcus Zinecker	469-693-1285	marcuspzinecker@gmail.com		D3
Field Trips	Constantin Platon	832-686-3231	constantin@oakgeosciences.com		D4
Finance	VACANT				T
Foundation Fund	Joe Lynch	346-333-9872	joelynchtx@gmail.com		PE
General Meetings	Bryan Guzman	832-503-4645	vice.president@hgs.org		VP
Golf Tournament	Elliot Wall	713-825-4599	elliott.wall@corelab.com		D4
	Ceri Davies	281-777-0683	ceri.davies@cgg.com		D4
Government Affairs and Texas Geoscience Council	Henry Wise	281-242-7190	hmwise@yahoo.com		D4
	Arlin Howles	281-753-9876	arlinhowles@yahoo.com		D4
Guest Night	Dave Orchard		dmorchard_geology@outlook.com		D4
HGS New Publications	William Rizer	503-852-3062	rizerwd@gmail.com		D1
International Explorationist	Steve Getz	713-304-8503	slgetz@outlook.com		VP
International Group Treasurer	VACANT				VP
Latin American Conference	Ceri Davies	281-777-0683	ceri.davies@cgg.com		P
Membership Growth	Gustavo Carpio	832-706-7619	gecarpio@gmail.com		S
Membership, New	Sharie Sartain	281-382-9855	smsartain1@comcast.net		S
Museum of Natural Science	Inda Immega	713-661-3494	immega@swbell.net		D2
	Janet Combes	281-463-1564	jmcombes@msn.com		D2
NeoGeos	James Cassanelli	203-305-1145	james_cassanelli@oxy.com		D3
Nominations	Cheryl Desforjes	713-816-9202	cheryldesforjes@hotmail.com		P
North American Explorationist	Mark Hamzat, Chair	832-540-3216	mark@prosperoog.com		VP
	John Bishop, Co-Chair	713-819-0891	johnwbishop@outlook.com		VP
Northsiders	Ian McGlynn	713-471-0576	ian.mcglynn@bhge.com		VP
	Jeremy Andrews	713-591-2841	jeremy.andrews@exxonmobil.com		VP
Office Management	Jim Tucker	301-807-9255	president2019-2020@hgs.org		PE
Scholarship Night	Charles Sternbach	832-567-7333	carbodude@gmail.com		P
Outcrop Family Campout	VACANT				PE
Science and Engineering Fair	Mike Erpenbeck	832-418-0221	mike.erpenbeck@hotmail.com		D2
Shrimp & Crawfish Boil	Michael Salazar	713-410-4391	michael.salazar@pofg.com		D4
Clay Shoot	Howard Wood	832-277-0141	hw@coregeologic.com		D4
Social Media	Dianna Phu	281-236-3131	hgs.socialmedia@gmail.com		D3
	Lauren Robinson	317-402-6482	lseidman5.robinson@gmail.com		D3
Tennis Tournament	Constantin Platon	832-686-3231	constantin@oakgeosciences.com		D4
Vendor's Corner	HGS Office	713-463-9476	office@hgs.org		TE
Video Committee	Linda Sternbach	832-567-7337	linda.sternbach@gmail.com		D3
Web Management	Ollie/Deborah Costello	713-618-2491	opcstello@gmail.com		EE
HGS Executive Office Director	Andrea Peoples	713-463-9476	andrea@hgs.org		
HGS Admin. Assistant/Web Content Manager	Alyssa Cushing	713-463-9476	acushing@hgs.org		



The Bulletin

Houston Geological Society

Volume 63, Number 10

June 2021

In Every Issue

- 3 **From the President**
by Jim Tucker
- 5 **From the Editor**
by Ceri Davies
- 14 **GeoEvents Calendar**
- 23 **Author Instructions**
- 24 **HGS Membership Application**
- 25 **New Members**
- 25 **Professional Directory**

Houston Geological Society OFFICERS

Jim Tucker *President*
Mike Erpenbeck *President-elect*
Bryan Guzman *Vice President*
Dianna Phu *Secretary*
Brent Boyd *Treasurer*
William Gough *Treasurer-elect*
Ceri Davies *Editor*
Scott Sechrist *Editor-elect*

DIRECTORS

Wayne Camp
Barbara Hill
Casey Langdon
Bob Fryklund

HGS OFFICE STAFF

Andrea Peoples *Executive Office Director*
Alyssa Cushing *Admin. Assistant/*
Web Content Manager
Jim Tucker *Office Management*

EDITORIAL BOARD

Ceri Davies *Editor*
Scott Sechrist *Editor-elect*
Lisa Krueger *Design Editor*

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

Technical Meetings

- 13 **HGS Environmental & Engineering Virtual Meeting**
Drone Technology in the Houston Area

Other Features

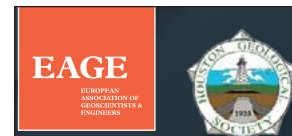
- 4 **Africa E&P Conference**
- 6 **Meet the 2021-2022 HGS Executive Board**
- 7 **Third EAGE/HGS Conference on Latin America**
- 11 **Coronavirus (COVID-19) Policy Statement**
- 16 **2021 AAPG Southwest Section Convention**
- 18 **South Texas Geological Seminar & Field Trip**
Overview of the Austin Chalk
- 19 **Houston Geological Society Volunteer Opportunities**
- 20 **HGS Crawfish Boil and Shrimp Peel: May 21, 2021**
- 22 **Remembrance**
Frederic August Tietz

Renew Your Membership

page 2



page 4



page 7

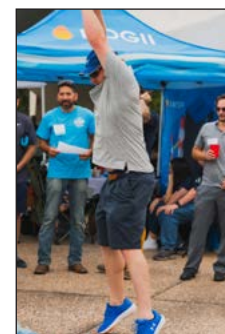


page 16



Highway 90, west of Langtry, Texas

page 18

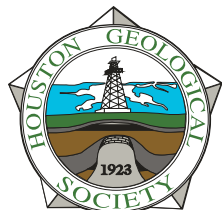


page 20

- **About the Cover:** Sampling for paleomagnetic analysis in the Shandong province, China. Core Orientator used to capture core orientation and inclination.
- Photo supplied by Ceri Davies.

It's Time to Renew Your HGS Membership

Your membership expires June 30, 2021



Annual dues are only \$30.00

Emeritus members pay \$15.00 • Full-time students \$10.00

**Check your email for a reminder notice and
renew online at www.hgs.org**

Please complete and return this portion with your remittance.

Include your **CURRENT EMAIL** and **UPDATE ALL** contact information.

Please email completed application to office@hgs.org and smsartain1@comcast.net

Name: _____

Membership type: ____Active____Emeritus____Associate____Student

Mailing / Billing Address: _____
(required)

Email Address: _____
(required)

Current Employer _____
(required/if unemployed mark 'in transition')

Job Title _____

Graduating University _____
(required)

☐ I do not wish to disclose

Year Graduated _____

Degree Name & (BS MS or PH.D) _____
(required)

Work Phone: _____ Mobile Phone: _____

Would you like to volunteer? ____ (Y/N) Committees of Interest: _____

Annual dues \$30.00 Active or Associate: _____

Annual dues \$15.00 Emeritus: _____

\$0.00 Student: _____

\$0.00 Digital Bulletin: _____

\$150.00 Annual Hard Copy Bulletin Subscription: _____

OPTIONAL DONATION: Scholarship Contributions Calvert & HGS Foundation: **\$5.00**

Additional Donation: _____

Approved Total Remittance from Member: _____

Payment:

Check # _____ Credit card: V MC AMEX Discover Expiration: _____ (mm/yy)

Credit Card# _____ CVV code (req'd): _____

The CVV verification code is a 3 or 4-digit number printed on your card.

Signature: _____ Date: _____

The Calvert Memorial Fund is a scholarship program for U.S. students enrolled in earth science graduate programs in our region. It is managed by a 5 member HGS board of trustees that provides annual support for graduate studies.

The HGS Foundation Fund is a scholarship program designed specifically for undergraduate geoscience students from area universities.



Jim Tucker
president@hgs.org

Quite a Year

This has been a challenging year for your society, as it has been for all of us. We will all remember pandemic times without fondness. It has been challenging for the Houston Geological Society, but we have continued with most of the same programs in modified ways. Many of these changes would have happened eventually, but were forced on us. It is easy in volunteer organizations to always do things the ways that have proven successful in the past, and delay changes, but we had few choices, and I think it was good for our future.

We discontinued in-person technical meetings over a year ago for prudent health reasons. There were adjustments for all of us, but fortunately we had been preparing for remote committee and Board meetings for a few years, so we had that experience to build on. For those not familiar with the remote format, we had chances to practice, attending Field Trip Fridays and the Continuing Education course in the summer. Last week we had our first in-person event, the Shrimp Peel and Crawfish Boil, and a great safe time was had by approximately 200 colleagues outdoors in cloudy and only rarely wet afternoon. Thanks to the committee and our sponsors, and a high bar is set for next year.

Also during last summer, the committee planning for the annual Africa Conference that HGS hosts biennially in alternation with the PESGB worked to design how a virtual technical conference could work. Travel was restricted and likely not to change by the autumn, so virtual was required, and a format of 2-3 hours each Thursday morning in October was decided, so that colleagues in Europe and Africa could attend at convenient times. This worked better than we hoped, and also allowed student posters presented by students in African universities, a first. Information on this September's PESGB-HGS Africa Conference is page 4 in this *Bulletin*.

We were able to host a full program of technical presentations in evenings and midday, including live questions and answers after each talk. Our office staff facilitated these meetings, and everything went smoothly. I hope you were able to catch a few of these, and if not, reviewed the recordings on our YouTube channel. We also had two Continuing Education seminars, in addition to the one during the summer.

We restarted the Employment Committee this past year. Initial activity centered on the semi-annual SPE-GCS midcareer hiring event, which HGS has endorsed and participated in for several years, most recently with over thirty local sister organizations. I feel it is a professional obligation to assist colleagues to stay employed and as busy as they wish in their careers, and this is an excellent event for all of us. In the past year, the AAPG discontinued their operation of the Student Expo after almost two decades. Fortunately, several of the volunteers most involved in past Expos are HGS Members here in Houston, and we are planning on the next virtual edition of Expo in September. It is vital that we encourage our early-career colleagues coming out of their university training, and since many will work in Houston, it is natural that they know HGS and become Members at the start of their careers. Colleagues interested in either of these events are welcome as volunteers.

The past several years have been challenging for Society finances, but we should finish the year with close to a balanced budget. It is easy to add worthy programs and activities over the years, but periodically it is necessary to separate the necessary from the merely nice. Our overhead is very low for a society our size, but we continually search for economies that do not hamper necessary activities. I do not expect the periodic profit share from the AAPG Annual Meetings to return anytime soon, if ever.

Earlier this week, AAPG Members received notice that the Association is in discussions with the SPE on greater cooperation and possibly a merger, if it is determined that that makes sense for all involved. The HGS is an Affiliated Society of the AAPG, but that should not change HGS significantly in any new organization, since our direction is clearly geoscience. It will be interesting to see how it all evolves.

The Houston Geological Society was established in 1923, so as we approach our centennial and the exciting activities related to that, I think we have some great years coming up. ■

Volunteer for something this month. Be safe.



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.

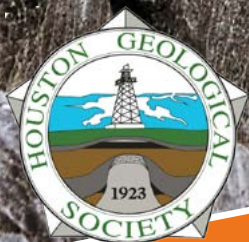
Alongside submissions on the latest activities in exploration, lessons learnt from past exploration activities, field development, reservoir management and enabling technologies; we also seek abstract submissions on geothermal activity, carbon storage and related subjects.

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

Assessing the Effect of Mineral Alteration on Palaeointensities Derived from Volcanic Rocks of Cretaceous Age

The appearance of superchrons within the palaeomagnetic record has aroused considerable interest amongst those seeking to understand the processes driving the geomagnetic field. Efforts to understand dynamo processes underlying superchrons require a fuller understanding of the magnitude of the Earth's magnetic field during these periods. This has drawn focus on the Cretaceous Normal Superchron, 83 – 121 Ma, a period of almost 40 million years when the Earth's magnetic field remained in a fixed, normal polarity aligned close to the Earth's rotation axis, as it is today.

Difficulties arise when using the magnetisation of rocks as a proxy for the ancient magnetic field; non ideal behaviour of a material combined with in situ and laboratory alteration and oxidation can result in unreliable estimates of both field strength and direction. This study primarily focuses on the effect of mineral alteration on rocks of Cretaceous age, the resulting changes in magnetic characteristics and their effects on palaeointensities.

For palaeointensity investigations, it is paramount the sample retains an original thermal magnetic remanence, a TRM, but it can be difficult to assess whether this is the case. By applying palaeointensity methods to Cretaceous basalt, whilst simultaneously carrying out rock magnetic and microscopy analysis, I assess the effect of mineral alteration on palaeointensities derived from volcanic rocks of Cretaceous age.

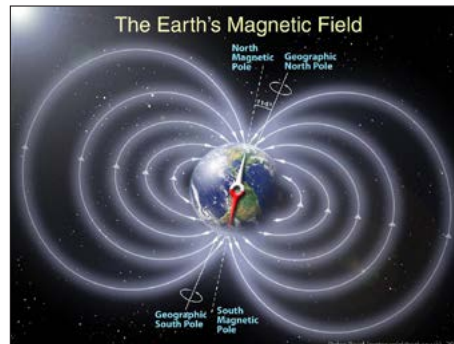
For anyone interested in the outcomes of this work or a discussion on the Earth's magnetic field – please feel to get in touch, it is a subject I hold close to my heart.

The Houston Geological Society is a great organization and I appreciate your company this year with the *Bulletin*. I wish Scott Sechrist the best with taking over as Editor and I'm sure he'll have many a story to share with us.

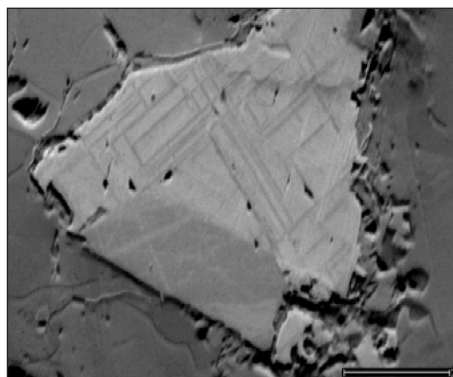
Keep well, see you soon,
Ceri



Sampling Lower Cretaceous basalt Unit, Shandong Province, China.



Credit: Peter Reid, The University of Edinburgh.



SEM image of deuteritic oxidation of titanomagnetite crystal resulting in ilmenite lamellae. Crystal size approx. 50 microns.



Meet the 2021–2022 HGS Executive Board

President



Mike Erpenbeck

President-Elect



Walter Light

Vice President



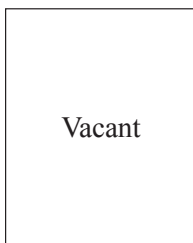
Patricia Walker

Treasurer



William Gough

Treasurer-Elect



Vacant

Secretary



Lucia Torrado

Directors



Barbara Hill



Casey Langdon



Lanette Marcha



Dianna Phu

Editor



Scott Sechrist

Editor-Elect



Ken Theis

EAGE

EUROPEAN
ASSOCIATION OF
GEOSCIENTISTS &
ENGINEERS



THIRD EAGE/HGS CONFERENCE ON LATIN AMERICA

leading the global future supply growth

SESSION OVERVIEW

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

www.eage.org

Welcome to

the Third EAGE/HGS Conference on Latin America



Latin America – An Exploration Overview

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

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

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

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

Frontier Areas; New Plays and Missed Opportunities

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

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

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

Greater Caribbean; Non-Guyana and Suriname

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

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

Greater Caribbean; Guyana and Suriname

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

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

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

South Atlantic; Non-Brazil

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

Industry activity has recently shifted south to the countries of Argentina and Uruguay with successful bid rounds held in each country in 2018 and 2019. Both countries saw an increase in interest in Frontier Offshore blocks with awards going to supermajor partnerships in Argentina (Shell, XOM, Total) and independents operators in both countries (BPC in Uruguay, for example). Recent seismic acquisition and reprocessing of data have expanded interest in new play ideas, such as 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 CO₂ 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+ mmbbl 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.



CONTACT US FOR MORE INFORMATION

AMERICAS@EAGE.ORG • +57 310 8610709

HGSLATINCONFERENCE2021@GMAIL.COM • + 1 713 463 9476

EAGE

EUROPEAN
ASSOCIATION OF
GEOSCIENTISTS &
ENGINEERS

HEAD OFFICE

+31 88 995 5055
EAGE@EAGE.ORG
WWW.EAGE.ORG

RUSSIA & CIS OFFICE

+7 495 640 2008
MOSCOW@EAGE.ORG
WWW.EAGE.RU

MIDDLE EAST OFFICE

+971 4 369 3897
MIDDLE_EAST@EAGE.ORG
WWW.EAGE.ORG

ASIA PACIFIC OFFICE

+60 3 272 201 40
ASIAPACIFIC@EAGE.ORG
WWW.EAGE.ORG

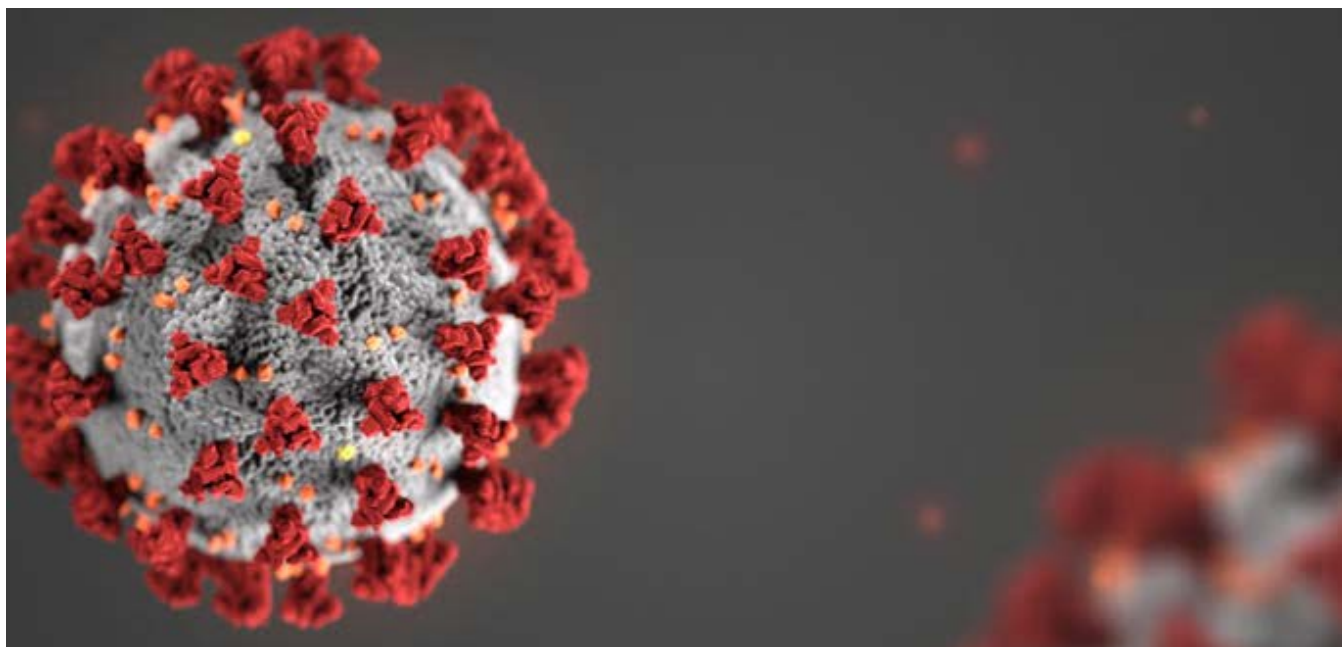
LATIN AMERICA OFFICE

+57 3108610709
AMERICAS@EAGE.ORG
WWW.EAGE.ORG

LATIN AMERICA OFFICE • BOGOTA, COLOMBIA • +57 310 8610709 • AMERICAS@EAGE.ORG • WWW.EAGE.ORG



join us on social media!



Coronavirus (COVID-19) Policy Statement: Updated Tuesday, June 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 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

DOMESTIC &
INTERNATIONAL



BIOSTRATIGRAPHY

**ANYTIME.
ANYWHERE.
ANY FOSSIL.**

Complete paleo services

*Largest single-source GoM
database*

Custom projects & mapping

Multiple fossil disciplines



**504-488-3711
PALEODATA.COM**

NEW ORLEANS, LA



THUNDER EXPLORATION, INC.

Celebrating 30+ years of prospect generation and exploration in the following South Texas plays and trends.

Frio	San Miguel	Edwards
Jackson	Austin Chalk	Pearsall
Yegua	Eagle Ford	Sligo
Wilcox	Buda	Cotton Valley
Olmos	Georgetown	Smackover

Thunder is currently seeking non-operated working interest participation in projects and prospects.

Contact Walter S. Light Jr.
President/Geologist

713.823.8288
EMAIL: wthunderx@aol.com

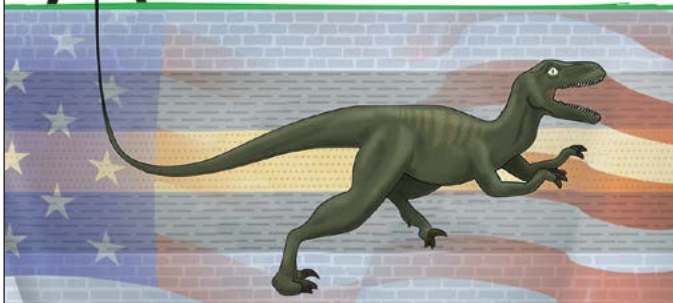


Maximizing **production**
while **minimizing cost**

Raptor Consulting can help you improve
efficiency on your next drilling project!



- Well Site Geology
- Geochemical Analysis
- Geosteering
- Performance Analytics



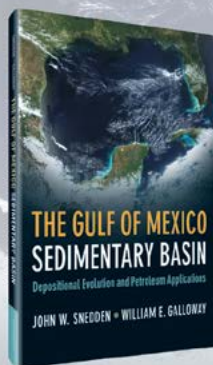
RaptorConsulting.com

THE GULF OF MEXICO SEDIMENTARY BASIN

Depositional Evolution and Petroleum Applications

JOHN W. SNEDDEN
WILLIAM E. GALLOWAY

HARDBACK ~~\$94.99~~ \$75.99*
ISBN: 9781108419024



A comprehensive and richly
illustrated overview of the Gulf
of Mexico Basin, including
its reservoirs, source rocks,
tectonics and evolution.

***20% DISCOUNT FOR HGS MEMBERS**
USE CODE SNEDDENHGS AT CHECKOUT ON WWW.CAMBRIDGE.ORG

 **CAMBRIDGE**
UNIVERSITY PRESS

Wednesday, June 9, 2021

Virtual Meeting via Zoom

7:00–9:00 p.m.

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

<https://www.hgs.org/civicrm/event/info?id=2253>

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

Event contact: Matthew Cowan – mrcowan1@hal-pc.org

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

HGS Environmental & Engineering Virtual Meeting

Jessica Sheldon
Rice University

Drone Technology in the Houston Area

Drone technology and the high resolution datasets it enables stand to revolutionize our understanding of the Earth's surface. This research is Houston specific, and studies how drones can be used to systematically collect photogrammetric data to detect environmental changes, and how that data is valuable for flood planning purposes.

This data is the culmination of three years of research. Prior to this year, the focus has been learning to fly the drone, learning the image processing Pix4D and ArcMap 10.5, and creating a workflow for accurate image collection processing. This study has collected three separate datasets of the study area at Buffalo Bayou using a DJI Phantom 4 Pro drone. This data was then processed and modeled in Pix4D to create digital elevation models (DEMs). The DEMs were calibrated and analyzed in GIS, and compared to the publicly available 2018 LIDAR data. Our research catalogues high resolution change over time of our study area, and documents the process of how drones can be used to systematically observe change over time. This data presents three scenarios with corresponding case studies for how drone photogrammetry can be used to aid flood risk assessment. ■

Biographical Sketch



JESSICA SHELDON graduated in May from Rice University with a degree Environmental Science with an Earth Science concentration. As a Houston native, she is passionate about water management issues and flood mitigation. Her research with Dr. Kirsten Siebach works to gain a better understanding of change over time on Buffalo Bayou and how drones can be used to monitor this change and aid in flood risk assesment. This summer, she is interning with WSP in Austin, TX as a Hydrogeologist and will begin a Master's of Environmental Management in August at Duke University.



PETEX

23-25 NOVEMBER 2021

**EARLY BIRD TICKETS
NOW AVAILABLE!**

**PRICES START FROM ONLY
£145 + VAT**

petex.pesgb.org.uk
#PETEX2021

BECOME A PETEX 2021 EXHIBITOR OR SPONSOR!
Visit petex.pesgb.org.uk to learn more

June 2021

Sunday

Monday

Tuesday

Wednesday



	<div>Don't wait, make your reservations online at hgs.org</div>	1	2
6 HGS Grand Canyon Field Trip 2021	7	8 HGS Board Meeting 6 p.m.	9 HGS Environmental and Engineering Dinner Virtual Zoom Meeting "HGS Virtual E&E - Drone Technology in the Houston Area", Jessica Sheldon Page 13
13	14	15	16
20	21	22	23
27 2021 SWS AAPG Annual Convention Page 16	28	29	30

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



GEOEVENTS

Thursday

Friday

Saturday

3	4	5
10	11	12
17	18	19
24	25	26
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.		2021 SWS AAPG Annual Convention <i>Page 16</i>
		Virtual Pre-registered Prices: Virtual Meetings members \$10/15 Emeritus/Honorary members..... \$10/15 Student members \$5 Nonmembers \$30/35



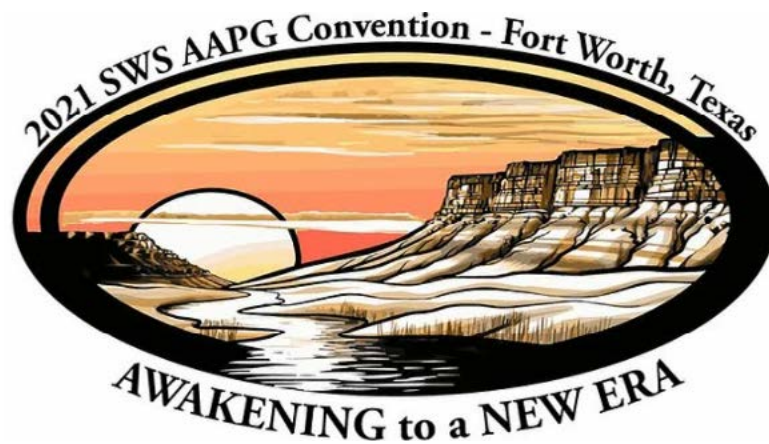
June 26-30, 2021
 2021 SWS AAPG Annual Convention
Page 16

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

October 2021
 Third EAGE/HGS Conference on Latin America
Page 7

November 5-6, 2021
 South Texas Geological Society Field Trip
Page 18

RENEW
YOUR HGS MEMBERSHIP
HGS.ORG



2021 AAPG Southwest Section Convention

Hosted by the Fort Worth Geological Society

June 26-30, 2021

Location: The Radisson – Fossil Creek, 2540 Meacham Blvd, Fort Worth, TX 76106, USA

This Convention features both In-Person AND Virtual options and prices.

More info – <https://www.fwgs.org/events-1/2021-sws-aapg-annual-convention>

Register here – <https://www.fwgs.org/events-1/2021-sws-aapg-annual-convention>

Contact – Jessica Wold, AAPG SWS Section President. jwold@blackbeardoperating.com

Technical Program

Tuesday June 29th Morning Technical Presentations

Special Session: STARR Studies of the Eastern Shelf and Fort Worth Basin

Richard Denne, TCU, Opening Remarks

Reese Parker, Ameridev, Key Note Address – Key Trends of the Roaring 20's

Lorena Moscardelli, UT-BEG, State of Texas Advanced Resource Recovery Program (STARR) and Its Role Supporting Knowledge Sharing and Creation in the Permian Basin, Eastern Shelf and Fort Worth Basin

Peter Flaig, UT-BEG, Examples of Depositional Systems of the Strawn Group in the Fort Worth Basin and Eastern Shelf of the Permian Basin

Robert Reed, UT-BEG, Variability of Quartz Types in the Upper Mississippian Barnett Shale, Fort Worth Basin, Wise County, Texas: Implications for Rock Brittleness

Andrew Roberts, UT-BEG, Controls on facies variability and distribution during the Pennsylvanian glacial period from the Lower Strawn Group, Fort Worth Basin, Texas

Osareni Ogiesoba, UT-BEG, Simultaneous Seismic Inversion Study of the Northern Part of the Eastern Shelf, King County, Central Texas

June 29th Afternoon Technical Presentations

Permian Basin Session

Ian Duncan, UT-BEG, Geology and reservoir properties of the Residual Oil Zone (ROZ) of the San Andres Seminole Unit, West Texas

Dennis Browning, Panther City Exploration, Hiding in Plain Sight: Devonian Production in the Block A-50 Field, Andrews County, Texas

Shuvajit Bhattacharya, UT-BEG, Building Geology-informed Deep Learning Models for better Predicting Elastic Properties of the Spraberry-Wolfcamp in the Midland Basin

Linda Sternbach, Guadalupe National Park/Delaware Basin Virtual Field Trip #1

Dwayne Purvis, Consultant, Insights to Log Analysis of the Southern Delaware Mountain Group

Jinyu Zhang, UT-BEG, Lithofacies segmentation in cores of Wilcox Group (Gulf of Mexico) and Spraberry Formation (Permian Basin) using U-net based convolutional neural networks

Wednesday June 30th Morning Technical Presentations

Special Session: West Texas Permian Super Basin

Bill Fairhurst, Riverford Exploration, West Texas (Permian) Super Basin, USA: Super Basin concepts, introduction, resource exploration, and development history

Tom Ewing, Frontera Exploration Consultants, West Texas (Permian) Super Basin, USA: Tectonics and Depositional History

Andy Pepper, This is Petroleum Systems, West Texas (Permian) Super Basin, USA: source rocks and petroleum systems

Robert Lindsay, Lindsay Consulting, West Texas (Permian) Super Basin, USA: Leonardian-Guadalupian Traditional Reservoirs

Bill Fairhurst, Riverford Exploration, West Texas (Permian) Super Basin, USA: Unconventional Resources and Future Potential

June 30 Afternoon Technical Presentations

Permian, East Texas, and Beyond Session

Junwen Peng, UT-BEG, Quartz types in the Upper Pennsylvanian organic-rich Cline Shale (Wolfcamp D), Midland Basin, Texas

Fritz Palacios, UT-BEG, An Updated Eastern Shelf-Midland Basin Stratigraphic Framework across the Southern Greater Permian Basin: Implications for the Distribution of Virgilian and Wolfcampian Reservoirs

Andrew Sneddon, MCWL Paladin, Advanced Wellsite Geochemistry for Light Hydrocarbon Analysis in Unconventional Resources

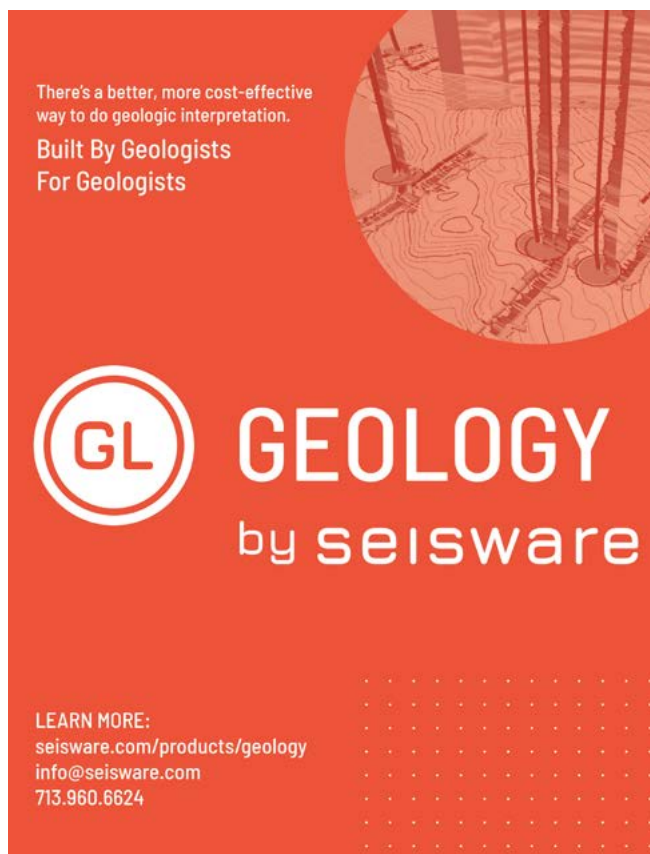
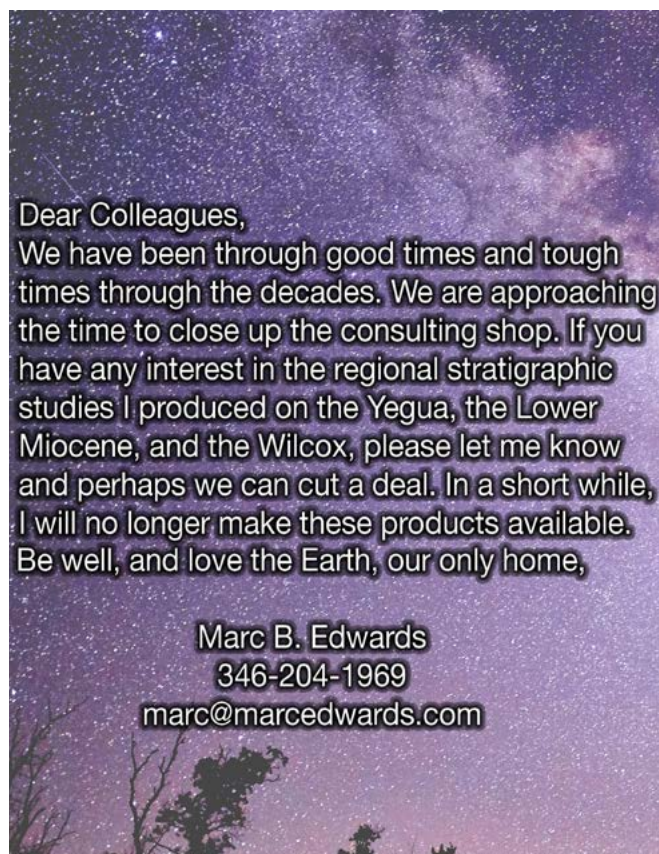
Kelly Hattori, UT-BEG, Facies and sequence stratigraphy of the Early Cretaceous Pettet Formation, Rusk County, East Texas

Linda Sternbach, Guadalupe National Park/Delaware Basin Virtual Field Trip #2

Heather Anderson, The Great Crew Change: Preparing for the Energy Transition & Petroleum Industry of the Future by Transferring and Preserving Institutional Knowledge

Tom Johnston, ShearFrac, Fracture Type Identification for Real-Time Pumping Parameters Optimization to Maximize Hydraulic Fracturing Surface Area for Production

Xuewei Ning, UT-Arlington, A new model for simulating imbibition process of wetting-phase fluid in matrix-fracture dual connectivity system





South Texas Geological Society Seminar & Field Trip

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



Seminar Lecturer: Jeffrey Dravis

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

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

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

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

Friday, November 5th, 2021

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

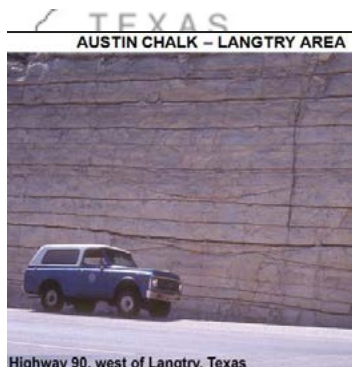
Saturday, November 6th, 2021

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

\$380 per person (1st 5 students \$190)

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

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

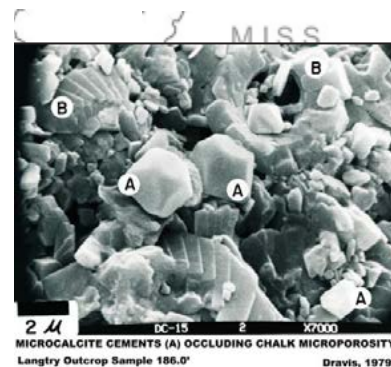


sponsored by:
MILLENNIUM
PETROCAPITAL CORPORATION

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



Houston Geological Society

Volunteer Opportunities

Dear Future HGS Volunteer,

We would like to inform you of all the volunteer opportunities at the Houston Geological Society. The HGS will be 100 years old in 2023 and having great volunteers is what has made us the largest and oldest Geological Society in America today. We need you keep us moving forward!

If you are interested in volunteering for any of the committees or conferences, please check them out on our website at www.hgs.org and call the office. We will connect you with the Chairman of that committee. Thank you for your volunteering consideration and we hope to see you soon.

Conferences

HGS/EAGE Latin American Conference – November 2021

Applied Geosciences Conference (Not scheduled at this time)

Mudrocks Conference happens every year in March. The planning committee is made up of over 50+ industry professionals from all over the city. Planning for the conference begins in May of every year and goes until the conference date. Volunteers consist of Session Chairs, Graphics, Sponsorship, Marketing, Logistics, Core program, Student Poster Program, etc.

Geomechanics Conference happens in November every-other year. The planning committee is made up of over 30+ industry professionals from all over the city. Planning for the conference begins in January the year of the event and goes until the conference date. Volunteers consist of Session Chairs, Graphics, Sponsorship, Marketing, Logistics, Student Poster Program, etc.

Africa E&P Conference happens in September every-other year. The planning committee is made up of over 30+ industry professionals from all over the city. Planning for the conference begins in September one year prior to the event goes until the conference date. Volunteers consist of Session Chairs, Graphics, Sponsorship, Marketing, Logistics, Student Poster Program, Seismic Showcase, Data Wall construction, etc.

Committees

You can find more information about these committees and what they do on our website.

AAPG House of Delegates	Educational Outreach	Membership, New
Academic Liaison	Environmental & Engineering Geology	Museum of Natural Science
Advertising	Exhibits	NeoGeos
Africa Conference	Field Trips	Nominations
Applied Geoscience Conferences – Mudrocks	Finance	North American Explorationists
Applied Geoscience Conferences – Geomechanics	Foundation Fund	Northsiders
Arrangements	General Meetings	Office Management
Awards	Golf Tournament	Science and Engineering Fair
Ballot/Elections	Government Affairs	Shrimp & Crawfish Boil
Continuing Education	Guest Night	Skeet Shoot
Communications Committee	Pete Emmet	Social Media
Directory Committee	HGS New Publications	Tennis Tournament
Earth Science Week	International Explorationists	Vendor's Corner
	Scholarship Night	Video Committee
	Membership Growth	Web Management

HGS Crawfish Boil and Shrimp Peel: May 21, 2021



I want to take moment and thank all of our sponsors, attendees and volunteers for a magnificent Crawfish Boil and Shrimp Peel. We were so fortunate the rain held off for us. We have 240+ people attend, great music, exceptional food and the best part was seeing all of you in person.

I would like to thanks all my sponsors for the support, 11 Below Brewing Company for the beer, Bule Oxford Media for the signs and photos and Chris Cuellar for being our DJ once again.

I look forward to many more HGS events.

Sincerely,
Andrea Peoples
HGS Office Director



Andrea Peoples and granddaughter



HOUSTON
GEOLOGICAL
SOCIETY

Shrimp Peel & Crawfish Boil Sponsors

On behalf of the Houston Geological Society, we would like to thank our sponsors for their generous donations and continued support! Your efforts and contributions are greatly appreciated!

Friday, May 21, 2021
Bear Creek Pioneers Park,
Pavilion 6

Visit Us www.hgs.org

Shrimp
Sponsors
\$1,500



Crawfish Sponsors
\$1,500



Beer Sponsors
\$1,000



Platinum Level
\$1,000



Gold Level
\$750



Silver Level
\$500



Bronze Level
\$250





Jim Tucker



Howard Wood, Ryan Jasper – High Striker Winner, Mike Salazar



High Striker Winner Ryan Jasper



Happy group



Tollef Winslow



Crawfish eater



ROGII team



Eddie Yao, Michael Nieto



Happy group



Crawfish eater



Keith Peoples



Oil 2 Frac



Group networking

Remembrance

FREDERIC AUGUST TIETZ

1931 – 2021



FREDERIC AUGUST TIETZ “crossed the bar” on May 5, 2021. He was born in Chicago, Illinois on March 24, 1931, the younger of two sons born to William J. Tietz, Sr. and Irma Neuman Tietz. Fred was raised in the bucolic surroundings of Hinsdale, IL where he attended Hinsdale High, graduated in the class of 1949. Fred matriculated at the University of Colorado, Boulder, receiving his BA and MS in geology.

After graduation, Fred joined Lion Oil Co. as a trainee geologist in Casper, WY. He followed the oil path through the Rocky Mountains with Lion Oil Co. and its successor, Monsanto Oil Company, ultimately becoming President. Following the sale of Monsanto to BHP Petroleum, Fred and Janet moved to Melbourne, Australia and subsequently London, England before ultimately settling in Houston. His greatest professional thrills were exploration successes in the North Sea, offshore Western Australia, deep water Gulf of Mexico, and complex deep wells in Wyoming. He was an emeritus member of the American Association of Petroleum Geologists and the Houston Geological Society.

In Boulder, Colorado, he met and married the light of his life, Janet Tyler Grove of South Orange, New Jersey. Fred and Janet visited all seven continents while pursuing worldwide oil and gas exploration opportunities. They remained avid travelers in Fred’s retirement, a passion Fred imparted to his children and grandchildren. When not traveling the world with family, Fred spent his summers at Chautauqua in Boulder. Fred is predeceased by Janet and is survived by one daughter, two sons and eight grandchildren.

Summarized from Life Tributes, Houston Chronicle May 8, 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	
Vendor Corner	\$1200 – 12 Months	
	\$250	Company logo, company website, and company description will be highlighted on HGS Calendar website event. This is an opportunity to display company wares, gain personnel exposure and hand out product information at HGS dinner meetings.
	*4 Pack option with 1 FREE bonus event for \$1000.00 available. Send request to vendorcorner@hgs.org .	
Event/Short Course Calendar Ad	\$100 – Monthly	An event ad posted within the HGS website calendar under the Events tab.
Bundle & Save!	<ul style="list-style-type: none"> • 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: _____

Signature _____ Date _____

Professional Directory

Available for Consulting in México or Other Countries

Victor H. Abadie III
Consulting Geologist

México: Consultant to Pemex Exploration and
Review Exploration Portfolio

Colombia: New Ventures Exploration; Sell Prospects
USA: Prospect Evaluation, Leasing, Buy Working Interests

650.201.0528 • vic@montara.com
Post Office Box 81/1390 Main Street • Montara CA 94037-0081
AAPG/DPA, SIPES, Calif. Reg. Geologist, Tex Reg. Geologist

Paul W. Britt
Geologist, P.G., C.P.G.

Houston, Texas

Geological & Geophysical Consulting
Petra Consulting and Training
Kingdom Seismic Interpretation

713-651-0004
www.petrauser.com

pbritt@texplore.com
www.texplore.com



METAROCK
LABORATORIES

2703 Highway 6 S, Suite 280A
Houston, TX 77082
Tel 713-664-7916
Cell 832-287-8320
Fax 832-415-0358
zach@metarocklab.com
www.metarocklab.com

Zach Arasteh
Business Manager



THUNDER EXPLORATION, INC.

WALTER S. LIGHT, JR.
PRESIDENT
PETROLEUM GEOLOGIST

P.O. BOX 541674
HOUSTON, TEXAS
77254-1674

US MOBILE: +713 823 8288
UK MOBILE: +44 (0)794 755 1693
EMAIL: wthunderx@aol.com

Where is your
Business Card?
\$160 per 10 Issues
713-463-9476



Powell Xploration
LLC

Integrated Prospect Generation, Regional Mapping,
Sequence Stratigraphy, Property Evaluations
US Onshore and Gulf of Mexico

Tim Powell
Timp854@gmail.com
832-217-5650

3429 Tahoma Trail
College Station, Tx 77845

Where is your
Business Card?
\$160 per 10 Issues
713-463-9476

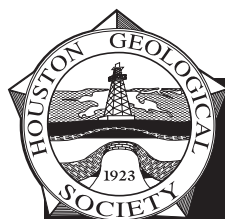
**RENEW YOUR
HGS MEMBERSHIP
WWW.HGS.ORG**

Brochure • Newsletter
Ad • Logo • Catalog
Website Design



Lisa Krueger Design
Design and Art Direction for Print and Web

713.962.9333



HGS Welcomes New Members

New Members Effective May 2021

ACTIVE MEMBERS

Mauro Lo Cascio

Paul Riegler

Angela Schwartz

EMERITUS MEMBER

Leo Snowman

STUDENT MEMBERS

Gerardo Canedo

Carlos Gonzalez

Leiser Silva

Sierra Spears

Welcome New Members

HGS Welcomes New Members



HOUSTON GEOLOGICAL SOCIETY

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