

# HGS Bulletin

Volume 59, Number 10

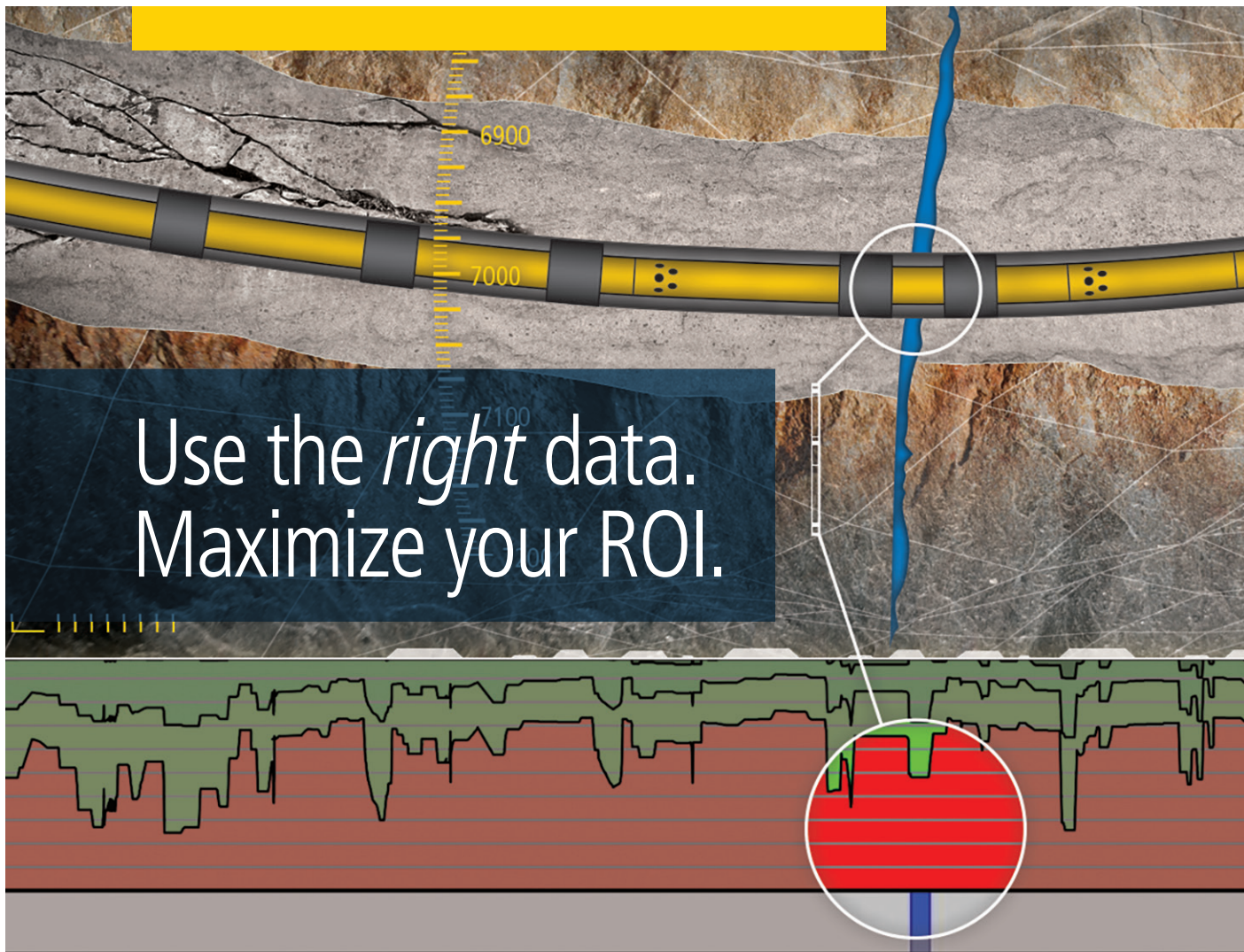
Houston Geological Society

June 2017

**HGS GUEST NIGHT  
BIG BONES IN BIG BEND**







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Volume 59, Number 10

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

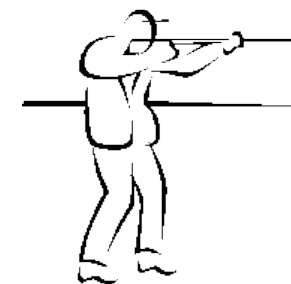
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**About the Cover:** The pterodactyl on the June cover is *Quetzalcoatlus northropi*, discovered in Big Bend by Douglas A Lawson in 1971. The cover artist is Julius Csotonyi. More about Big Bend at <http://fossildiscoveryexhibit.com/>.



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Photo by Pam LeBlanc

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THURSDAY 31 AUGUST 2017	
08.30	REGISTRATION & COFFEE
09.20	WELCOME & INTRODUCTION
SESSION 1: NEW INSIGHTS INTO YOUNG RIFTS Session Chairs: Jerry Jarvis	
09.30	KEYNOTE: Contrasting fault and rift basin evolution in the East Africa Rift: Role of magmatism and magmatic volatile release <i>James Muirhead, University of Syracuse</i>
09.55	Continental breakup, the final stretch: seismic reflection and borehole evidence from the Danakil Depression, Ethiopia <i>Craig Magee, Imperial College London</i>
10.20	A holistic reappraisal of the geological evolution of the Tertiary East African Rift System, Kenya; understanding the controls on basin evolution and petroleum play development <i>Scott Thackrey, Maersk</i>
10.45	REFRESHMENTS & POSTERS
SESSION 2: NEW INSIGHTS ON THE EVOLUTION OF THE DISTAL DOMAIN Session Chairs: Helen Doran	
11.15	KEYNOTE: Applying hyperextended models to rifted margins: The lessons learned from the African Margins <i>Gianetro Manatschal, Université de Strasbourg</i>
11.40	Extending the Gabon preSalt play towards the Continent-Ocean Transition in the South Gabon basin; defining a structural sweetspot developed by the interaction of a major transfer zone with synrift faulting <i>Myron Thomas, Shell</i>
12.05	New Evidence Supports Presence of Continental Crust beneath the Comoros <i>Phil Roach, Bahari Resources</i>
12.30	LUNCH & POSTERS
SESSION 3: NEW TECTONIC MODELS AND PLAYS IN WEST AFRICA Session Chairs: Matt Warner	
13.45	The occurrence of source rocks and their maturity history over oceanic crust along the West African margin <i>Steve Lawrence, Geoex</i>
14.10	Exploration in the Deep Water Gulf of Guinea off eastern São Tomé and Príncipe Islands, a High Thermal Regime Setting <i>Christian Niño-Guiza, GALP</i>
14.35	Insights into the Deepwater of Côte d'Ivoire (Equatorial African Margin) <i>Nicola Scarselli, Royal Holloway</i>
15.00	Igneous intrusion on the Ghana Transform Margin; a nasty sting in the tail? <i>Gavin Elliott, Lukoil</i>
15.25	REFRESHMENTS & POSTERS
SESSION 4: NEW TECTONIC MODELS AND PLAYS IN NORTH AFRICA Session Chairs: Richard Blight & Harry Davis	
16.00	Structural History of the North African Margin: Insights into the Prediction of Offshore Plays <i>Sigrún Stanton, Halliburton</i>
16.25	Basin Geometry, Tectonic Development and Prospectivity of the West Alboran Basin <i>John Aitken, Mubadala</i>
16.50	A discussion on new play potential within the offshore Sirt Basin, Libya, from newly acquired long-offset, mega-regional and newly reprocessed 2D seismic data <i>Elisabeth Gillbard, ION</i>
17.15	Regional uplift, unroofing and hydrocarbon migration, charge and dispersal, Libya <i>David Boote, David Boote Consulting Ltd &amp; Reem Aboushoug</i>
17.40	EVENING RECEPTION

FRIDAY 1 SEPTEMBER 2017	
SESSION 5: NEW TECTONIC MODELS AND PLAYS IN EAST AFRICA Session Chairs: Louise Hornby	
09.00	KEYNOTE: Somali Basin's crustal structure and post-rift deformation: a recorder of Madagascar and India drifts <i>Jean-Claude Ringenbach, Total</i>
09.25	Impact of Tertiary Tectonic Activity on the Petroleum System, Offshore Tanzania/ Mozambique, East Africa <i>Niall Sayers, Shell</i>
09.50	Offshore Somalia: Defining crustal type and its implications for prospectivity <i>Hannah Kearns, Spectrum</i>
10.15	REFRESHMENTS & POSTERS
SESSION 6: NEW SEDIMENT BUDGET STUDIES AND THEIR IMPLICATIONS FOR PROSPECTIVITY Session Chairs: Madeleine Raven & Toya Latham	
10.45	KEYNOTE: Controls on Sand Supply & Seal Quality in Cretaceous Deepwater Reservoirs along the Equatorial Atlantic Margin from Ghana to Guyana <i>Anne McAfee, Core Lab</i>
11.10	The Lake Albert Rift (Uganda, East African Rift System): sediment budget, deformation, basin and relief evolution since 17 Ma <i>Brendan Simon, Rennes</i>
11.35	Integrated paleoecology as a tool for the definition of the paleo environmental evolution: applications from the Tertiary successions offshore Eastern and Western Africa <i>Andrea Piva, Eni</i>
12.00	Re-evaluation of Reservoir Quality and Distribution on the Sierra Leone Margin <i>Raymond Kargbo, Petroleum Directorate Sierra Leone</i>
12.25	LUNCH & POSTERS
SESSION 7: NEW DEVELOPMENTS IN SEISMIC RESERVOIR DEFINITION Session Chairs: Fabio Lottaroli	
14.00	KEYNOTE: Sedimentology and Architecture of Deepwater Turbidite Systems Offshore Mozambique – from Concept to Application <i>Daniel Bendias &amp; Fabio Contreras, Eni</i>
14.35	Turning exploration inside out: facies prediction for Ayame-1X, Côte d'Ivoire <i>Will Parsons, Ophir Energy</i>
15.00	Giant Pockmark-initiated slope channel complexes: Jubilee basal reservoir topography and reservoir zone confinement as a concept for basal slope channel reservoir morphology <i>Bryan Cronin, Tullow</i>
15.25	Geophysics of the SNE Field, Senegal <i>Wytze de Boer, Cairn Energy</i>
15.50	What's next for E&P in Africa? <i>Keith Myers, Westwood Global Energy Group</i>
16.15	AWARDS CEREMONY
16.25	CLOSING ADDRESS & INVITATION TO HOUSTON 2018
ORGANISING COMMITTEE Ray Bate (Chair), Helen Doran, Duncan Macgregor, Richard Dixon, Kevin Dale and Ian Poyntz	
TECHNICAL COMMITTEE Helen Doran (Chair), Harry Davis, Jerry Jarvis, Fabio Lottaroli, Ken McDermott, Louise Hornby, Madeleine Raven, Jason Sutton, Matt Warner, Richard Blight and Toya Latham	



THURSDAY 31 AUGUST 2017
CHAIRMAN'S WELCOME
Session Chairs: Ken McDermott & Jason Sutton
The MSGBC Basin - A Seismic Data workshop demonstration <i>Ben Sayers, TGS</i>
Illustrating the value of accelerated interpretation products in supporting exploration decisions in the Angoche basin, offshore Mozambique <i>David Barlass, Western Geco</i>
LUNCH & POSTERS
Shallow water Congo; the imaging and geological challenges of unlocking overlooked pre-salt prospectivity <i>Matt Tyrell, PGS</i>
Plays and Remaining Potential in the Offshore Niger Delta <i>Paul Bellingham, ION</i>
REFRESHMENTS & POSTERS
Hunting turbidites in the Walvis Basin, offshore Namibia <i>Anongporn Intawong, Spectrum</i>
FRIDAY 1 SEPTEMBER 2017
Session Chairs: Ken McDermott & Jason Sutton
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REFRESHMENTS & POSTERS
The MSGBC Basin - A Seismic Data workshop demonstration <i>Ben Sayers, TGS</i>

AWARDS

Once again the PESGB will be recognising the best technical contributions with its prestigious awards, made by a respected panel of industry judges. The presentation ceremony will take place at the conference close.

Awards will be made for:

- Best Student Poster
- Best Poster
- Best Seismic Theatre Paper
- Best Oral Paper

Anyone interested in volunteering to be a judge please email [events@pesgb.org.uk](mailto:events@pesgb.org.uk)

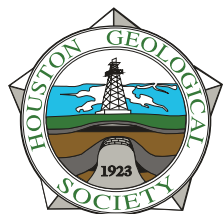
Evening Reception £4,000	Sponsored Student Places £2,000
Registration Gone!	WIFI £2,000
Technical Sessions Gone!	Exhibition Catalogue £2,000
Seismic Theatre £3,000	Funded Speakers £2,000
Abstract Volume Gone!	Signage £1,500
Ice Breaker Reception £3,000	Catering £1,500 per day
Breakfast £3,000 per day	Note pads £1,000
Delegate Bags Gone!	Speaker Gifts Gone!
International Pavilion £2,000	Pens £1,000

All prices are plus VAT  
In all cases the supporting company would get their logo on all of the adverts in the PESGB magazine prior to the event, which has a circulation of over 6,000 people. Your logo would also be included on the PESGB website including a link to a page of your choice, on sponsor signage at the event and in Show Materials.



# It's Time to Renew Your HGS Membership

Your membership expires June 30, 2017



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Emeritus members pay \$15.00 • Full-time students – Free

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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](mailto:office@hgs.org) and [smsartain1@comcast.net](mailto:smsartain1@comcast.net)**

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(required)  
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Annual dues \$30.00 Active or Associate: \_\_\_\_\_

Annual dues \$15.00 Emeritus: \_\_\_\_\_

\$0.00 Student: \_\_\_\_\_

\$0.00 Digital Bulletin: \_\_\_\_\_

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

Additional Donation: \_\_\_\_\_

Approved Total Remittance from Member: \_\_\_\_\_

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*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.*



John Jordan  
[john.jordan@hgs.org](mailto:john.jordan@hgs.org)

## Our Volunteers: The Fuel that Keeps the HGS Running

The HGS depends on volunteers to help the Society serve our membership, the larger geological community and even citizens within the Houston area. Without them freely donating their time and energy, the HGS would not be able to hold the monthly technical meetings, the boutique conferences and put together our social networking events. Participating in the HGS by volunteering helps all parties: the Society and the individuals. Every June we honor a subset of these volunteers but all of them deserve our thanks and praise.

We are fortunate to have the financial ability for a small staff and a nice office on the west side of Houston. Andrea Peoples and Jacky Jordan, our paid office staff, work hard to keep the HGS website functioning and up to date, our conferences organized and our events well-advertised while using the Society's dollars wisely. They are also in charge of the making sure all of our vendors are paid and that our membership data base is up to date. They do a lot...but they cannot do everything and that is where our HGS volunteers step in to fill in the gaps.

Some of the volunteer jobs are not very glamorous but are vital. The activities require people to attend or chair organizational meetings, edit contributing author's prose, pick up supplies and make sure that critical items like getting course notes printed and transportation for field trips are done in a timely manner. Someone has to bring the name tags, set up the video equipment and find speakers! All these are done by people who don't get paid and donate their finite free time. Because our members are willing to help, we host the International Explorationists Group, the North American Group, the E&E Group, the General Lunch meeting, the General Dinner meeting, Guest Night, the Mud Rocks Conference, the Geomechanics Conference, the Africa Conference, get the *Bulletin* published and run the Shrimp Peel, Tennis Tournament, Golf Tournament, and Skeet Shoot.

Volunteering is a win-win situation for all parties involved. It helps the HGS provide quality training, technical presentations and social networking events in a cost-effective manner while generating some income to cover our operating overhead and keeping the event costs within the budget of most of our members. It helps the volunteer by introducing them to other geoscientists in the greater geologic community of Houston. This can prove beneficial when looking for employment, finding people that can fill needs at your company and help people new to the Houston area develop new friends with similar interests. Large-scale events take long lead times. The 2018 Africa Conference and the 2019 Gulf Basin Geo sponsored

by GCAGS are looming on the horizon and offer many ways to get involved.

Every year the HGS honors a subset of our volunteers. The HGS tries to make sure that eventually everyone that is contributing on a regular basis is recognized for their contributions. The HGS's highest award is the *Gerald Cooley Award*. This award is named for Gerald Cooley who was a tireless HGS volunteer and it is not regularly given out by the HGS. It is reserved for individuals that have dramatically impacted the HGS through their volunteer efforts. This year's recipient is **Frank Walles**. The next highest award presented by the HGS is *Honorary Membership* which will go to **Martin Cassidy** who has been a contributing volunteer on all levels of the society since his return to Houston nearly 30 years ago. Following these awards are the *HGS Distinguished Service Awards* which will be presented to three very deserving HGS members: **Charles Revilla**, **Neal Immega** and **Weixin (Wayne) Xu**. These HGS members have been dedicated volunteers for many years and in many ways. The *Chairman's Award* is an award given out by the committee chairman to committee volunteers that have done exceptional volunteer work with in their committee. There are four members (**Bill Dickson**, **John Moran**, **Barbara Hill** and **Cheryl Desforges**) that will be receiving the Chairman's Award. The *HGS President's Award* is for HGS members that have made large volunteer contributions over the current fiscal year. The four recipients of the 2017 President's Award are **Phil Towle**, **Tami Shannon**, **L Taras Bryndzia** and **John Breyer**. Each of these members have devoted hours of their time and energy to either a major HGS Conferences or to structural changes that were way above what they originally volunteered to do for the HGS. The HGS likes to recognize outstanding new volunteers with the *Rising Star Award*. The four members receiving the Rising Star Award are **Ryan Yarrington**, **Stephen Adeniran**, **Nkechi Odumodu** and **Brad Hammil**. Past Rising Star recipients have gone on to be officers in the HGS and have had major roles within the AAPG.

I would like to extend my sincere gratitude to the HGS volunteers we are honoring in 2017 and all of the other extremely dedicated HGS helpers that we have not recognized with an award this year. Thank you for your dedicated service to the HGS. You have set an example for others through your efforts. I sincerely believe that your efforts will help you develop and grow in your career as a geoscientist. Lastly, I want to thank ALL of our members for the opportunity to be your leader during the past year. It has been an honor. I am confident that the HGS will continue to evolve with incoming President **John Adamick** at the helm. ■

From the  
President

From the President





HGS Guest Night

# Big Bones in Big Bend

The World's Largest Flying Creature Lived in Texas!

**June 10, 2017**  
**Houston Museum of Natural Science**  
7:00pm to 10:30pm  
Free planetarium shows at 6:15pm and 6:45pm  
Adults \$60  
Children under 17 \$30  
Dinner and drinks inside the museum  
Paleo lecture in the giant screen theater

**Don Corrick, Speaker**  
Big Bend National Park  
Park Geologist



Photo by Pam LeBlanc

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**Tami B. Shannon**  
tami.hgs@gmail.com

## Oh, The Places You'll Go!

I have been reading the Dr. Seuss book *Oh, The Places You'll Go!* to my children over the last few weeks. I actually received the book as a high school graduation present and reading it always fuels my wanderlust; I experience that innate craving to explore.

Before my tenure as Editor ends, I hope I can inspire office-bound HGS members to *GET OUTSIDE!* You can load the (now digital) *HGS Bulletin* onto a mobile device, find your wallet, keys, phone charger; put on your hiking boots, load the family into the car, and just GO.

*"You have brains in your head.*

*You have feet in your shoes*

*You can steer yourself*

*any direction you choose.*

*You're on your own. And you know what you know.*

*And YOU are the guy who'll decide where to go."*

*– Dr. Seuss, Oh The Places You'll Go!*

If you looked at Matt Smith's beautiful photo of the Texas-Mexico border on the May issue, I hope you felt as inspired as I did to explore more of our vast state and all its unique nooks and crannies. I have lived in Texas for over 13 years and I still haven't seen the best parts of it.

So, I have selfishly compiled this little bucket list of Texas mini-road trip maps beginning on page 12 (just click on Google map image for directions). Most of them are geologically inspired, of course, and I tried to keep each segment duration from 4-6 hours (give or take.) I also endeavored to keep each trip's ending location continuous to the start of the next so if you wanted one big road trip – you could do it!

If you happen to travel one of these trails, please feel free to email me photos, anecdotes, or travel blogs. I may just compile them into a Field Trip blog or article for next year's *Bulletin*. On that note, I would like to sincerely thank the HGS Board and membership for the opportunity to edit your beloved *Bulletin* this 2016-2017 year. Thank you to the chairperson, member, and advertiser content contributors, and the advisory and design editors for their tireless efforts to make the *Bulletin* such a high-quality product. A very special thanks to Design Editor, Lisa Krueger of Lisa Krueger Design, for without her creative juices, the *Bulletin* just would not be possible.

My departure is bittersweet because I have met some outstanding people throughout my appointment and some long-time friends. However, editing the *Bulletin* takes a lot of time and energy (usually on the weekends) and I am looking forward to freeing up those weekends to tackle some of these road trip adventures. I hope to see some of you out there as well! ■

*"Congratulations!*

*Today is your day.*

*You're off to Great Places!*

*You're off and away!"*

*– Dr. Seuss, Oh The Places You'll Go!*

From the Editor continued on page 12



From the Editor *continued from page 11*

**BEACH RUN (4 h 16 m)**

Memorial Park/Ocean Star Drilling Rig/Galveston Island State Park/San Luis Pass  
<https://goo.gl/maps/wuYQNKNXn912>

Less than an hour from Houston, Galveston Island (GI) provides a plethora of activities for a single road trip. From the **Ocean Star Drilling Rig Museum** located on Pier 19, (one block off the Strand), to **Galveston Island State Park** where you can swim, hike, bike, fish, bird-watch, camp, *geocache*, or paddle on one of the paddling trails. At the very west end near **San Luis Pass** explore a variety of habitats and several miles of beaches.

If you are not too exhausted, consider stopping to see the American alligator at **Brazos Bend State Park** and do some hiking in this Upper Texas Coastal region.

<http://www.houstonhistoricaltours.com/galveston.html>  
<http://tpwd.texas.gov/state-parks/galveston-island>  
<http://www.galveston.com/sanluispass/>  
<http://www.brazosbend.org/>

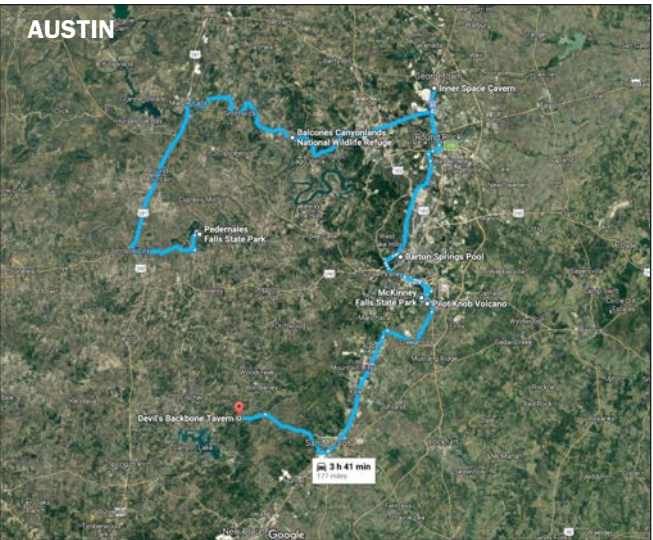
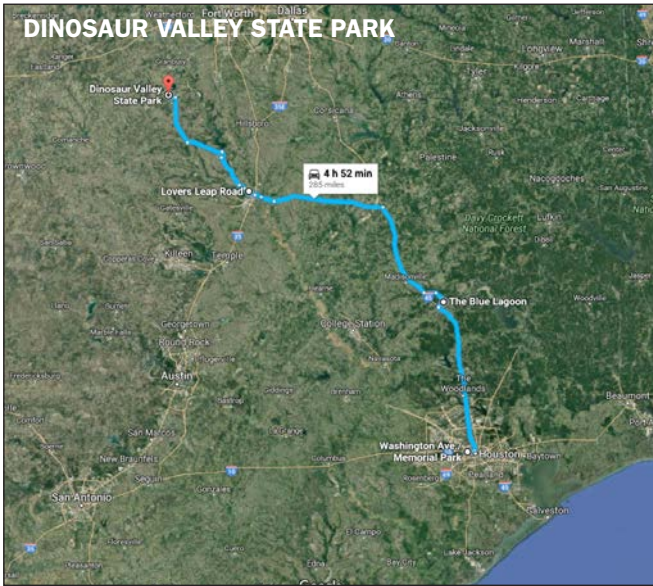
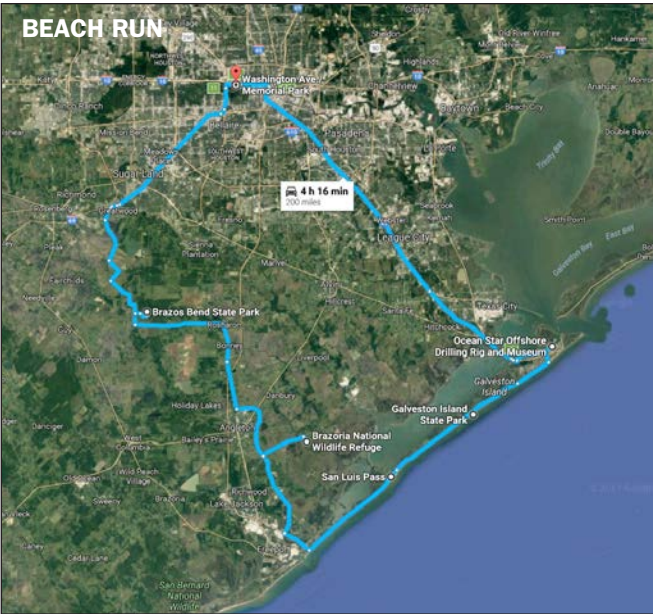
**DINOSAUR VALLEY STATE PARK (4 h 52 m)**

Houston/Blue Lagoon/Lovers Leap/Dinosaur Valley State Park  
<https://goo.gl/maps/2q1Haluhhp>

On the way to walk in dinosaur tracks in the bed of the **Paluxy River**, you might consider stopping at **The Blue Lagoon**, outside Huntsville. This private dive facility offers two crystal-clear, spring-fed lagoons each filled with 28 feet of warm, blue-green water. For a \$20 fee, non-divers can swim; however, they cap the number of people, so you need arrive early (or on a weekday) so you are not turned away.

Also consider visiting **Lover's Leap** along the limestone bluff in Waco's Cameron Park. According to local legend, this is the site of demise for Indian maiden Wa-Wa-Tee and her Apache lover – they chose to embrace one another and leap into the swollen Bosque River below rather than face a lifetime apart because of tribal differences.

<https://www.houstoniamag.com/articles/2016/10/24/houstons-best-swimming-hole-huntsville-blue-lagoon>  
<http://www.texasescapes.com/MikeCoxTexasTales/Lovers-Leap%20.htm>  
<http://tpwd.texas.gov/state-parks/dinosaur-valley>



**WESTCAVE PRESERVE (4 h 56 m)**

Dinosaur Valley State Park/Gorman Falls/Westcave Preserve  
<https://goo.gl/maps/QmVRNCnRr1D2>

**Gorman Falls, Colorado State Park's** main attraction, can be reached by taking a 1.5-mile-long hike through rugged ranch country. The last 100 yards is a rocky descent down a steep path to the misty chill of the falls from a 60-foot-high limestone cliff.

**Westcave Preserve** is a unique place where you can visit an arid savanna and enter a limestone crevice into a sheltered canyon to see a stunning 40-foot waterfall replenishing the emerald pool below. Access to the canyon and cave is by guided tour only (Saturday & Sunday).

<http://www.southernliving.com/travel/south-west/texas-hill-country/colorado-bend-state-park>  
<http://westcave.org/visit-our-preserve/weekend-public-tours>

**AUSTIN (3 h 36 m)**

Westcave Preserve/Pedernales Falls/Balcones Canyonlands/Inner Space Cavern/Barton Springs Pool/McKinney Falls/Pilot Knob Volcano/Wimberley  
<https://goo.gl/maps/VkYwQWTL3uE2>

View the **Pedernales Falls** from the scenic overlook at the north end of the park where the river drops about 50 feet in elevation over a distance of 3,000 feet. Water cascades over tilted, layered stair steps of river limestone which is 300 million years old.

Hidden for over 10,000 years, **Inner Space Cavern** is one of the best-preserved caves in Texas; in Austin's **Zilker Park**, **Barton Springs Pool** is fed from underground springs with an average temperature of 68-70 degrees, ideal for year-round swimming, and pyroclastic rock can be seen at the Lower McKinney Falls in McKinney Falls State Park.

<http://tpwd.texas.gov/state-parks/pedernales-falls/nature>  
[http://www.beg.utexas.edu/UTopia/centtex/centtex\\_what.html](http://www.beg.utexas.edu/UTopia/centtex/centtex_what.html)  
<https://innerspacecavern.com/about>  
<https://austintexas.gov/departments/barton-springs-pool>  
<https://www.lib.utexas.edu/geo/ggtr/ch2.html>  
<http://www.visitwimberley.com/jacobswell/>

**From the Editor** *continued on page 14*



From the Editor continued from page 13

**SAN ANTONIO – DEVIL’S RUN (4 h 11 m)**

Wimberley/Devil’s Backbone/Cascade Caverns/Bandera General Store/Lost Maples State Natural Area/Devil’s Sinkhole  
<https://goo.gl/maps/dpkkUXQojUv>

One of Texas most scenic drives, officially R.M. 32, the **Devil’s Backbone** is a winding, razor-backed ridge overlooking Hill Country vistas. You might plan to see **Cascade Caverns** along this route, which claims to be “Texas’ only show cave with a 100-ft. waterfall!”. Or perhaps you would prefer the **Bandera General Store**, which has an antique, fully working, 1950’s Ice cream Fountain – one of only 11 left in Texas.

**Devil’s Sinkhole** is an enormous vertical cavern is thought to be the largest single-chamber cavern in Texas. It also houses one of the state’s largest colonies of Mexican free-tailed bats.

<https://www.myscenicdrives.com/drives/texas/devils-backbone>  
<http://www.cascadecaverns.com/>  
<http://www.banderageneralstore.com/>  
<http://tpwd.texas.gov/state-parks/lost-maples>

**BIG BEND (5 h 49 m)**

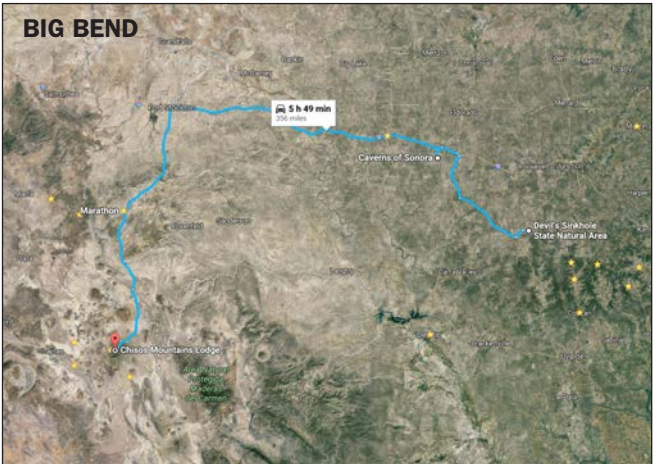
Caverns of Sonora/Fort Stockton/Marathon/Chisos Mountains  
<https://goo.gl/maps/AuHet52gwC92>

The **Caverns of Sonora** is a world-class cave located 8 miles (13 km) west of the small city of Sonora. It contains unusual formations, such as bladed helictites and coralloid growths.

**Marathon** is located in the remote Big Bend region of West Texas. It has only 430 full-time residents, and has been blessed with the darkest skies in the lower 48 states.

The **Chisos Mountains** are the heart of **Big Bend National Park**. They extend twenty miles from Punta de la Sierra in the southwest to Panther Junction in the northeast.

<http://www.cavernsofsonora.com/>  
<https://www.tourtexas.com/destinations/fort-stockton>  
<http://www.marathontexas.com/>  
<https://visitbigbend.com/chisos-mountains/>



**MARFA (4 h 2 m)**

Chisos Mountains/Santa Elena Canyon Trail/Terlingua/Marfa  
<https://goo.gl/maps/W1iwLZLwcGF2>

The **Santa Elena Canyon Trail** follows the bank of the Rio Grande as it cuts through the Mesa De Anguila. It’s a short hike, but the stunning views in the canyon make this hike one of the top attractions of Big Bend, in addition to the ghost town of **Terlingua**.

**Marfa** is known as the film location for James Dean’s final picture the *Giant*; but the infamous mystery of Marfa Ghosts Lights can be seen across the foothills of the Chinati Mountains from a viewing station, east of town.

<http://www.texashiking.com/Locations/ShowLocation.aspx?LocationID=1405>  
<https://visitbigbend.com/terlingua/>  
<http://www.visitmarfa.com/>

**CATTLEMAN’S STEAKHOUSE (5 h 44 m)**

Marfa /Pinto Canyon/Cattleman’s Steakhouse  
<https://goo.gl/maps/rTRq4y9aJVG2>

**Pinto Canyon** Pinto Canyon forms a boundary between the southern end of the Sierra Vieja and the Chinati Mountains. The canyon cuts through volcanic rocks and exposes beds as old as the Permian. Grab a bite to eat after a day of exploring at the legendary Texas “Manliest Steakhouse in America,” **Cattleman’s Steakhouse**.

<https://tshaonline.org/handbook/online/articles/rkp10>  
<http://www.cattlemanssteakhouse.com/history.htm>

**WINK (4 h 10 m)**

Cattleman’s Steakhouse/Hueco Tanks /Guadalupe Mountains/Wink  
<https://goo.gl/maps/dKBurMFUh6F2>

A spiritual sanctuary, **Hueco Tanks** is a natural oasis in the middle of a desert. It provides a critical resource — water; huge red rocks and boulders are pocked with fissures and holes — huecos — that trap and hold rainwater for months at a time. Pictographs also adorn the canyon walls, but oddly many of these drawings have been deliberately hidden from view.

**Guadalupe Mountains National Park** preserves one of the finest examples of an ancient, marine fossil reef on Earth, the impressive, massive rock face of El Capitan.

Outside of **Wink, Texas**, two large sinkholes formed in June 1980 and May 2002 in the Permian Basin in the Hendrick Oil Field at the western margin of the Central Basin Platform above the Permian Capitan Reef complex.

<http://www.texasbeyondhistory.net/hueco/>  
<https://www.nps.gov/gumo/index.htm>  
<http://www.beg.utexas.edu/research/programs/near-surface-observatory/wink-sink>  
**From the Editor continued on page 16**

**“KID, YOU’LL MOVE MOUNTAINS!**  
*So... be your name Buxbaum or Bixby or Bray or Mordecai Ali Van Allen O’Shea...*  
*You’re off to great places,*  
*Today is your day!*  
*Your mountain is waiting,*  
*So... get on your way!”*  
 – **Dr. Seuss, Oh The Places You’ll Go!**



# From the Editor

**CADILLAC RANCH (4 h 59 m)**  
Wink/Odessa Meteor Crater/Stonehenge Replica/Cadillac Ranch  
<https://goo.gl/maps/au35qEJm28B2>

The **Odessa Meteor Crater** is the second largest meteor crater in the U.S., a hole 550 feet wide and 100 feet deep formed when a thousand-ton mass of space-iron slammed into the earth 50,000 years ago. Barely visible, the crater has since filled nearly to its rim with West Texas silt.

**Stonehenge II** was created as an art project by the late Al Shepperd, a Hill Country Arts Foundation patron, and his neighbor Doug Hill more than 20 years ago on Shepperd's land in nearby Hunt, Texas. It took nine months to build and is 90 percent the height and 60 percent the width as the original. The sculptures were relocated stone-by-stone to their final resting place beside the Guadalupe River on the campus of the Hill Country Arts Foundation.

Texas millionaire, Stanley Marsh III built **Cadillac Ranch** roadside landmark just 10 miles southwest of Amarillo, Texas. He used 10 junkyard Cadillac's, ranging in model years from 1948 to 1963, and buried them nose-down, facing west to represent the "Golden Age" of American automobiles. Don't forget that can of Krylon paint to add to the welcomed graffiti as part of the visit.

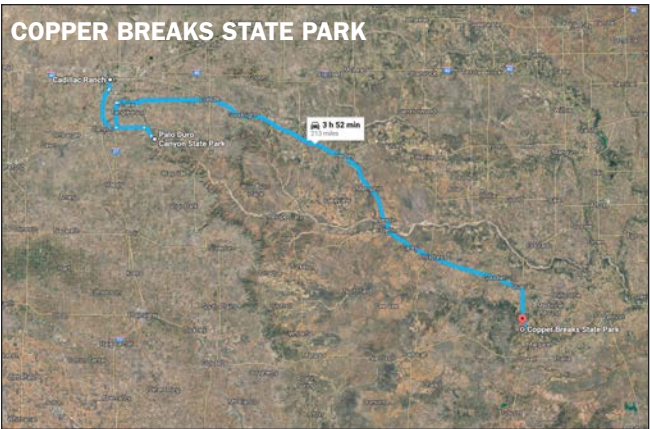
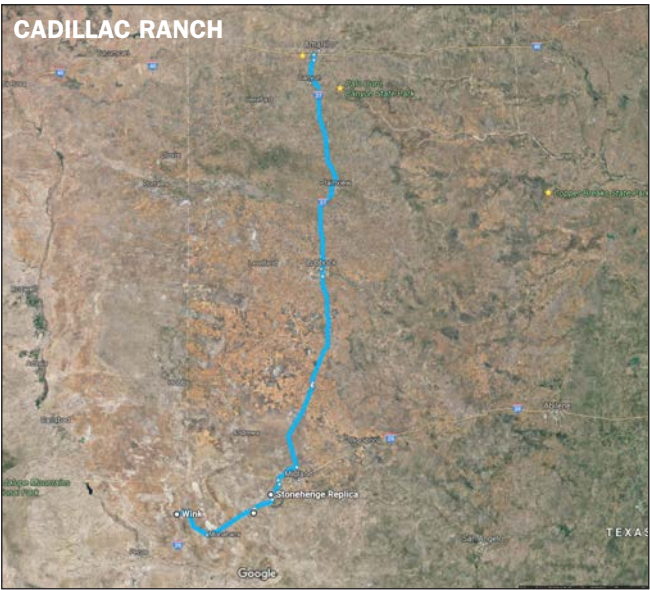
<http://www.roadsideamerica.com/story/26091>  
<http://www.hcaf.com/stonehenge-ii/>  
<http://www.legendsofamerica.com/tx-cadillacranch.html>

**COPPER BREAKS STATE PARK (3 h 52 m)**  
Cadillac Ranch/Palo Duro Canyon/ Copper Breaks State Park  
<https://goo.gl/maps/6HTJReInX5H2>

**Palo Duro Canyon** was formed by water erosion from the Prairie Dog Town Fork of the Red River. Early Spanish Explorers are believed to have discovered the area and dubbed the canyon "Palo Duro" which is Spanish for "hard wood" in reference to the abundant mesquite and juniper trees.

**Copper Breaks State Park** is between Quanah and Crowell on the Pease River and SH 6 and is relatively unknown and off-the-beaten-path. Therefore, the park's remote location keeps visitor traffic down and helps maintain a sense of seclusion and wilderness.

<http://www.palodurocanyon.com/>  
<http://tpwd.texas.gov/state-parks/copper-breaks>  
[http://tpwd.texas.gov/publications/pwdpubs/media/pwd\\_br\\_p4506\\_0097z.pdf](http://tpwd.texas.gov/publications/pwdpubs/media/pwd_br_p4506_0097z.pdf)



# KID GEMS

My daughter, Sophia, asked me if she could write an article for this issue of the Bulletin since it would be my last one. That spawned the idea to have kids submit their own articles on geology and natural resources, which I am entitling "Kid Gems".

Kids really offer unique perspectives on our world and everyday lives. Children are often seeing and learning things for the very first time and their fresh viewpoint may be just the inspiration we all need to spark a new idea or initiative. If you know a child who is inspired to write, and would like to submit an article to the HGS Bulletin, have them submit their work to me at [tami.hgs@gmail.com](mailto:tami.hgs@gmail.com).

# EARTH

The Earth helps us live with the plants, animals, atmosphere/air, and it's surface full of water

# Plants

If there were no plants, then we would die because plants create air for us. Plants have roots that make seeds, a stem which helps the plant grow, and have leaves that make food by using the sun's energy.

Plants



# Animals

We need animals 'cause they give us our food (and drinks too) like:  
cows=hamburgers  
chicken=chicken  
turkey=turkey  
pig=porkchop  
cows=milk

Animals



# Atmosphere

The atmosphere is a huge kind of force field that surrounds the earth so we can breathe. It is very invisible. It also helps us have the right gravity.



# Water

80% of Earth's surface is water. Of that water, 1% of the surface is frozen glaciers, 2% of the surface is fresh water, and 97% of the surface is salt water.

Water



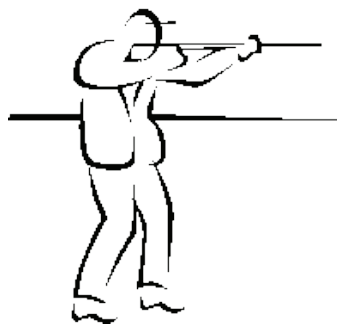
Lakes: ponds that hold some salt water and fresh water

Oceans: big parts of water that are put together

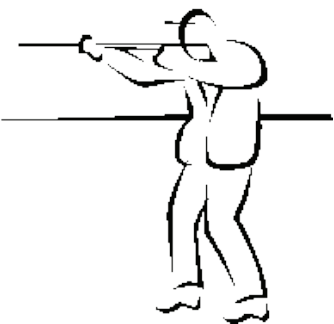
Rivers/Streams: long, skinny parts of water that either lead into a lake or ocean

-Sophia Shannon, Age 8





# HGS SKEET SHOOT



Saturday, June 10, 2017  
Greater Houston Gun Club  
6702 McHard Road, Missouri City

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

HGS recognizes that 2017 is a lean year in the oil patch, and sponsorship for events like this is hard to find. **For \$150, you'll receive paid entry for one shooter and one guest (total value of \$120) and be listed as a platinum sponsor on the webpage and at the event.**

**We are limited to 160 shooters in four rotations. Entry fee is \$90 per shooter for registrations received by FRIDAY, JUNE 02. After June 02, registration will be strictly on a "space available" basis and the entry fee will be \$120 per shooter. Register early!!**

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

For directions to the club, visit [www.greaterhoustongunclub.com](http://www.greaterhoustongunclub.com).

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**ONLINE REGISTRATION INFORMATION AT: [www.hgs.org/civicrm/event/info?id=1643](http://www.hgs.org/civicrm/event/info?id=1643)**

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

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

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

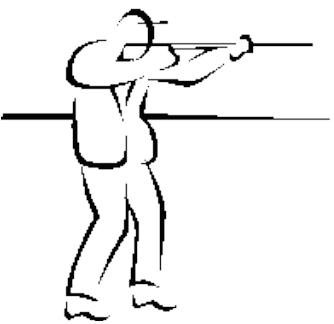
Preferred time: (circle one) 9:00 10:00 11:00 12:00 Ammo: (circle one) 12 gauge 20 gauge

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

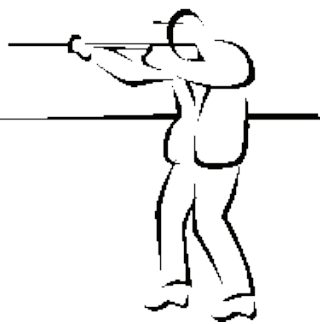
If you wish to register as a squad, please return forms for all squad members together.

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



# HGS SKEET SHOOT



Saturday, June 10, 2017  
Greater Houston Gun Club  
6702 McHard Road, Missouri City

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

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

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

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

Sponsorship Level: \_\_\_\_\_ Amount: \_\_\_\_\_

Credit Card #: \_\_\_\_\_ Exp. Date: \_\_\_\_\_ Code: \_\_\_\_\_

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

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# HGS GOLF TOURNAMENT

Monday – October 16, 2017  
Sterling Country Club and  
Houston National Golf Club  
4-man Scramble

Come join us for golf, food, friends and fun at the annual HGS Golf Tournament at our new location, **Sterling Country Club** and **Houston National Golf Club** ([www.sccathn.com](http://www.sccathn.com)). There will be prizes awarded for closest to the pin and long drive as well as many great door prizes for participants.

**Entry Fee:** \$175.00/Golfer or \$700.00/Team.  
**Early Bird Special:** Sign up before September 25th to receive a discount of \$25.00/Golfer or \$100/Team.  
**Entry Deadline:** October 9th.

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.

Companies or individuals interested in sponsoring the event should contact Elliot Wall at 713-328-2674 or [elliott.wall@corelab.com](mailto:elliott.wall@corelab.com). *Sponsorship deadline is September 30th.*

## SCHEDULE OF EVENTS

8:00 – 9:45 a.m. Registration and free use of driving range  
(Breakfast will be provided by **Core Lab**  
and **Petro Log International, Inc.**)  
10:00 a.m. Shotgun start  
3:00 p.m. Cash bar, open buffet  
3:30 p.m. Door prizes and awards presentation



## REGISTRATION OPTIONS

**Online:** [www.hgs.org/golftournament](http://www.hgs.org/golftournament)  
**Email:** [office@hgs.org](mailto:office@hgs.org)  
**Fax:** 281-679-5504  
**Mail:** Houston Geological Society, 14811 St. Mary's Lane, Suite 250, Houston, TX 77079  
*If paying by check, please make check payable to HGS Entertainment Fund.*

Team Captain \_\_\_\_\_ Phone \_\_\_\_\_ Amount Enclosed \_\_\_\_\_  
Company \_\_\_\_\_ Email \_\_\_\_\_  
Billing Address \_\_\_\_\_  
Credit card # \_\_\_\_\_ Exp. Date \_\_\_\_\_ Code# \_\_\_\_\_

**Please Provide Email Addresses For All Team Members. All Communications Will Be Done Via Email.**

Foursome Members (Please Print)	Company	Phone Number/Email	Hdcp/ Avg. Score
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____

*Please provide email addresses for **all team members**. All communications will be done via email.*



# HGS GOLF TOURNAMENT

Monday – October 16, 2017  
Sterling Country Club and  
Houston National Golf Club

## SPONSORSHIP APPLICATION

### TREVINO SPONSORSHIP \$250.00

- **Sponsor Logo** signs on courses.
- **Company name** displayed on sponsor recognition board at registration and awards banquet.

### HOGAN SPONSORSHIP \$500.00

- **Sponsor logo** signs on courses.
- **Company logo** displayed on sponsor recognition board at registration and awards banquet.



### NICKLAUS SPONSORSHIP \$1,000.00

- **Sponsor logo** signs on courses.
- **Company logo prominently** displayed on sponsor recognition board at registration and awards banquet.
- **Company logo** displayed on driving range and practice putting green.

### TITLE SPONSORSHIP \$2,000.00

- **Sponsor logo** signs on courses.
- **Company logo prominently** displayed on sponsor recognition board at registration and awards banquet.
- **Company logo** displayed on driving range and practice putting green.
- **Company logo** displayed on beverage carts.
- **Sponsorship includes tournament entry for one team (4 people).**

## SPONSORSHIP REGISTRATION OPTIONS – Deadline September 30

**Online:** [www.hgs.org/golftournament](http://www.hgs.org/golftournament)  
**Email:** [office@hgs.org](mailto:office@hgs.org)  
**Fax:** 281-679-5504  
**Mail:** Houston Geological Society, 14811 St. Mary's Lane, Suite 250, Houston, TX 77079  
*If paying by check, please make check payable to HGS Entertainment Fund.*

Name \_\_\_\_\_ Phone \_\_\_\_\_ Amount Enclosed \_\_\_\_\_  
Company \_\_\_\_\_ Email \_\_\_\_\_  
Billing Address \_\_\_\_\_  
Credit card # \_\_\_\_\_  
Exp. Date \_\_\_\_\_ Security Code# \_\_\_\_\_

**Please email your company logo to [office@hgs.org](mailto:office@hgs.org) and [elliott.wall@corelab.com](mailto:elliott.wall@corelab.com).**  
**Note: Company logos (high resolution file) must be received no later than September 30th.**  
**If there are any questions, please contact Elliot Wall at 713-328-2674.**





# Applied Geoscience Conference



SOUTHWESTERN ENERGY • 10000 ENERGY DRIVE • SPRING, TX 77389

November 8-9, 2017

## Geomechanics in Unconventionals

Please join us for the Houston Geological Society's premier two day technical conference, focusing on geomechanical integration and advancement in the assessment of unconventional reservoirs.

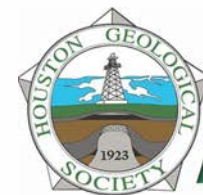
The program will highlight field examples of geomechanical workflows, with sessions focusing on Unconventional Geology & Geophysics, and Integrated Workflows & Engineering Design.

Wednesday AM Session 1 - Geomechanical Characterization  
Wednesday PM Session 2 - Engineering Applications  
Thursday AM Session 3 - Surveillance and Diagnostics  
Thursday PM Session 4 - Case Studies

Sponsorship Opportunities	Platinum Sponsor \$10,000	Gold Sponsors \$5,000	Silver Sponsors \$2,500	Bronze Sponsor \$1,000
Advertisement in Program Book	Full Page	1/2 Page	1/4 Page	1/8 Page
Complimentary Full Registrations	4	2	1	
Complimentary Vendor Booth	✓	✓	✓	
Recognition in Program Book, onsite signage, HGS Bulletin	✓	✓	✓	✓
Recognition in conference announcements and website with logo hyperlink	✓	✓	✓	✓
*Booths/Posters Assigned on first come, first serve basis with confirmation of payment				



For more information please visit: [www.hgs.org](http://www.hgs.org) or contact Andrea Peoples: [andrea@hgs.org](mailto:andrea@hgs.org)



# Applied Geoscience Conference



SOUTHWESTERN ENERGY • 10000 ENERGY DRIVE • SPRING, TX 77389

November 8-9, 2017

To sponsor, please indicate your sponsorship level \_\_\_\_\_ with payment (payable to HGS) to: HGS, 14811 St. Mary's Lane, Ste. #250 - Houston, Texas 77079 - Attn: Andrea Peoples, or you can email your sponsorship form to [andrea@hgs.org](mailto:andrea@hgs.org).

Name \_\_\_\_\_ Phone \_\_\_\_\_ Amt. Enclosed \_\_\_\_\_

Company \_\_\_\_\_ Email \_\_\_\_\_

Billing Address \_\_\_\_\_

Credit Card # \_\_\_\_\_ Exp. Date \_\_\_\_\_ Sec. Code# \_\_\_\_\_

Approved by \_\_\_\_\_ Date \_\_\_\_\_

If you would like HGS to invoice your sponsorship please complete the section below:

Invoicing Address \_\_\_\_\_

Accounting Contact Name \_\_\_\_\_ Contact Email Address \_\_\_\_\_

Special Billing Codes \_\_\_\_\_ Approved by \_\_\_\_\_ Date \_\_\_\_\_

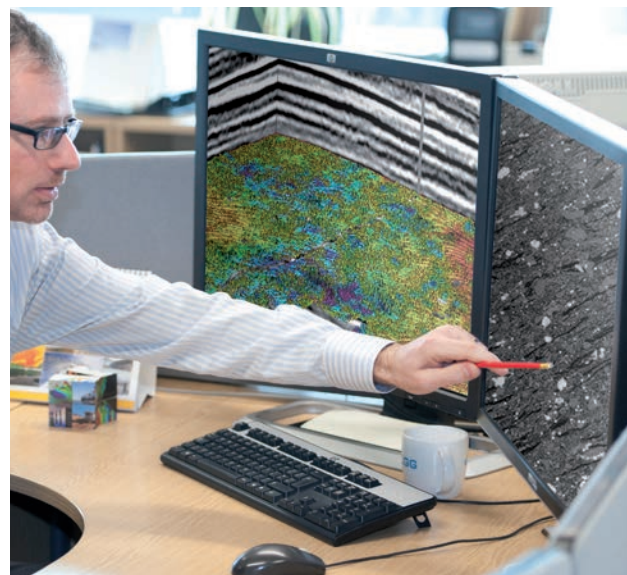
Please email your company logo to [andrea@hgs.org](mailto:andrea@hgs.org). Note: Please send only company logos at 300+dpi



For more information please visit: [www.hgs.org](http://www.hgs.org) or contact Andrea Peoples: [andrea@hgs.org](mailto:andrea@hgs.org)



## Greater Value With Integrated Reservoir Characterization



CGG GeoConsulting designs innovative workflows that reduce risk, shorten timelines and maximize the returns on your appraisal and development projects. Our geological services combine mineralogical, sedimentological and geochemical insight for improved petrophysical analysis and seismic reservoir characterization.

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in f @ [cgg.com/IRC](http://cgg.com/IRC)



### HSI

**HORIZONTAL SOLUTIONS INTL.**  
The Geosteering Experts

## Stay in the Zone

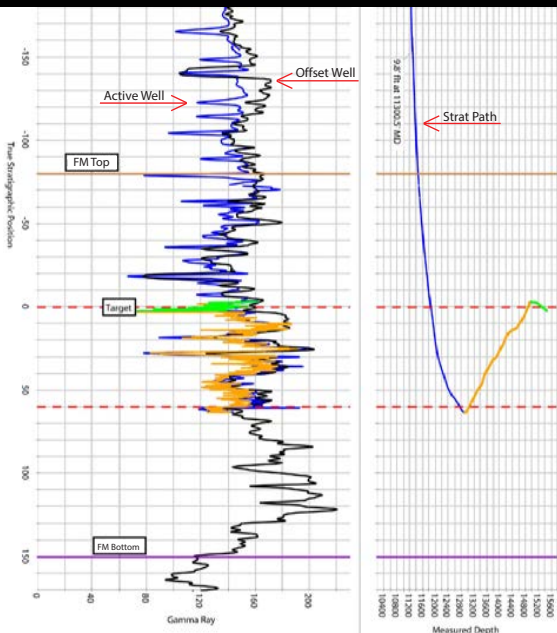
Maximize Percent in Zone - Maximize Production  
Avoid Costly Redrills



**TrueTime**  
Geosteering Services







**LATNAVNET**  
Geosteering Software



**Since 1994, we have geosteered more than 11,000 laterals - over 35 Million feet!**

Our experience includes the Bone Spring, Wolfcamp, Niobrara, Bakken, Austin Chalk, Eagle Ford, Buda, Caney-Mississippian, Woodford, Barnett, Haynesville, Cotton Valley, Marcellus, Utica & more.

-  **TrueTime Geosteering** 24/7 geosteering and monitoring on shifts, or an individual interpreter with close collaboration with company and wellsite personnel.
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-  **Post Drill Analysis** Full geological evaluation of your most challenging wells after the lateral has been drilled.
-  **LATNAVNET** HSI's geosteering software with a cloud based data management system providing a unique collaborative platform across an entire team. **Free with active services!**

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75001

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[www.horizontalhsi.com](http://www.horizontalhsi.com)

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# Houston Geological Society Awards

## 2016-2017 Gerald A. Cooley Award

*The Gerald A. Cooley Award honors the memory of the man we remember as the personification of dedication, service and leadership continuing long after official office terms expire. It recognizes true dedication to the profession of petroleum geology in general, and to the Houston Geological Society in particular. The award honors those who have continued to serve the society well above and beyond the call of duty over many years. A candidate must have received both the Distinguished Service and Honorary Life Membership Awards to be eligible for consideration.*

*It is the Society's highest award.*

**Frank Walles** manages a team of global advanced reservoir characterization specialists (including Petrophysics, Geochemistry, & Geomechanics) that develop and supports applied technology approaches (wireline, LWD, Surface Logging Systems) that are utilized within Baker Hughes' worldwide teams. His reservoir characterization



**Frank Walles**

passion is utilized across the industry within a client-service value role for applied, integrated (multi-discipline) advanced technology for improved hydrocarbon recovery. Along with his extensive (35+years) of operator experience, Frank applies those skills within the Houston Geological Society to benefit the membership through developing highly-focused applied geoscience conferences where knowledge is shared of the "radical middle" (as defined by Scott Tinker, BEG - the knowledge intersection of Industry, University and Government).

Sharing knowledge in advanced applied technology applications, with preferred interpretation approaches, is valuable for our HGS membership and Frank helps to develop this value by encouraging experts in the industry (100 plus members) to volunteer within the HGS membership and to deliver this knowledge within annual applied geoscience conferences focused in unconventional reservoir characterization and unconventional geomechanics. Many highly-knowledgeable HGS technical committee members contribute their very valuable expertise to these conferences for the greater service of our professional geologic community.

Frank's most significant historical, voluntary, professional contributions include:

HGS Chair Applied Geoscience Conferences; Global Discipline Lead Geology within Global Geoscience and Petroleum Engineering at Baker Hughes Incorporated.

### Houston Geological Society (HGS)

- Founding member of HGS Northsiders' Committee (2000)
- HGS Northsiders Chair & Co-Chair (2000 – 2008)
- Founding organizer of HGS Mudrocks Applied Geoscience Conference (2006)
- HGS Applied Geosciences Conference Mudrocks Chair & Co-Chair (2006-2017)
- Founding organizer of HGS Bi-annual Unconventional Geomechanics Applied Geoscience Conference (2013)
- HGS Bi-annual Unconventional Geomechanics Applied Geosciences Conference (AGC) Mudrocks Co-Chair/ Advisor (2013, 2015, 2017)

### American Association of Petroleum Geologists (AAPG)

- President Elect, President, Past President AAPG Energy Minerals Division (2009-2011)

### Society of Petroleum Engineers (SPE)

- Session Leader/ Presenter & Steering Committee Member – SPE Forum titled "Physics and Chemistry in Nano-scaled Rocks" (2015)
- Key Note Speaker, numerous talks at multiple SPE Workshops & Forums (2006-2017)

Frank's most significant industry publication is a chapter called "Formation Evaluation and Reservoir Characterization of Source Rock Reservoirs" (co-authored with Matt w. Bratovich) in the Unconventional Oil and Gas Resources: Exploitation and Development, edited by Usman Ahmed, N. Meehan, April, 2016, CRC Press. <http://www.crcnetbase.com/doi/pdfplus/10.1201/b20059-9>.

He also has BHI Patent Applications that include multiple applications within the field of reservoir characterization and development. Frank is a Certified Petroleum Geologist, (DPA - AAPG) # 5890, and a Licensed State Geologist #1980, State of Texas. ■



## 2016-2017 Honorary Life Membership

Honorary Life Membership honors members who have distinguished themselves in the science of geology or have contributed outstanding service to the success and welfare of this organization. The honoree must have received the HGS Distinguished Service Award.

**Martin Cassidy** has been participating in geological societies, in general, and the Houston Geological Society, in particular, because he believes that this has been very worthwhile for his professional development and growth, as well as his commitment to the overall geoscience fraternity. When Martin Cassidy arrived in Houston with Amoco in 1966, he soon



**Martin Cassidy**

joined the HGS and became active in the Research committee as a member and then chairman. The first *Deltas in their Geologic Framework* (Martha Lou Broussard and Jim Ragsdale as editors) was published during that time and it gave Martin great pleasure working with others to accomplish this HGS goal. The publication was a great success! In 1968, Martin was elected HGS Treasurer and in 1969 2nd Vice President (they had one of those

back then.) Unfortunately, Martin had to leave the position early in the spring of his VP term when he was transferred to Amoco International and sent to Libya.

Martin Cassidy returned to Houston 1988, and again became active in the HGS as he focused his efforts on the International Explorationist group. Martin Cassidy has also served several terms as an HGS delegate to the AAPG, a position Martin Cassidy currently holds now. Martin is particularly honoured to have been HGS President-elect and then President in 2012-2013. During Martin's time as President, the HGS redesigned their website, a challenge that was handled well by the HGS Board under his leadership.

In 2013, Martin Cassidy was the General Chair of the Africa Conference, with Al Danforth and Ian Poyntz as his key committee members. Just one of the global events that threatened to cancel the Africa Conference was the threat of Ebola! Martin Cassidy still enjoys working with the International interest group and Africa conference. Martin is still very active in the HGS and believes that there are always many new aspects of geology to observe and learn about. ■

## 2016-2017 Distinguished Service Award

HGS Distinguished Service Award honors members who have given long-term valuable service to the Society.

**Charles Revilla** has been an active supporter and member of the HGS since the time he moved to the Houston area with Amoco International (after years of overseas work assignments). The HGS *Bulletin* has been Charles's main area of society activity since 1995. Some people are described as having been born with an Editor's eye and this must explain the pleasure he gets from working behind the scenes, along with many others, helping to produce our noteworthy monthly publication. Charles has been one of our longest standing editorial assistants, helping countless HGS Editors meet their deadlines. This has involved painstakingly proofreading copy written by geologists, other professionals, and sometimes non-professionals. Charles sneaks in editing of misspelled words, awkward sentence structure, and poorly chosen words often submitted to the HGS *Bulletin*. Charles met the editor's deadlines even when his job responsibilities kept him the field longer than expected. One editor described Charles Revilla as a "professional, international well-sitter."



**Charles Revilla**

Charles has also been a contributor to the HGS *Bulletin*, often writing what could be described as geological travelogues through the international oil-producing areas of the world. One suggestion often given by Charles is to include some geological humour in the *Bulletin*; however, he seems to be the only one who thinks this is a good idea since it has not yet materialized.

It is Charles' hope that other members might get interested in becoming active in the preparation of the monthly HGS *Bulletin*. Apart from the personal satisfaction volunteers receive from this type of work, it also looks good on your resume. The end result is that it provides an avenue for personal growth and effectiveness while helping the Houston Geological Society. ■

**Neal Immega** is a long-time HGS member who not only volunteers at the Houston Museum of Natural Science, but is really an advocate for rock science with students. Neal is very active in the HGMS which provides rock/mineral/fossil kits to schools. He speaks about once a month at these schools, where the most popular topic is the rock cycle. In addition, Neal teaches

classes on lapidary and silversmithing (jewelry-making) at the Houston Gem and Mineral Society (HGMS); he and his wife Inda worked to get the HGS a booth at the HGMS show.

Neal has been involved in Science Olympiad training for Junior High and High School students. His formula for success is a cycle of two years of Rocks and Minerals followed by two years of Paleontology. The teams he has worked with have won first place on the national level for both topics.

This year, Neal helped take the Petroleum Academy students on a field trip to High Island. He is also involved in downtown walking tours of building stones taking as many as 75 kids at a time, sometimes in the rain. ■



**Neal Immega**

Images are **Weixin (Wayne) Zu's** passion: borehole images, seismic images, and images of people. Wayne arrived in Houston when he joined Schlumberger in 1998. He specializes in borehole image interpretation in his work, but in his spare time he is still interested in different types of images including the images of people. His interest in photography lead Wayne to volunteer to be the photographer for the HGS and AAPG. Wayne has tirelessly attended every important HGS function, photographing awardees, honorees and just about anything else the HGS asks him to take a picture of during one of our events.



**Weixin (Wayne) Zu**

Wayne has a PhD degree in Geology from the University of Michigan (1996), worked as a post graduate in the Arizona State University, then joined Schlumberger in 1998, and still works there as a principal geologist. He has been a member of AAPG since 1992, volunteered in activities of Houston Geological Society (HGS) and Gulf Coast Association of Geological Societies, and received the HGS Rising Star Award (2012). ■



## 2016-2017 Chairman's Award

*Chairman's Award honors members whose extraordinary efforts or unique contributions to their committee deserve special recognition.*

**Bill Dickson** has been involved with almost every Africa conference. He has been a dedicated volunteer on the 2016 Africa Conference Technical Committee including attending regular organizing meetings, sharing ideas and plans, and recruiting an associate, Sam Loree, to assist the marketing effort. He is familiar with the subject matter and actively promoted the 2016 Africa Conference while attending two conferences as well as in client meetings. Bill solicited contributions to the technical program, made sure the abstract deadlines were achieved, coordinated efforts of the Session Chairs (he was one of them), fitting talks into our Themes with the help of the presenting authors, and helped in building the final schedule. At the conference itself, Bill Dickson as one of the Session Chairs, had the pleasant duty of introducing speakers and thanking them for their talks.



**Bill Dickson**

Although it takes time and attention, Bill has signed up for the next conferences in London (2017) and Houston (2018). Bill Dickson's small-town upbringing stressed volunteerism and its benefits and in this case, the behind-the-scenes knowledge gained and the collegiality of fellow volunteers more than paid for his efforts as an HGS volunteer. ■

**John Moran** was an active volunteer on the HGS Africa Conference; he chaired the new vendor session titled "Geological and Geophysical Workshop", which had never been done at the Houston based Africa Conference. The HGS alerted exhibitors that we would have a special session where they could give a vendor-oriented technical presentation on their product and or services. This was done for geophysical companies at the 2015 London Africa Conference with great success and John suggested that we expand the session to include geological presentations. John reviewed, selected the presentations, and ran the very successful Geological and Geophysical workshop session at the 2016 HGS Africa Conference. ■



**John Moran**

**Cheryl Desforges** is an active member of the Continuing Education Committee. Cheryl's efforts have helped the short courses and field trips provided by the HGS realize our goal of providing quality technical training for HGS members and the greater geological community at a reasonable cost. She has been a driving force in this group and is being recognized by Thom Tucker, Chairman of the Continuing Education Committee. ■



**Cheryl Desforges**

**Barbara Hill** (Schlumberger) has given exceptional and sincere efforts through the years in support of the HGS Applied Geoscience Conference through speaker recommendations, participation, and development of her company's sponsorship, attendance and speaker participation. ■



**Barbara Hill**

## 2016-2017 President's Award

*President's Award honors members whose extraordinary efforts or unique contributions in a fiscal year or over a short period of time deserve special recognition.*

**Phil Towle** was the Technical Chair of the 2016 HGS Africa Conference. Phil worked very hard on soliciting technical talks, laying out the abstract guidelines, writing visa letters and generally organizing the entire 2016 Africa Conference. The result was a brilliant technical conference that made the HGS look very professional. Phil's contribution to this technical conference is what made it a quality event that we can all be proud of having the HGS name associated with the event. ■



**Phil Towle**

### **Tami B. Shannon**

- HGS Editor (2016-2017)
- HGS Editor-Elect (2015-2016)
- HGS Member (2008-2017)

**Tami Shannon** is a multi-disciplinary IT systems and applications specialist at Oxy with over 20 years' experience in geographic information systems (GIS) technology. She supports GIS within various geological and geophysical applications and systems and is a subject matter expert in geospatial data management and data integration, specializing in ESRI-based web map publishing.

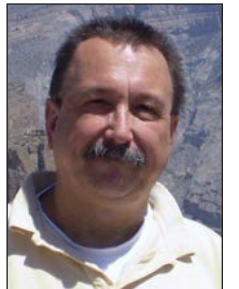


**Tami B. Shannon**

Tami has a passion for communication and for writing, which understandably guided her towards becoming the HGS *Bulletin* Editor. She actively participated as Editor-Elect in 2015-2016, and as Editor in the 2016-2017 year, and has focused on trying to continue the *Bulletin's* historical status, while dually preparing for the transition to an e-Bulletin.

Tami has done yeoman's work on moving the HGS to a digital *Bulletin*. She investigated multiple digital magazine platforms and helped us work through many budgetary concerns and website issues that were the direct result of making this change. Once the HGS board made the decision to make the HGS *Bulletin* a digital publication, she put in the work that made this a reality. This single change to the HGS *Bulletin* will significantly help the HGS reduce its overhead cost structure and to become much more environmentally friendly. ■

**L. Taras Bryndzia** from Shell Oil has given exceptional efforts the years in support of the HGS Applied Geoscience Mudrocks Conference through speaker recommendations, participation, core program development with foundation Shell Cores, and development of his company's sponsorship, attendance and speaker participation. ■



**L. Taras Bryndzia**

**John Breyer** from Marathon Oil has given exceptional efforts over the years in support of the HGS Applied Geoscience Mudrocks Conference through speaker recommendations, speaker participation, and development of his company's sponsorship, attendance and speaker participation. ■



**John Breyer**



## 2016-2017 Rising Star Award

*Rising Star Award honors individuals who are relatively new to the HGS and have made significant and promising contributions to the enhancement and success of the society.*

**Ryan Yarrington** has been a dedicated volunteer with the HGS International Group working the registration table. He never misses a meeting. ■



**Ryan  
Yarrington**

**Nkechi Odumodu** was a dedicated volunteer for the 2016 Africa Conference. She was instrumental in the assimilating the judging results of the presentations and delivering it on short notice at the end of the conference. ■



**Nkechi  
Odumodu**

**Stephen Adeniran** has been a dedicated volunteer working the HGS booth at NAPE and many of the local conventions. He also works on the Earth Science Week Committee. ■



**Stephen  
Adeniran**

**Brad Hammel** served on the 2016 Africa Conference committee as Chairman of the Judging Committee. He was in charge of all final awards. ■



**Brad Hammel**

## 2016-2017 Memorial Award



**Marvin Smith**

**Winona LaBrant-Smith - In Memory of Marvin Smith.**

Winona is the wife of Marvin Smith. Marvin was a pillar of the geological community for at least 30 years. He was a dedicated HGS volunteer and we will greatly miss his contributions to the HGS. Winona has also been involved with the HGS, not only through Marvin's volunteerism, but through her on activities on the HGS Auxiliary.

## 2016-2017 Corporate Stars

*The Corporate Star Award honors companies who have made significant contributions to the Houston Geological Society. These contributions can be monetary (cash) or in kind (donation of services, materials, or an individual's time).*

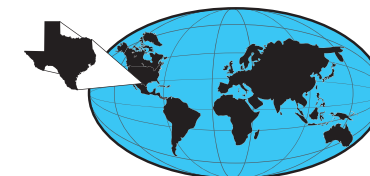
### Platinum



### Gold



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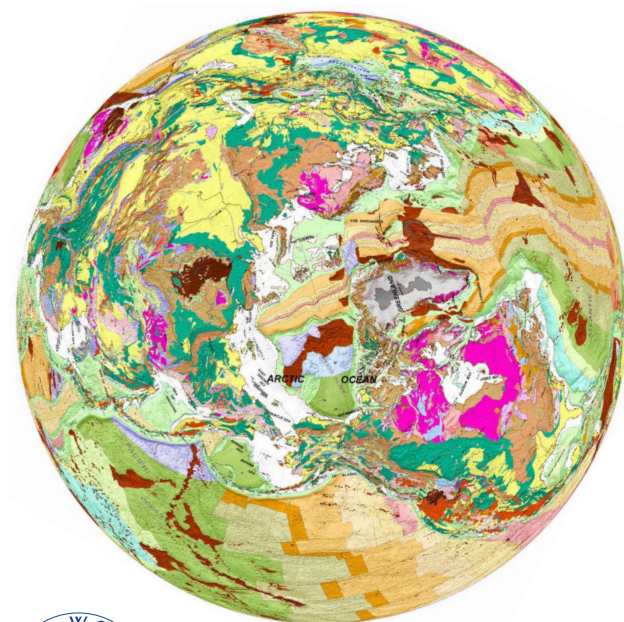


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## 2016-2017 HGS Teacher of the Year

*This award has been established to honor individuals whose extraordinary efforts or unique contributions are in earth science education.*

I can't say that I grew up knowing that I wanted to become a teacher at all. In fact, one of my high school teachers discouraged me from teaching by telling me that I would "be disappointed with the profession". Because of this, I did not even begin the courses needed to be an educator until two years after I had my first degree. Yet, now, when I stop to think about it, I discovered that I had spent most of my youth "teaching" others.



Kathryn A. Barclay

I grew up in Cleveland, Texas, on a small farm called Hilltop Herb Farm and was given my first job at the age of six and started paying into social security at 7 years old! My grandparents founded this farm which grew and sold herbs, ferns, scented geraniums, in addition to jams, jellies and teas made in our kitchens to people worldwide. We also served meals using these items and would go around to the tables and explain how to care for and use the plants and products. By my early teens, I was regularly "teaching" our guests and grew comfortable interacting with adults in this type of environment.

Being raised in an agricultural environment, I was active in 4-H and FFA in school. My involvement with many different projects enabled me to develop skills in public speaking, leadership and teaching methods. As a junior leader, I was given the opportunity to "teach" younger members in a variety of areas. While in high school, I became an exchange student with the American Field Service. Participating in the summer program, I lived with a host family and attended school in Puerto de San Antonio, Chile, which was under a military dictatorship at the time. Upon my return, I was asked to give presentations to service organizations about my experiences. I was recognized for my achievements with a Houston Livestock Show and Rodeo Scholarship to study Animal Science at Texas A&M University. I completed my Masters of Education in Science Curriculum and Instruction from the University of Houston.

My background has enhanced and shaped my skills as a science teacher by enabling me to expose my students to the many applications of science and has allowed me to teach from personal experiences. I have proudly worked to help my students

grow and to become successful adults. One such student that I am especially proud to have taught is Jonathan, now a pilot for United Airlines. He showed up at my door one day when he was in 7th grade asking for help with his science fair project and it seems like he never left. Not only did he later become my student, he went on to become active in Teens Against Drugs that I sponsored and served as the President during his 8th grade year. Since the first day that I met him, Jonathan has discovered science in my class, learned to lead others, and has grown into a person who always put others first. In high school, his accomplishments include recognition as "Youth of the Year" by the K.I.N.D.E.R. Clinic, a non-profit clinic that works with children exposed to drugs, alcohol and HIV by their mother during pregnancy. When he learned of this award, Jonathan asked me to accompany him to the banquet just as he did when he was recognized by the Prudential "Spirit of Community" award, the "I Have A Dream" Essay Contest, and when he too won a Houston Livestock Show and Rodeo Scholarship. I feel blessed to have taught a truly special student who has chosen me to be not only his mentor but as he says "his second mom". Even now, years after he was in my class and is in his 30's, Jonathan remains in contact with me to chat and seek advice about his life activities and projects. Jonathan, is just one of many outstanding students that I have been fortunate enough to of taught and help them become the successful adults that they are today.

In addition to teaching for the past 26 years, I also serve as part of the leadership team for the Texas Earth Science Teachers Association. My primary focus for the organization is to plan the strand of workshops and short courses that is featured at the annual Conference for the Advancement of Science Teaching (CAST) and create the electronic newsletter, *The Tailings*. I also serve on the Board of Directors for the Science Teachers Association of Texas (STAT) and have served as the Regional Director of the National Earth Science Teachers Association (NESTA). In my quest to learn as much as I can about science I have participated in professional development opportunities across the United States and even to Iceland. Some of these include attending the Woodrow Wilson Environmental Institute at Princeton University to working with ACT<sup>®</sup> on test development in Iowa. Along the way, I have been fortunate to be honored for my work by many different organizations in addition to the Houston Geological Society's Award.

My being a teacher is a credit to my family, past teachers and students. I do no less for my students than my teachers did for me when I was growing up. I teach so that I can give to all of my students what I was given by them – the opportunity to experience the wonders of science, leadership and engage in community service. ■

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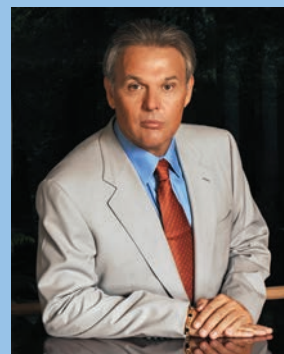
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# June 2017



## GEOEVENTS

Sunday

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

<b>Reservations:</b> The HGS prefers that you make your reservations on-line through the HGS website at <a href="http://www.hgs.org">www.hgs.org</a> . If you have no Internet access, you can e-mail <a href="mailto:office@hgs.org">office@hgs.org</a> , or call the office at 713-463-9476. <b>Reservations for HGS meetings must be made or cancelled by the date shown on the HGS Website calendar, normally that is 24 hours before hand or on the last business day before the event.</b> If you make your reservation on the Website or by email, an email confirmation will be sent to you. If you do not receive a confirmation, check with the <a href="mailto:Webmaster@hgs.org">Webmaster@hgs.org</a> . Once the meals are ordered and name tags and lists are prepared, no more reservations can be added even if they are sent. <b>No-shows will be billed.</b>				2	Don't wait, make your reservations online at <a href="http://hgs.org">hgs.org</a>	3
4	5	6	7	8	9	10 2017 HGS Skeet Shoot <i>Greater Houston Gun Club Houston TX, Page 18</i> 2017 HGS Guest Night <i>Big Bones in Big Bend Houston Museum of Natural Science Houston TX, Page 36</i>
11	12	13 HGS Board Meeting 6 p.m.	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	Members Pre-registered Prices: Dinner Meetings members..... \$45 Emeritus/Honorary members..... \$40 Student members ..... \$10 Nonmembers & walk-ups ..... \$50 Except - Env. & Eng. .... \$30 Nonmembers & walk-ups ..... \$35 Emeritus/Honorary members..... \$15



**June 10, 2017**  
HGS Skeet Shoot  
*Greater Houston Gun Club  
Houston, TX (Page 8)*

**June 10, 2017**  
HGS Guest Night  
*Big Bones in Big Bend  
Houston Museum of Natural Science  
Houston, TX (Page 10, 36)*

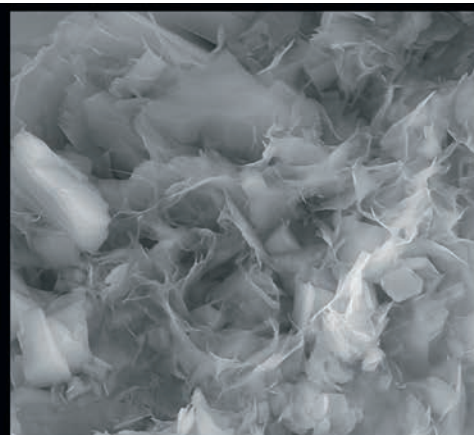
**August 18-22, 2017**  
AAPG Geosciences Technology  
Workshop  
*Astrogeology Total Solar Eclipse  
Field Seminar, Casper, WY*

**Aug 31- Sept 1, 2017**  
Africa Conference  
*London (Page 2)*

**October 16, 2017**  
HGS Golf Tournament  
*Sterling Country Club and  
Houston National Golf Club  
(Page 20)*

**November 8-9, 2017**  
HGS Applied Geoscience  
Conference  
*Geomechanics in Unconventionals  
Houston, TX (Page 22)*

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# Guest Night June 10 at the Houston Museum of Natural Science: Big Bones Found in Big Bend

By Pete Emmett (Guest Night Chair), Linda Sternbach and Dave Reynolds



This year's Guest Night will be held at Houston Museum of Natural Science (HMNS). This year we have a new caterer with a new menu, and HGS is renting the entire second floor of the Museum including the Gem and Mineral Hall. Come to the museum early, around 4 pm, and see the Morian Hall of Paleontology during public hours till 5 pm. At 5:45 pm, go to the Burke Baker Planetarium. Guest Night attendees will be seated for the first of two free planetarium shows. Planetarium seating is open till seats are filled, with the first show starting at 6:00 pm. A second planetarium show queues up at 6:15pm to see the 6:35 pm show. At 7:00 pm Guest Nights attendees will be seated on the second floor of the HMNS for dinner. Dinner seating will be among the fantastic exhibits including the Cullen Hall of Gems and Minerals, Hamman Hall of Texas Coastal Ecology, Farish Hall of Texas Wildlife, and Frenslley/ Graham Hall of African Wildlife.

At 8:15 pm, guests will enter the Giant Screen Theater to welcome the student award winners of the Engineering and Science Fair, followed by Don Corrick's talk on "Big Bones in Big Bend." A post talk 3D movie is included for those who wish to stay late to

**June 10, 2017**  
**Houston Museum of Natural Science**  
 7:00pm to 10:30pm  
 Free planetarium shows at 6:15pm and 6:45pm  
 Adults \$60  
 Children under 17 \$30  
 Dinner and drinks inside the museum  
 Paleo lecture in the giant screen theater

see the spectacular IMAX experience. HGS thanks the following corporate sponsors: Thunder Exploration, Schlumberger, Roxanna, TGS, ConocoPhillips, Drilling Info, and Walter Oil and Gas Corp. Get your tickets to Guest Night, June 10, online at the HGS website [www.hgs.org](http://www.hgs.org) by clicking the banner or going to the website monthly calendar for June. Learn more about Big Paleontology at <https://www.nps.gov/bibe/learn/nature/dino.htm>. To make a donation to help fund the new paleo exhibit at Big Bend National Park, mail a check to P.O. Box 200, Big Bend National Park, TX 79834, or donate online at [www.bigbendfriends.org](http://www.bigbendfriends.org).

Guest Night speaker Don Corrick has been the Park Geologist at Big Bend National Park for the past 15 years. Don fell in love with the park while he was working in Midland, Texas, as a petroleum geologist for small oil companies, including working for George W. Bush at Arbusto Energy. Corrick holds a BS degree in geology from Baylor University, and a MS in geology from Sul Ross State University. Among the major projects that Don has worked on at Big Bend include the 2011 revised geologic map of the park and the just-opened Fossil Discovery Exhibit. ■



*Chasmosaurus wick lehman skull*



*Alamosaurus dig*



# Serving the HGS Professional Community by Sharing Practical Applied Geoscience: the HGS Mudrocks Applied Geoscience Conference (AGC)

By Frank Walles and Andrea Peoples, HGS AGC General Co-Chairs

John Jordan, HGS President, opened the eleventh year of the Annual Houston Geological Society Applied Geoscience Conference titled: “Integrated Approaches to Unconventional Reservoir Assessment and Optimization” on March 7th and 8th, 2017 at the Anadarko Petroleum Conference Center in The Woodlands, Texas. This popular two-day HGS event was again filled to capacity.

The latest research on unconventional reservoir characterization was developed to provide the attendees practical applied methods for optimization of recovery. The value of this event is to include the practical applied geoscience from top contributors of “the radical middle” (the research intersection of Industry, Government and University), as defined by Dr. Scott W. Tinker, Director of the Bureau of Economic Geology of the State of Texas. This Houston Geological Society event serves our extended membership community and has proven to be a high sharing, training, and cost-effective event for both geoscientists and engineers, since such a superior, effective expert event between the multiple research participants would be cost and competitor-prohibitive for a single company.

As an added highlight to this event, the luncheon key note speaker, Dr. Jeremy Boak, Director Oklahoma Geological Survey, gave a presentation titled: “Earthquakes in Oklahoma: Trends in Injection-Induced Seismicity and Regulatory Response”. Dr. Boak provided the audience with the latest insights into the relational spatial data sources of induced seismicity associated with the industry practice of deep subsurface injection of associated oilfield-produced water. The potential subsurface impact of the injection of oilfield-produced waters within the Arbuckle Formation in Oklahoma (especially within the Ellenberger Formation in Texas) is of economic and safety interest to the public and industry.

The HGS Mudrocks AGC conference committee of more than forty-five (45) HGS members organized author contributions that included:

1. Twenty-three (23) recognized experts from industry, government, and university as oral program speakers within eight (8) formal sessions,
2. University research (including industry support) through 15 university graduate and under-graduate research poster presentations, and
3. Two (2) Industry complete formation core examples of major developing unconventional resource plays including



Luncheon key note speaker, Dr. Jeremy Boak, Director Oklahoma Geological Survey

the Wolfcamp Formation (presented by the event host of Anadarko Petroleum Corporation) and the Utica/Pt. Pleasant Formation (presented by Shell).

Critical to the success of this year’s event were these recognized experts speakers, as well as the organizing committees efforts. This year’s topic technical oral program event included 16 HGS member Session Co-Chairs that had developed the invited presenter sessions on:

- Diagenetic Components of Mudrocks and their Impact on Production
- Nanoscale Intra-Kerogen Porosity and Hydrocarbon Phase Producibility/Wettability
- Predicting Petrophysical Flow Properties Using Digital Rock Physics
- Geophysical Methods for Producibility, Fracability and GeoHazards
- Hybrid Unconventional Opportunities
- Tight/Complex Reservoirs Opportunities
- Geo-Engineered Completions/Geomechanics
- Operator Cases of Integrated Applied Geoscience for Fun and Profit.

The HGS is honored by the acceptance of these expert speakers. The specific author program of these speakers and their presentation titles are available by referring to the previous months HGS Bulletins. Oral program speakers received HGS Speaker Awards of large polished fossil rock specimens provided through the efforts of our HGS Speaker Awards Committee (Mike Deming).

The invited University undergraduate and graduate presenters (with invitation through their professors) received up to \$500 for travel expenses and complimentary admission to the event. Attendee participation included voting for the “Best Poster Award” within a competition of the oral presenters of the University Research Poster Program. The Best Poster Award was for technical/research excellence and for the expressed ability to communicate their research to the attendees. For 2017, the voting by the attendees resulted in awarding one “Best Poster Award” and two “Runner Up” Best Poster Awards, due to the very close attendee voting count.

The “Best Poster Award” went to the Undergraduate Researcher – Ane Slabic, of the University of Houston for her important research effort Poster titled: “Uranium, Thorium, and Lead Isotope Geochemistry of Petroleum Source Rocks: An Example from the Eagle Ford Group, Texas”.

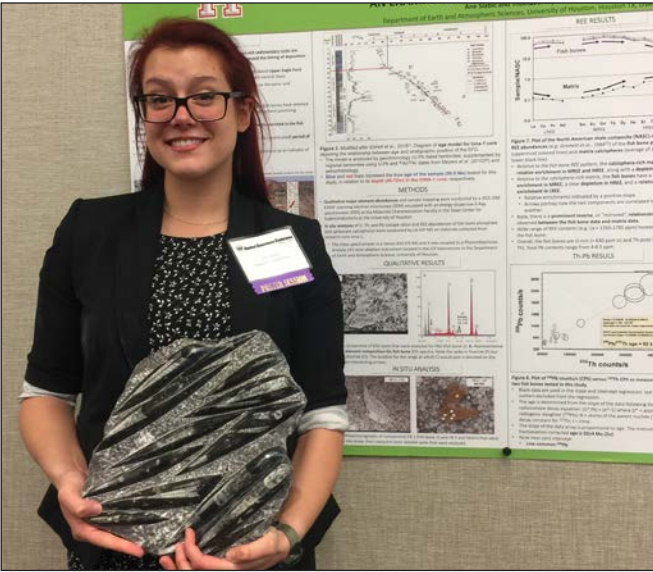
The “Best Poster Runner-Up Award” was presented to Anna Krylova (and Genneady Goloshubin) of the University of Houston for their poster titled: “Dispersive Properties of a Fractured Fluid-Saturated Layer”.

The “Best Poster Runner-Up Award” was also presented to Ibukun Bode (and G. Michael Grammer and Beth Vandenberg) for their poster titled: “NMR characterization and pore-scale Imaging in Mississippian-aged Carbonate Mudrocks of the Southern Midcontinent”.

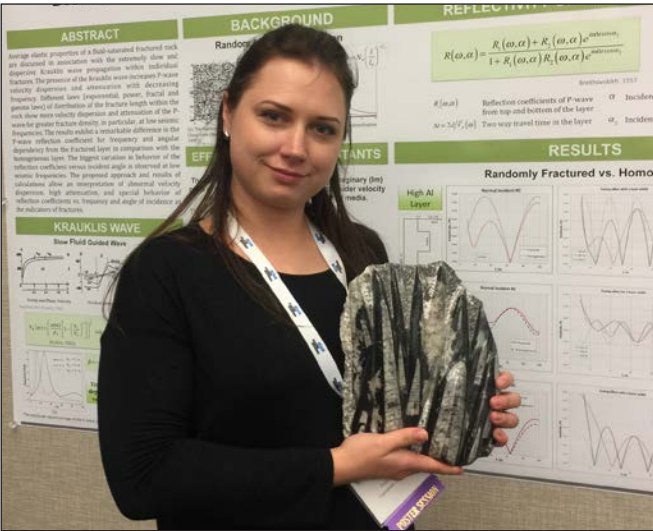
An evening social event at the adjacent Landry’s restaurant provided additional opportunities for networking as well as time for follow-up discussions with speakers and fellow participants.

The HGS provides this industry-developed event to fulfill a need for focused sharing of advancing applied geoscience technologies within mudrock reservoir characterization for a combined education and scientific-advancement service for the HGS member community.

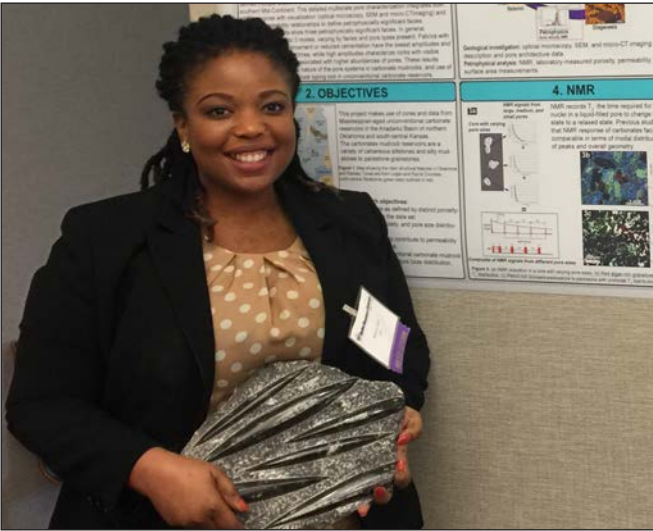
The event was generously supported by many industry sponsors, including the event location (within conference facilities of Anadarko Petroleum) where we are especially grateful for the generosity of Anadarko to host this event. The Houston Geological Society AGC technical program committee member, **Wayne Camp**, was especially important in arranging this venue opportunity. ■



Best Poster Award winner – Ane Slabic, University of Houston




Best Poster Runner-Up Award winner – Anna Krylova (and Genneady Goloshubin), University of Houston



Best Poster Runner-Up Award winner – Ibukun Bode (and G. Michael Grammer and Beth Vandenberg), University of Houston



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# UH Team Wins World Finals of 2017 AAPG Imperial Barrel Award Competition

By Paul Mann

A team of five UH PhD and MS graduate students from the University of Houston Department of Earth and Atmospheric Sciences the University of Houston won the World Finals of the 2017 AAPG Imperial Barrel Award Competition. The team competed on April 1, 2017, in conjunction with the Annual Convention of the American Association of Petroleum Geologists (AAPG) which held at the George R. Brown Convention Center in Houston on April 2-5 and was attended by 7000 geoscientists. The AAPG is one of the world's largest geologic societies with over 38,000 members in over 100 countries.



From left to right: UH IBA team members: Walter Reed, Eric Lunn (captain), Delaney Robinson, and Leiser Silva (team member not pictured: Andrew Steier)

AAPG's IBA Program is an annual prospective basin evaluation competition for geoscience graduate students from universities around the world. University teams compete to win scholarship funds for their geoscience department and the international recognition that comes from competing in or winning the competition. The UH team received Imperial Barrel Award trophy and a check for \$20,000 which will be used in the coming year to support the activities of the Department of Earth and Atmospheric Sciences and the AAPG student "Wildcatters" chapter at EAS: [www.uh.edu/nsm/earth-atmospheric/student-organizations/](http://www.uh.edu/nsm/earth-atmospheric/student-organizations/)

The UH team consisted of five EAS PhD and MS graduate students: Delaney Robinson (PhD), Walter Reed (MS), Eric Lunn (PhD, Team Captain), Andrew Steier (MS), and Leiser Silva (MS). The team's faculty advisors include Paul Mann, John Castagna, Julia Wellner and Kurt Rudolf. Industry advisors include Mike Liebelt and Mark Richardson. The UH team won their AAPG Gulf Coast Section on March 17, 2017, in a field of 9 other teams from Texas, Louisiana, Mississippi, and Alabama: <http://www.uh.edu/nsm/earth-atmospheric/news-events/stories/2017/0321-iba-competition.php>

IBA students have the chance to use state-of-the-art technology on a real dataset, receive feedback from an industry panel, impress potential employers in the audience, and win cash awards for their school. A judging panel of six, professional petroleum geoscientists select the winning team on the basis of the technical quality, clarity and originality of presentation. The program is rigorous and contributes to AAPG's mission of promoting petroleum geoscience training and advancing the careers of

geoscience students. Started by AAPG in 2006, the IBA program currently involves 455 universities in 61 countries.

In this global competition, university teams analyze a dataset (geology, geophysics, land, production infrastructure and other relevant materials) in the eight weeks prior to their local competition. Each team delivers their results in a 25-minute presentation to a panel of expert judges. The dataset the UH EAS team presented was the Taranaki basin, New Zealand. The other 11 teams participating in the finals held on April included the winners of the seven international regionals outside of the US and the six, US-based AAPG sections.

The second place IBA finals award (Selley Cup) went to Eotvos Lorand University in Budapest, Hungary, representing the AAPG Europe region, and the third place award (Stoneley Medal) went to Curtin University of Technology in Perth, Australia, representing the AAPG Asia Pacific region. The remaining AAPG international regions who competed in the finals on April 1 included the Latin America and Caribbean region (Universidad Industrial de Santander, Colombia), Middle East Region (Sultan Qaboos University, Oman), Africa region (Nnamdi Azikiwe University, Nigeria), and Canada region (University of Alberta).

The remaining US AAPG sections that competed in the April 1 finals included: Pacific section (San Diego State University), Rocky Mountain section (Colorado School of Mines), Southwest section (University of Texas at Dallas), Mid-Continent section (University of Kansas), and Eastern section (Western Kentucky University).

UH Team Wins 2017 Imperial Barrel Award continued on page 43





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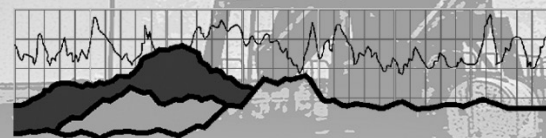
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## UH Team Wins 2017 Imperial Barrel Award continued from page 41

Financial support to cover the costs of travel and other programs expenses cost about \$500,000 per year and make the IBA program the single, costliest program within AAPG. Major corporate donors to the AAPG IBA program include: Anadarko, Devon, Chevron, Saudi Aramco, and Schlumberger.

Since 2006, eleven universities that have won the first place, Imperial Barrel Award and include: University of Aberdeen (2006), University of Oklahoma (2007), Imperial College London (2008), Moscow State University (2009), Institut Francais du Petrole (2010), University of Texas at Austin (2011), University of Louisiana at Lafayette (2012), University of Utah (2013), University of Louisiana at Lafayette (2014), Royal Holloway University (2015), University of Texas at El Paso (2016), and University of Houston (2017).

### History of the University of Houston in the IBA Competition from 2012 to Present:

- 2012 – Gulf Coast 3rd Place Finish: [www.uh.edu/nsm/earth-atmospheric/news-events/stories/2012/0403\\_ibaCompetition.php](http://www.uh.edu/nsm/earth-atmospheric/news-events/stories/2012/0403_ibaCompetition.php)

- 2013 – Gulf Coast 3rd Place Finish: [www.uh.edu/nsm/earth-atmospheric/news-events/stories/2013/0424\\_aapgAward.php](http://www.uh.edu/nsm/earth-atmospheric/news-events/stories/2013/0424_aapgAward.php)
- 2014 – Gulf Coast 3rd Place Finish: [www.uh.edu/nsm/earth-atmospheric/news-events/stories/2014/0325-iba-competition.php](http://www.uh.edu/nsm/earth-atmospheric/news-events/stories/2014/0325-iba-competition.php)
- 2015 – Did not place: [www.uh.edu/nsm/earth-atmospheric/news-events/stories/2015/0422-iba-comp.php](http://www.uh.edu/nsm/earth-atmospheric/news-events/stories/2015/0422-iba-comp.php)
- 2016 – Gulf Coast Second Place Finish: [www.uh.edu/nsm/earth-atmospheric/news-events/stories/2016/0422-barrel-award.php](http://www.uh.edu/nsm/earth-atmospheric/news-events/stories/2016/0422-barrel-award.php)
- 2017 – Gulf Coast First Place Finish: March 17, 2017: <http://www.uh.edu/nsm/earth-atmospheric/news-events/stories/2017/0321-iba-competition.php>
- 2017 – Imperial Barrel Award (First place finals finish): April 2, 2017: <http://iba.aapg.org/>

More information on IBA program and photos of the top three teams: <http://iba.aapg.org/>. ■

## Searching for Stones – AAPG Buildings Stones Tour

By Neal Immega

It was a beautiful cool day in Houston, too nice to be inside the convention center, and so we went for a two mile walk among Houston's "vertical outcrops", the igneous, metamorphic, and sedimentary rocks that make up the downtown buildings. It is fortunate that architects go out of their way to display the most fantastic colored stones they can find. Following in the footsteps of Martha Lou Broussard, who originated the tour age ago, we began with beautifully burrowed limestones in a pavement at Discovery Green. We found dozens of granites, a few diorites and a lovely fish scale labradorite. The Hilton has dramatic marble

and Wells Fargo has tried to corner the market on very green serpentine. The most common sedimentary rock downtown is Indiana Bedford oolite which gets carved into the most imaginative decorations, e.g. carved cow skulls on the Esperson building). Someone remarked that she had not seen so much limestone since she left Indiana. Shell has plated its two buildings with Italian travertine showing marvelous growth structures (no pictures, said the guard!). The maps and itinerary are on the HGS.org field trips page and you can contact me to take your organization on a free tour at [n\\_immega@swbell.net](mailto:n_immega@swbell.net). ■



Starting the tour in Discovery Green at the whispering stones, carved from Bedford Oolite.



# Party on the Patio

## 2017 HGS Crawfish Boil and Shrimp Peel

By Larry Quandt

Friday, April 21 started out just like any other day except for the anticipation in the air. The HGS Annual Crawfish Boil and Shrimp Peel was going to be held at Bear Creek Park on the west side of Houston. Approximately 125 people preregistered for the event and an additional 20 people walked up and registered at the event.

The preparation for the Crawfish Boil started in October 2016 by announcing to the membership on the HGS website to save the date and a kick-off meeting of the committee personnel took place. The date of the event was picked because it was after the AAPG Convention in Houston and Easter and before the MS 150 in Austin. The menu was set and preliminary duties for the committee members were assigned.

The weather on the day of the event was spectacular, with highs in the 80's and a nice breeze to make it comfortable. All of the committee member volunteers were busy completing their duties for the event which ran from noon until six o'clock. HGS Office Director Andrea Peoples and her husband Keith Peoples joyfully volunteered to cook the food for the day. ■



The venue was perfect for the event. The picnic shelter would have come in hand if it had rained, which it didn't. The band Platinum Players began playing Cajun music and Rhythm and Blues for the crowd that was beginning to gather early in the afternoon.



The attendees gleefully enjoyed eating crawfish, shrimp, corn and potatoes out of beer can flats (great idea for serving trays). Beer was provided by one of the many sponsors, Town-In-City Brewing; HGS President John Jordan presided over the beer-serving table.



Friendships were rekindled and new friends were made amongst the attendees and new connections were added to business networks. After the success of this year's event, next year I believe the event will be even bigger.

### Thank You to Our Much Appreciated Sponsors

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### Thank You to Our Volunteers

- Larry Quandt
- Rachael and Lance Wilson
- Jacky Jordan
- John and Dawne Jordan
- Mike Deming
- Donna Davis
- Claudia Ludwig
- Dave Miller
- Keith and Andrea Peoples
- Daxz De La Cruz
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# HGS Welcomes New Members

## New Members Effective April 2017

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Aram Derewetzkyy  
Ada Dominguez  
Matt Dycus  
Kevin Foto  
Morell French  
Nathan Ganser  
Christopher Gonsalves  
Kathleen S. Haggar  
Matt Hammer  
Lindsey Henry  
Russell Hickerson  
Thomas Hotze  
Susan Howes  
Akinola Idowu  
Jenny Johnson  
Evan Jones  
Mojji Karimi  
Donald Koglin  
Jillian Kurek

James K Markin  
Gregg Martinez  
Mark Mathisen  
Jeremiah Moody  
Judy Mooney  
Sam Morrison  
Azer Mustaqeem  
Luis Navarro  
Michelle Neuner  
Stephanie Noonan  
John Northcott  
Gloria Okome  
Melissa Penfold  
Nathan Robinson  
Philip Rowell  
Scott Sale  
Fumitoshi Sato  
Lindsey Shanks-Abel  
Shawn Shapiro  
Russell Richards  
Bill Sharp  
Gregg Sheridan  
Julio Tamashiro  
Luis Tapia  
Helena Van Dieren Donck  
Kathleen S. Wall  
Jenny Wolfe

### ASSOCIATE MEMBERS

Dylan Danos  
Lisa Felske  
Cora Poche  
Susan Sterner  
  
**STUDENT MEMBERS**  
Erica D. Allen  
Claire Andrews  
Abigail Barrett  
Cameron Blake  
Kenneth Boling  
Megan Brown  
Natalie Castro  
Igwenagu Chidinma  
Meniru Irene Chioma  
Seth Chronister  
Sarah Clark  
Preston Scott Cook  
Lauren Cross  
Katherine Drummond  
Kalli Dubois  
Savannah Lee Ezelle  
Victor George  
Ross Grant  
Carolyn Hirshberg  
Jing Hua

Kyungho Jeon  
Fredericka Jordan  
Chinwendu Grace Kalu  
Alex Koch  
Chiristopher Kyler  
Liam Lauckner  
Richard Mathews  
Tyler Mowrey  
Joshua Narabal  
Esther Okoye  
Kayode Olatunji  
Amaeche Paschal  
Avani Patel  
Molly Pattullo  
Shilpika Podali  
Josue Isreal Reyes-Muaiz  
Mame Sarr  
Nina Schulze  
Saha Sourar  
Kevin Toth  
Jacob Travis  
Mahnaz Wahidi  
Niles Wethington

Welcome New Members

**Loyd Tuttle**  
loydtuttle@comcast.net

**Bob Liska**  
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## Book Review by Peter R. Rose, PhD

Thomas E. Ewing, 2016

*Texas Through Time: Lone Star Geology, Landscapes, and Resources*

Published by Texas Bureau of Economic Geology, Austin TX; 431 p.

USBN 978-1-970007-09-1 (hardcover); ISBN:978-1-970007-09-1 (paperback).

For more than 80 years, geoscientists involved in Texas geology, as well as other interested Texans, relied on the 1933 classic, oft-reprinted Bulletin 3232, *Geology of Texas (Stratigraphy)* for general information about the geology of the state. Companion volume 3401 covered structural and economic geology. Since the mid-1930s, almost every other state geological survey published at least one summary of its own unique geology – except Texas.

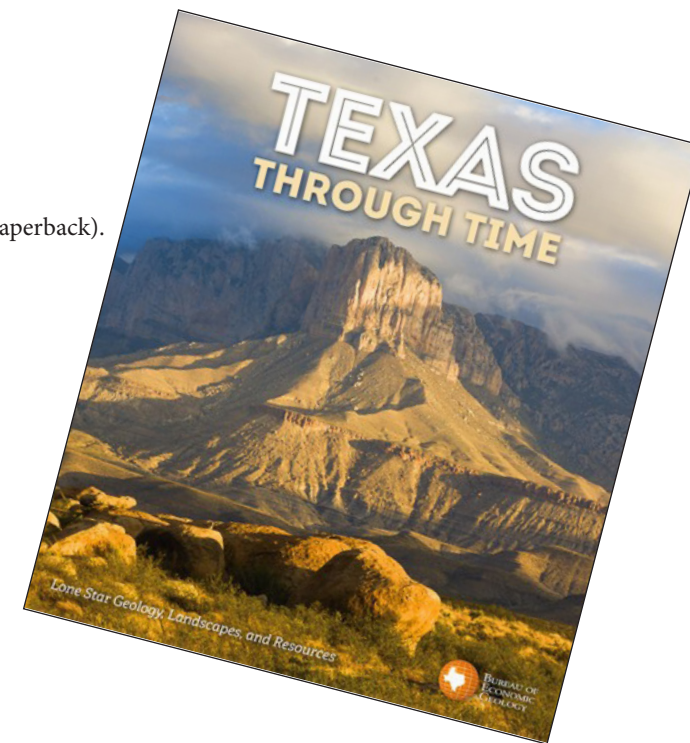
No more. With the 2016 publication of *Texas Through Time: Lone Star Geology, Landscapes, and Resources*, the Texas Bureau of Economic Geology has far eclipsed Bulletins 3232 and 3401, generating a spectacular, innovative, and wide-ranging summary of Texas geology, written by Dr. Tom Ewing, with stellar support from the TBEG staff. It was worth the wait.

Lavishly illustrated, with more than 150 arresting color photographs and 225 superb color diagrams, *Texas Through Time* is visually compelling. Tom Ewing's authoritative text is clear, current, comprehensive, yet remarkably concise (467 pages), presented in a 9.5 x 11" coffee-table format. The volume is available in both hard-back (\$49.95) and soft-back (\$35.00) versions). Either way, it is a bargain.

From its inception, *Texas Through Time* was designed to be used by high-school science teachers and students, literate laypeople, as well as practicing geologists looking for the regional "big picture". It incorporates all important current geological concepts throughout the text, such as plate-tectonics, sequence stratigraphy, "deep time", depositional models, petroleum systems, petroleum generation-migration, evolution of the Gulf of Mexico basin, and global anoxic events. Innovative approaches include the presentation of important concepts and questions (in offset text-boxes) as they are needed, and the frequent insertion throughout the text of "Great Places to View Texas Rocks", listing specially apt localities, with descriptions and photos.

In addition to introductory and concluding essays, *Texas Through Time* comprises ten chapters:

1. Landscapes of Texas: Journeys across Texas, landscapes and ecoregions
2. What is Geology? Goals, methods, key concepts
3. Texas in space and time: How old is Texas, where has it been, and its neighbors
4. A long time ago in a world not so far away: Texas in the Proterozoic
5. Buried mountains and salt seas: Texas in the Paleozoic



6. Life in a newborn Gulf: Mesozoic seas of Texas
7. A world re-formed: Texas Cenozoic
8. Humans in the geological landscape: the last 20,000 years
9. Earth resources: Soils, minerals, water and energy
10. Earth impacts and hazards: Geology and the environment

The book concludes with an Appendix, "Great places to view Texas geology", a full Glossary, additional sources of information, and a thorough Index.

I was especially impressed with the seamless transition from geological history to archeological history to contemporaneous history, and the commendable balance between resources and the environment, which previous chapters had laid a solid factual basis for.

*Texas Through Time* represents a major scientific contribution and a long-needed resource concerning the geology of the state, useful to teachers, students, laypersons and, above all, geologists who work and/or live in the state. It is a credit to the Director and Staff of the Texas Bureau of Economic Geology, and an impressive intellectual achievement by its distinguished author, Thomas E. Ewing. ■

To Purchase *Texas Through Time*, contact the UT Bureau of Economic Geology Bookstore:

By phone: 512/471-7144;

By E-mail: pubsales@beg.utexas.edu;

Online: <http://begstore.beg.utexas.edu/store/>



# HGS Grand Canyon Field Trip



You are invited to join us as the HGS will once again be offering its Grand Canyon field trip in Summer 2018. This very special “Journey Through Time” will weave the impressive geologic story of the Canyon (with other natural sciences on display), the human history, plus the thrills of running many exciting rapids of the Colorado River.

We will float the River on motorized rafts, providing us the opportunity to see and discuss all the classic geology so beautifully portrayed – from some of the earliest Precambrian sediments found in the US, all the way up to modern processes which continue to shape the canyon. Geological concepts are introduced and magnificently illustrated in the Canyon in such a way that the geology comes alive for everyone. In addition to running rapids, we will take a number of short hikes in some of the many side creeks, eat like royalty, and sleep under the stars. Your river guides and gear are supplied by Hatch River Expeditions (Hatch), one of the most experienced outfitters serving the Grand Canyon. Past participants have stated this was the best geologic trip they ever took and many have brought one or more of their family along to share this incredible experience with them.

While this is not an overly strenuous trip, participants must be in good enough physical condition to climb in and out of the rafts. We will enjoy some hiking each day, the longest being six miles, and several hikes require some scrambling. While any of the hikes will be at your pleasure, I encourage you to take as many as you are comfortable doing to fully experience this extraordinary trip.

The trip begins in Las Vegas on June 3, 2018. We provide transportation from there to Marble Canyon by way of Zion National Park for an opportunity to view the geology. Also included are the first night in Cliff Dwellers Lodge, food and drink for our 8 days/7 nights on the river, a helicopter ride to Bar 10 Ranch the last day, and the flight from there back to Las Vegas. Costs not covered include round-trip airfare to Las Vegas, first night’s dinner and breakfast in Marble Canyon, tips for our river guides, souvenirs purchased at Phantom Ranch or Bar 10 Ranch, and anything you might spend in Vegas should you decide to extend on either end. Optionally, you may join us in Marble Canyon and Hatch will arrange a return flight to there at the end.

Reserve your spot now on the HGS website with a \$500 deposit; the balance due is by December 15, 2017. *Please read the HGS’s refund policy before booking your trip.* ■

**Dates: June 3 – 11, 2018**

**Cost: \$3600 / person**

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**with a \$500 deposit;**

**the balance due is by**

**December 15, 2017.**

# Government Update

by **Henry M. Wise, P.G. and Arlin Howles, P.G.**

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



The Texas Legislature is now in session. To see which bills are of interest to Texas Geologists, go to the Wise Report: [https://www.hgs.org/multimedia\\_WiseReport](https://www.hgs.org/multimedia_WiseReport)

## AGI Geoscience Policy Monthly Review (February 2016) Proposed Resolution Would Change How Bureau of Land Management Values Fossil Fuel Extraction

On February 13, 2017 Representative Scott Tipton (R-CO-3) introduced a resolution (H.J. Res. 71) to use the Congressional Review Act to remove the Office of Natural Resources Revenue’s (ONRR) rule for calculating the value of oil, gas, and coal extracted on public lands.

The Valuation Reform Rule was issued to standardize valuations for royalty purposes in July 2016, and came into effect on January 1, 2017. It is an Obama administration update to federal valuation standards of energy resources extracted from public lands.

The resolution was referred to the House Committee on Natural Resources.

## Lawmakers Aim to Boost State Energy Production Authority

Sen. Jim Inhofe (R-OK) introduced the Federal Land Freedom Act (S.335) and the Hydraulic Fracturing Regulations are Effective in State Hands Act (S.334) on February 7, 2017. These bills remove the authority of federal decision-makers to manage energy resources on public lands.

Sen. Inhofe states that S.335 would enable states to develop energy resources on federal lands “aggressively and responsibly” through state-level leasing and permitting programs. If passed, the legislation would exempt states from the National Environmental Protection Act, Endangered Species Act, National Historic Preservation Act, and the Administrative Procedures Act. It would also remove the influence of the Department of the Interior and block judicial review of leasing and permitting.

The Hydraulic Fracturing Regulations are Effective in State Hands Act would give states complete regulatory authority of hydraulic fracturing within their borders.

Both bills and were referred to the Committee on Energy and Natural Resources.

## Hearing Assesses Social Cost of Carbon

How should the federal government price carbon in its assessments? This was the topic of debate at a House Science, Space, and Technology Committee hearing on February 28, 2017. Witnesses from the Brookings Institute, Heritage Foundation, Cato Institute, and the University of Chicago testified on how the social cost of carbon is currently evaluated.

Under the Obama administration, federal agencies valued the damage of climate variability on the scale of a carbon dioxide at \$40/metric ton. This value is used by agencies when they are creating new policies and rules. The Congressional Research Service cites that this value has been used in more than 150 regulatory actions since 2008.

During the hearing Kevin Dayaratna, a senior statistician at the Heritage Foundation’s Center for Data Analysis argued that increased CO2 concentrations were not harmful. On the other side of the discussion, Michael Greenstone, director of the University of Chicago’s Interdisciplinary Energy Policy Institute, stated that changing the evaluation of the social cost of carbon to only consider domestic benefits of carbon reduction, and ignore climate change outright, would encourage the rest of the world to increase carbon emissions.

Several witnesses recommended replacing the EPA’s regulatory authority over carbon with a revenue neutral carbon tax as means to address various environmental concerns of changing climate.

## House Bill Introduced to Eliminate Environmental Protection Agency programs

On February 7, 2017 Rep. Sam Johnson (R-TX-3) introduced the Wasteful EPA Programs Elimination Act (H.R.958) which will eliminate multiple programs at the Environmental Protection Agency (EPA).

H.R.958 would defund 13 EPA programs, close all EPA field offices, and require the EPA to sell/lease “under-utilized” properties. The bill also acts to eliminate all EPA grant programs, the National Clean Diesel Campaign, and environmental justice programs. The EPA Greenhouse Gas Reporting Program, Climate Resilience Fund, Climate Resilience Evaluation Awareness Tool, Green Infrastructure Program, and Climate Ready Water

**Government Update** continued on page 50



Utilities Initiative are directed to be defunded under this bill. EPA climate research, ozone standard development, and greenhouse gas emission regulations for vehicles and power plants are also directed to be defunded under this bill.

Rep. Johnson cites a Heritage Foundation estimate that these actions would save \$7.5 billion in expenditures over 10 years.

The bill was referred to the following committees: House Committee on Energy and Commerce, House Committee on Transportation and Infrastructure, House Committee on Agriculture, House Committee on Science, Space, and Technology, and the Subcommittee on Water Resources and the Environment.

**House Committee Holds Hearing on “Making the EPA Great Again”**

On February 7, 2017 the House Science, Space, and Technology Committee held the “Making EPA Great Again” hearing. In his opening statements, Chairman Lamar Smith (R-TX-21) expressed his disapproval of the current use of scientific research at the Environmental Protection Agency (EPA). Ranking member Eddie Bernice Johnson (D-Texas) stated her disappointment that the first committee hearing of this year was focused on attacking the EPA’s scientific processes.

Four witnesses testified during the hearing: Jeffrey Holmstead, an attorney and former EPA official; Kimberly White, of the American Chemistry Council (ACC); Richard Belzer, a cost-benefit analysis consultant; and Rush Holt, CEO of the American Association for the Advancement of Science (AAAS).

The witnesses’ testimonies on science at the EPA lead to a discussion of two bills introduced in the 114th Congress. The first bill, the Secret Science Reform Act (H.R.1030), would mandate that all EPA science and scientific data would be reproducible and available for public review. The second bill, the EPA Science Advisory Board Reform Act (H.R.1029), would broaden the “political diversity” of members on the EPA Science Advisory Board. The board, says Chairman Smith, has become a “rubber stamp” for EPA’s regulations and does not critically assess these rules.

In addition to raising these concerns, witnesses testified upon other EPA procedures. Kimberly White testified that the EPA’s chemical assessment procedures are in need of reassessment. Richard Belzer stated the concern that the EPA often overestimates the human health costs of pollution.

In contrast to these testimonies, Rush Holt testified in support of EPA science, and the EPA’s current role in societal concerns. In his opening statement, he called for “reverence for evidence in

our policymaking.” Dr. Holt testified that the scientific process, the process the EPA utilized, has positively served the nation, and should not be reformed for political gain. He stated that proposed reforms would hinder this process and the ability of the EPA to efficiently issue effective and current regulations.

These opinions on scientific evaluation processes remain a theme in the current committee, and were revisited at its hearing on the Social Cost of Carbon.

**Senators Introduce Bill to Recall Pesticide Regulation Near Waterways**

Senators Mike Crapo (R-ID) and Claire McCaskill (D-MO) introduced the Sensible Environment Protection Act (S.340) on February 7, 2017. The act will remove an Environmental Protection Agency (EPA) regulation requiring permits for pesticide spraying over or near waterways.

This bill will reverse a federal court decision requiring the EPA to issue permits for pesticide spraying over navigable U.S. waterways. Sen. McCaskill states that this rule is redundant because the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), which was first enacted in 1910, already governs the sale, distribution, and use of pesticides.

The bill acts to remove EPA mandates implemented under the Clean Water Act to issue permits for pesticide application near water. The bill also would require the EPA to create a report that evaluates whether FIFRA can be modified to better protect environmental and human health.

The Senate Committee on Environment and Public Works is currently reviewing the bill.

**House Bill to Ease Regulations for Waste-coal Plants**

Rep. Keith Rothfus (R-PA-12) introduced legislation (H.R.1119) to modify existing regulations applying to coal-refuse-to-energy power plants on February 16, 2017. The bill acts to exempt these specific power plants from emission standards required under the Environmental Protection Agency’s Cross-State Air Pollution Rule Update and the Mercury and Air Toxics Standards.

These plants currently burn refuse from abandoned coal mines. Refuse consists of low-grade coal mixed with dirt and rocks and is a by-product of coal production. These refuse piles lead to acid mine drainage, dust, and other types of pollution. These areas are remediated by burning this refuse in coal-waste-to-energy plants. Rep. Rothus argues that under the current EPA emission regulations, these businesses will be forced to shut down and therefore will negatively affect the nation’s economy and environment.

H.R.1119 was referred to the House Committee on Energy and Commerce.

**Executive Order Directs Review of EPA Rule**

President Trump issued an executive order directing agencies to review the “Waters of the United States” rule. On February 28 the order directed the U.S. Environmental Protection Agency and the Army Corps of Engineers to “review and rescind or revise” the regulation. The rule, which was issued in June 2015, clarifies which waterways are under the jurisdiction of federal regulators under the Clean Water Act. The rule has never come into effect because of litigation surrounding it.

The order directs federal agencies to consider shifting guidance for the rule from a 2006 opinion by Supreme Court Justice Anthony Kennedy in *Rapanos v. United States* to that of former Supreme Court Justice Antonin Scalia’s. In that case, with a 4-1-4 vote, Justice Kennedy’s vote was the stand-alone, while Scalia’s spoke for the four conservative justices.

The ultimate fate of the Waters of the United States Rule remains uncertain.

**REAL Space Act Introduced**

Rep. Bill Posey (R-FL-8) introduced the Reasserting American Leadership in Space Act (H.R.870) on February 3, 2017. The REAL Space Act directs the National Aeronautics and Space Administration (NASA) to return to and develop a sustained presence on the Moon.

The act directs NASA to return to the Moon by 2023 and to develop a sustained human presence there. The goals of this act are to promote lunar exploration, commerce, and science as well as to express the United States’ preeminence in space.

The bill directs NASA to create budget requests and expenditures to achieve this goal.

The House Committee on Science, Space, and Technology is currently reviewing the act.

**House Committee Holds Hearing on NASA’s Past, Present, and Future**

The House Committee on Science, Space, and Technology held a hearing on the future of NASA on February 16, 2017. Witnesses featured two geologists, former Senator Harrison Schmitt, the only geoscientist to walk on the moon, and Dr. Ellen Stofan, former Chief Scientist of the National Aeronautics and Space Administration (NASA). Tom Young, Former Goddard Space Flight Center Director, and Astronaut Thomas P. Stafford also testified at the hearing.

NASA’s earth science activities were emphasized throughout the hearing. Dr. Stofan highlighted some of the many economic benefits of NASA Earth Science, such as the GRACE satellite’s groundwater monitoring in California, and a NASA phone application to assist farmers for crop monitoring and irrigation purposes.

The comments of several committee members hint at reprioritizing NASA away from earth sciences. To contrast this proposed reprioritization, Rep. Don Beyer (D-VA-8) asked Dr. Stofan to explain what would be at risk if NASA’s earth science budget were eliminated. Chairman Smith (R-TX-21) commented after this statement that “rebalancing” NASA would not eliminate NASA Earth Science, but rather, reprioritize it. Dr. Stofan testified that the earth science budget at NASA has decreased slightly (with inflation) over the past 20 years. Stofan elaborated on how NASA has been vital to other agencies’ work, such as the GOES-R weather satellite for the National Oceanic and Atmospheric Administration (NOAA) and the Landsat satellite for the U.S. Geological Survey. During the hearing, Rep. Weber (R-TX-14) suggested that the committee may try to shift NASA away from these collaborations, and shift some of NASA’s earth science priorities towards other agencies such as NOAA.

During the hearing Thomas Young stressed the importance of NASA’s continued use of the National Academy of Sciences’ decadal surveys to set science priorities

**Senate Passes NASA Transition Authorization Act**

On February 17, 2017 the Senate unanimously passed the National Aeronautics and Space Administration (NASA) Transition Authorization Act (S.442). The bill was introduced by Sen. Ted Cruz (R-TX), and will provide stability for NASA to sustain and build upon its mission to advance NASA science and space exploration. The bill addresses many aspects of NASA’s activities, with the exception of earth science.

The bill authorizes \$19.5 billion in total NASA funding for Fiscal Year (FY) 2017, with \$5.5 billion directed to the NASA Science Mission Directorate. This funding, however, has yet to be appropriated. The current continuing resolution funds NASA at the FY2016 level of \$19.3 billion. The continuing resolution, however, does not apply to the Space Launch System, Orion, and Exploration Ground Systems programs, which, because they would suffer operations schedule issues without sustainable funding, are exempted from normal budgeting restrictions.

The bill directs NASA to report to Congress on how the Orion spacecraft may serve as a backup to move material to and from the International Space Station (ISS). S.442 directs NASA to



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expand upon and utilize private sector commercial systems to move astronauts between Earth and the ISS.

The House passed S.442 on March 7, 2017. President Trump signed it into law on March 20.

**House Introduces Amendments to the Safe Drinking Water Act**  
On February 15, 2017, Congressman Frank Pallone, Jr. (D-NJ-6) introduced an amendment (H.R.1068) to the Safe Drinking Water Act, which was last amended in 1996. H.R.1068 would update laws, direct the Environmental Protection Agency (EPA) to set deadlines for the development of new water standards, and authorize spending to improve public water systems.

Rep. Pallone introduced the bill to help communities “in dire need of dramatic improvements to their drinking water infrastructure.”

This bill focuses on the occurrence of metals, specifically lead and copper, in drinking water. It requires utility companies to review corrosion control treatments any time a water source or treatment is changed. Similarly, this bill directs utility companies to test for lead and copper in drinking water at public and private schools, and authorizes funding for the removal of lead pipes in schools. H.R.1068 also authorizes investments in climate and weather resiliency, monitoring technology, and general drinking water infrastructure. H.R.1068 is currently in review by the House Committee on Energy and Commerce. ■

Remembrance

NANCY NICHOLS FRYE  
1933-2017



NANCY NICHOLS FRYE passed on April 3, 2017 after a multi-year battle with cancer.

Nancy was born in Greenville, Texas on March 3, 1933 to Newman R (Nick) Nichols and Eta Bess (Cain) Nichols. She is survived by her husband of 61 years, Donald W. Frye and three sons Donald W. (Bill) and wife Melissa, David Nichols and wife Stevenie, Douglas Alan and partner Travis Foster. She is also survived by 6 grandchildren: Bethany Kimes (Ed), Austin (Lauren), Trey (Bethany), Hannah, Joshua, Abigail and 2 great grandchildren Ethan and Chase Kimes.

Nancy graduated from Navasota High School in 1950, and graduated from the University of Texas with a degree in retailing. She had planned to be a career woman and yearned to travel, but met her husband to be and following his career as a geophysicist they lived in 8 states, England, and Singapore in the first 20 years of their marriage. With children grown she took

an office job with the Randalls grocery chain. With Randalls growing rapidly, her responsibilities grew even faster and she was Employee Benefits Manager for several years before retirement.

Nancy was an accomplished musician, from playing organ for church services in high school to jam sessions with friends later. She was also a great story-teller entertaining grandchildren with almost true stories of early married life. ■

Published in *Houston Chronicle* on Apr. 6, 2017

See more at: <http://www.legacy.com/obituaries/houstonchronicle/obituary.aspx?pid=184935292#sthash.mMktE4R9.dpuf>

Remembrance

ARTHUR S. DICKINSON  
1925-2017



ARTHUR S. DICKINSON, 91, of Houston, Texas, passed away on Thursday, March 30, 2017 at Houston Hospice, having lived in his words, “The American Dream”. Art was born on April 11, 1925 to Roscoe Flynn Dickinson and Nina Blanche Crowl Dickinson in Denver, Colorado where he was the younger of two sons.

Art was known for his devotion to his church, family and friends. He was an avid runner, enjoyed fly-fishing and Colorado. He was an enthusiastic storyteller with a great sense of humor. Art was most influenced by his only sibling, Robert Flynn Dickinson, who was killed in World War II while piloting a dive bomber combat mission against the Japanese on Hainan Island in the S. China Sea.

Art was commissioned an Ensign in the Naval Reserve and graduated as a Naval Aviator at the Naval Aviation Cadet Training Center in Corpus Christi in 1945. After completing his operational flight training to become a dive bomber pilot, he was discharged from military service and returned home to Denver in December 1946.

After his military service, he graduated from The Colorado School of Mines with a degree in Petroleum Geology. Art was employed with several major oil companies including Shell Oil, Monsanto, and Adams Resources. He later became a successful independent petroleum geologist.

While attending The Colorado School of Mines, he met his soon to be wife Marilyn Ruddy Dickinson on a blind date. On September 3, 1949, they were happily married in Webster Groves, MO.

He is survived by his wife of 67 years, Marilyn Ruddy Dickinson; son Robert S. Dickinson, MD and wife Jacki of Houston; daughter Carol Lynn Dickinson of Houston; and Thomas A. Dickinson, Esq and wife Stephanie of Houston; son-in-law Don Forisha of San Antonio; nine grandchildren, and six great-grandchildren. Art was preceded in death by his parents, his daughter Reverend Martha Lee Dickinson Forisha, and his brother Robert (Bob) Dickinson.

The family would like to thank Houston Hospice, Dr. Nick Solomos, Dr. Jim Jackson and Reverend Bob Johnson for their love and support.

<http://www.legacy.com/obituaries/houstonchronicle/obituary.aspx?pid=184799974>

Published in *Houston Chronicle* on Apr. 5, 2017



# Remembrance

KATHERINE LORINE GARCIA  
January 10, 1983 - April 5, 2017



The HGS would like to offer their sincerest condolences to our member, Paul Hoffman, on the loss of his beautiful daughter.

KATHERINE LORINE GARCIA was born January 10, 1983, to Paul and Tina Hoffman. Kate was the second of three children, along with her older brother, Joseph Hoffman and younger sister, Lisa Loftice. The family grew up going to the lake, and Kate loved the lake best of all places. It was for her a refuge, a retreat, and a second home. Weekends and summers at the lake were mandatory, for it was there that she could truly relax and simply enjoy time with her family.

On August 11, 2007, she married David Thomas Garcia, her high school sweetheart. In 2010, they welcomed their first-born, John David, followed in 2011 by Lilia Marie, Thomas James in 2013, and Andrew Paul in 2014. In February 2016, Kate was diagnosed with appendiceal cancer, and after a brief remission in the fall, was diagnosed with stage IV in December. On April 5, 2017, while holding David’s hand, she entered into her heavenly rest.

Kate loved Jesus and his Church with a passion that could be felt by all who knew her. In public, she could be the life of the party or a quiet confidant, often switching from one to the other at will. Despite her gregarious nature and ability to befriend anyone she met, she was strongly introverted, and maintained a healthy balance of time with friends and time alone at home with just her children and David. She loved watching TV and movies, and would often spend nights at home, snuggled on the couch with David, enjoying a show. She loved to write and kept a daily journal for most of her life.

Katie took her vocation to marriage and family life seriously, and worked tirelessly for her marriage and children. For Katie and David, marriage was like a garden: beautiful to see in bloom. And like a garden, it took work to keep it pruned, to pull out weeds, to water, and feed. Kate was always reading and researching ways to be the best mother she could be for their four children, and she was an incredible mother: kind but firm, gentle even when disciplining, and purposeful in decision making.

Throughout her illness, Katie wrote and shared her thoughts and reflections online, touching hundreds, even thousands of hearts and drawing them closer to Jesus. That was always her driving force - to bring others closer to God. While at Franciscan University, Kate joined a sisterhood of faithful women - Stella Mariae. Their household greeting, though short, seems fitting as she departs us for her final reward:

“It is the deepest desire of my heart to see you in heaven.” ■

<http://earthman-bellaire.tributes.com/dignitymemorial/obituary/Katherine-Lorine-Garcia-104652687>



## 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](mailto: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.**

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9	\$800	\$1,300	\$2,500	\$4,700						
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7	\$600	\$1,100	\$2,200	\$3,850						
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5	\$500	\$800	\$1,600	\$3,000	\$4,700	\$4,500	\$4,350	\$4,000		
4	\$450	\$650	\$1,300	\$2,500						
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2	\$250	\$400	\$700	\$1,500						
1	\$150	\$250	\$450	\$1,000	\$1,500	\$1,400	\$1,250	\$1,000	\$1,250	\$850
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## 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.

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- 1) Be involved in the application of the earth or allied sciences.
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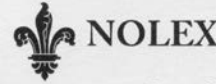
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**Kevin McMichael**  
[kmc michael@nolexllc.com](mailto:kmc michael@nolexllc.com)

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Houston, Texas 77019

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Cell: 281-467-9170  
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**Charles S. Knobloch**  
Attorney at Law  
Registered Patent Attorney  
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4900 WOODWAY, SUITE 900  
HOUSTON, TEXAS 77056  
Phone: 713-972-1150  
Direct: 713-335-3021  
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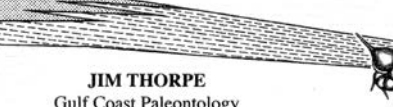
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(832) 969-3662  
[MHACKWORTH@WOLFMoonEXPLORATION.COM](mailto:MHACKWORTH@WOLFMoonEXPLORATION.COM)  
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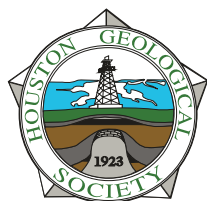
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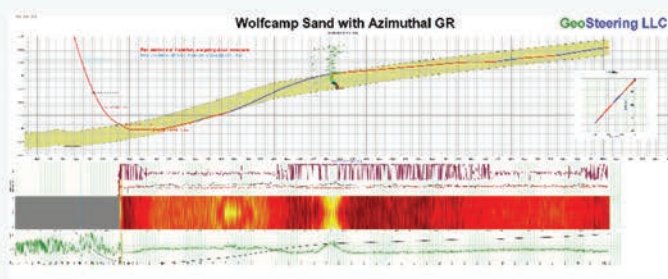
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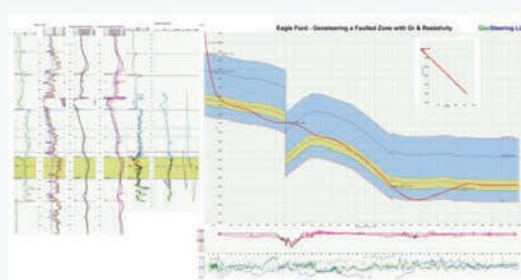
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