## BULLETIN

HOUSTON GEOLOGICAL SOCIETY



## In this issue:

HGS-PESGB AFRICA CONFERENCE

September 26 - 28, 2022

HGS STUDENT EXPO

September 19 - 20, 2022

HGS GENERAL DINNER

The Real Energy Paradigm

**HGS E&E MEETING** 

Geothermal Energy: A New Role for Geoscience in the Global Energy Industry

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## Table of Contents

ON THE COVER: Iceberg in Periglacial Lake in front of the Breidamerkurjokull exit glacier from the Vatanajokull Ice Sheet in southeastern Iceland. Photo provided by Ken Thies.

4	HGS GRAND	CANYON FIELD TRIP	
---	-----------	-------------------	--

June 2023

## 12 HGS-PESGB AFRICA CONFERENCE

September 26 - 28, 2022

## 5 LETTER FROM THE PRESIDENT

by Walter Light, Jr.

## 13 HGS-PESGB AFRICA CONFERENCE SHORT COURSE

by Duncan Macgregor, September 26, 2022

## 7 LETTER FROM THE EDITOR

by Ken Thies

## 14 HGS-PESGB AFRICA CONFERENCE NETWORKING RECEPTION & DINNER

September 26, 2022

## 8 LETTERS TO THE EDITOR

Submit your letters to kenthies.kt@gmail.com

## 16 HGS GENERAL DINNER

"The Real Energy Paradigm" by Arthur Berman

## 9 SEFH SUMMER INTERNS SUPPORTED BY HGS JULY 2022

Article by Dorene West, SEFH Chair

## 17 HGS E&E MEETING

"Geothermal Energy: A New Role for Geoscience in the Global Energy Industry" by Bryan Gottfried, PG

## 11 HGS STUDENT EXPO HAPPY HOUR & TRIVIA

September 19, 2022

## 18 HGS GOLF TOURNAMENT

October 17, 2022

## HGS Invites You To Join Us On This Memorable Trip!

The 2023 trip will be leaving from Las Vegas, Nevada on June 1st and returning to Las Vegas on June 8th. There are limited spots available, so be sure to reserve your spot before the trip fills up!

## **HGS**

## GRAND CANYON FIELD TRIP

This is a full canyon raft trip with 7 nights on the river, plus the first night in Marble Canyon. Cost is \$4650 per person and includes bus transportation from Las Vegas to Marble Canyon through Zion National Park, double occupancy room at Cliff Dwellers Lodge, 8-days/7-nights on the river including a sleep kit and all meals on the river, drinks on the river, and transportation back to either Las Vegas or Marble Canyon.



## TRIP LEADERS

Ross Harrison ross.harrison@tcu.edu Mattie Reid mmreid4@gmail.com

## REGISTRATION DEADLINE

October 28, 2022
Deposit of \$1,000 per person due at registration

## **FINAL BALANCE DUE**

MUST be made by February 1, 2023

\*\$200/person fee for guest substitutions after Oct. 28\*

## Contact:

office@hgs.org | 713-463-9476

## Register & More Information:

www.hgs.org

1 - 8 JUNE 2023 DEPART FROM LAS VEGAS, NEVADA

## FROM THE PRESIDENT

## WALTER LIGHT, JR.



Greetings fellow members of the Houston Geological Society and welcome to the start of a new business year for the HGS. I am honored to serve and represent you and our geological society as we approach our 100-year anniversary in 2023.

This year promises to be an exciting one, after two previous years of destruction and disarray caused by the Covid pandemic. For the first time in nine years, we have elevated oil prices and for the first time in fourteen years we have elevated natural gas prices. Elevated commodity prices of metals such as copper, nickel and lithium will also move that part of our profession forward. As the year progresses and companies' coffers are replenished, I expect these elevated commodity prices to restore enthusiasm for the oil and gas and mining industry. On the ground

swell of this enthusiasm, I see this year as one in which we collaborate to reignite the fire and restore vitality of our profession and our professional society.

I have created a three-point plan for our society to achieve these goals.

- 1.) We must all work together to increase our total membership. We must encourage our long-term members to renew their membership. We must also collaborate to bring in new members by encouraging our peers at work to join. In addition, we must connect with group E&P managers to encourage their entire team to become members.
- 2.) We must work diligently to rebuild our professional community. We will accomplish this by once again and routinely offering in-person technical and social events. There is no substitute for in-person networking and sharing a meal to make new friends and contacts and to build long-term business and personal relationships. To this end we have scheduled our first in-person dinner technical presentation in two years for September 12th. The dinner presentation will be held at the Norris Conference Center located in City Center. This event promises to be an interesting presentation by Art Berman, one of our own members. Art will give his well-researched view on supply / demand issues, global politics, commodity pricing and his view of the future of our profession. In addition to the September Dinner Technical Presentation, we will once again run the Golf Tournament, scheduled for October 17th. If you are a golfer, please sign up for this event. If you have a company or work as a consultant, consider sponsorship of this event. Sponsorship/advertising is a great way to get your name out there. Please refer to the HGS website for additional details on these and other events.
- 3.) We must intentionally work to improve our financial stability. Our society financially suffered as a result of a steep decline in membership during the Covid years and a lack of in-person technical events. We did host one social event in May of each of the last two years. The Shrimp/Crawfish Boil was well attended and highly successful. I am confident if we successfully execute points 1 and 2, improvement in our financials will follow.

I encourage you to help us achieve the objectives of our 3 Point Plan. Sign up, encourage others to renew or join and participate/volunteer in our society events. If you have a company or work as a consultant, considering advertising on the website/bulletin, sponsoring an event or participating in a vendor corner at our technical meetings.

Thank you for your membership and active participation.

Walter Light, Jr. HGS President 2022-2023



## **Advertise with HGS**

The Houston Geological Society has many advertising opportunities to help you promote your business. The money raised through advertising helps the HGS to be able to support continuing education, networking, outreach to students, student scholarships, and young professional activities. Check out some of our advertising opportunities below!



## **Vendor Corner**

Promote your business with a booth at an in-person luncheon or dinner meeting. HGS will also post your logo, website/social link(s) and a brief company summary on the HGS website below the technical meeting's announcement and abstract.



## **HGS Bulletin**

Published 10 months out of the year and available digitally on the HGS website, the HGS Bulletin is an outstanding technical journal sent electronically to all current members and to subscribing libraries around the world.



## **Virtual HGS Event Sponsorship**

Promote your business at a virtual meeting. Along with the opportunity to reach a global audience, HGS will promote your business on the event page, on our social media, and at the technical talk.



## GeoJobs

The HGS GeoJobs section provides a variety of employment information to interested HGS members and the geological and geophysical community at large. If your business has an employment opportunity, let us help you fill the position!



## **HGS Weekly Newsletter**

The HGS Weekly Newsletter is published digitally every week, and reaches a global community of 8,000+ people. HGS will promote your business with an ad of your design or your logo and a link to your website or social media.

To learn more about advertising rates and how you can promote your business with us, visit our website or contact the HGS Office at 713-463-9476 or office@hgs.org.



## FROM THE EDITOR

### KEN THIES



Hello. As the new Editor of the Houston Geological Society Bulletin, I am pleased and honored to take on this role. I look forward to serving and making this the best Bulletin I can. As you know, we have made some changes to accommodate the financial and evolving status of the HGS. I want to do the best we can under the

limits we have to serve our members and advance our organization.

We are entering our 100th year as a scientific society and there are many plans in the works to celebrate our 100th anniversary. More to come in the next few months. In the lead up to this historic event I want to work to bring together our members and make them more than ever proud to be a part of the HGS.

Two things I want to bring back to our Bulletin. The first is having more technical articles in the Bulletin and second, to add a Letters to the Editor section. We have some space limitations so the number and length of articles may be constrained but I will endeavor to put out as many as possible and allow them to be comprehensive as I can. As before, these will not be peer reviewed but my hope is that they will both enlighten our membership to what others are doing in the broad range of geology and provide for open discussion about scientific issues. I ask that authors try to limit the volume of figures and text so we can accommodate several in each issue. Also, as I have been reminded many times of late the Houston Geological Society is not the Houston Oil and Gas Society, so I want to open this up to a wide range of topics both inside and outside the petroleum world. We have many members from academia, the environmental world, mining, hard rock science, paleontology and more that have much to tell us about their piece of Geology. So, consider it as an open invitation.

Additionally, I want to call for Letters to the Editor giving members the opportunity to tell their story or how they work in the science of geology. To start us off, I am asking for members to write of their experiences as members of the HGS. What have been the benefits of membership, how has it affected their careers, where do we go from here as a society? I have asked Board members to start this off and so there are a few in this issue and I thank them for coming forward. Please, while we all have opinions on many subjects affecting our science, let us try to keep this from evolving into a contentious political forum.

As most of you are aware the Houston Geological Society is a mostly volunteer run organization. While we have two office staff members Andi and Alyssa without whom we could not function or generate this Bulletin, but we are mainly run by a large group of volunteers. Page two of the Bulletin lists over 50 volunteers that serve on our Board of Directors or chair the many important committees that make this organization happen. They devote many hours of their time organizing and managing events, educating the public and much more. I hope to each month highlight some of these committees and inform you about what they are up to and how they serve us. I also need to say that each and every one of them could use our help and support. We are all busy in our work and daily lives but these generous people are finding the time to do more for the benefit of us all and I know you will find your efforts rewarding.

Lastly, as Editor, I am responsible for the cover photos each month for our Bulletin. My world is Oil and Gas and Paleontology focused and I certainly can fill the covers during my tenure but if you have an interesting photo that you think is worth sharing with our members, please submit it along with a brief description of where it is from and if appropriate what it shows and I will try to accommodate. If you have any other suggestions on how we can improve our Bulletin, please let me know either directly or through the HGS office.

Ken Thies, HGS Editor 2022-2023 kenthies.kt@gmail.com



## LETTERS to the Editor

To be considered for publication, please submit your "Letter to the Editor" to Ken Thies at kenthies.kt@gmail.com. Please keep letters brief. The Editor reserves the right to decline submissions.

## "WHAT HAS YOUR BIKE DONE FOR YOU?"

Back when I kept a summer home in Denver, I had two neighbors who bought mountain bikes. They were beautiful bikes. Each had 18 gears, shock absorbers, and were tricked out with all the cool, mountain-bike bling. Their very image conveyed a hip athleticism.

Two years later, I bought one of the bikes for 10 cents on the dollar. It was in pristine condition. I asked my neighbor why he was selling it. He said, "It never did anything for me." I asked him how often he rode it. He replied, "Ride it? You mean I have to put energy into this thing?"

The HGS is the same as a mountain bike. They are both wonderful vehicles that can take you to exciting places. But you must put energy into them. Call it "participatory effort."

You have to join HGS, volunteer for committees, give talks, teach classes, attend luncheons, and chair sessions. Or you are just like my misguided neighbor who thought his cool bike was going to "do something for him" by sitting in his garage.

Let me continue with my bike analogy. The most energy efficient animal on the planet, in terms of miles traveled per unit of energy expended, is the Andean condor. But the mighty Andean condor is a distant second to the energy efficiency of man on a bicycle.

A bicycle is an extreme energy-multiplier tool. The HGS is an extreme multiplier tool for professional exposure. Tools have to be used to have an effect. Tools require energy input; participatory effort.

Messaging is part of HGS' problem in recruiting. We often use the word "networking" to describing one benefit of HGS. But the word "Networking" can be grossly misinterpreted as meaning the same as a sophomoric "social network" like Facebook or Twitter. HGS does not function like that. HGS provides leveraged professional exposure to members who put in participatory effort.

I was a geologist at Southwestern Energy. I got laid off. The best my professional resume and professional exposure could leverage me into was a job as senior VP and Chief Geologist at Goldman Sachs. They called me. I don't have a Twitter. My Facebook is years out of date. My professional exposure was through professional societies.

Other companies have hired me based only on my professional society publications. Employers pay for professional gravitas that gets known by way of professional exposure through a professional society.

The HGS is a tool, a career multiplier, for professional exposure that can take members to great places. But it

requires members put in participatory energy to get those

So if a person is asking, "What will an HGS membership do for me?",

I suggest their thinking about how HGS works is entirely wrong. I also suggest they check their garage. Is there an unused bike parked out there?

William DeMis HGS Director 2022-2024

## "WHY BE A MEMBER OF THE HOUSTON GEOLOGICAL SOCIETY?"

When they function correctly, technical societies are useful scientific forums, places to take economical short courses that keep their members technically up to date, as well as meeting places for technical networking among their members. Houston Geological Society does all of these things and much more.

But simply joining an organization and paying its yearly dues does not help you realize your full potential. You must be proactive in that organization. To get a lot out of an organization you must also put something back into it. Do you want your managers to notice your management potential? Then serve on one or more HGS committees and seek office in the HGS.

Consider this: Your manager has two geoscientists with equal technical expertise, work habits, and growth potential:

- · One has demonstrated management potential by holding office in the Houston Geological Society and has built technical and personal relationships throughout the oil and gas industry
- The other does not even though he works just as hard as you and is an affable guy

Who do you think that manger will choose to elevate to a managerial position that comes up which must be filled internally? The one who has never demonstrated management potential or the one who has managed people who worked for him with no pay and has shown that he or she is a 'team player'? The answer is self-obvious.

Join the Houston Geological Society and get involved.

## Steven Getz **HGS International Group Chair**

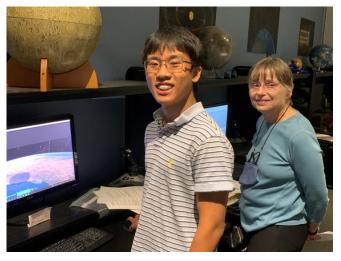
8

## SEFH Summer Interns supported by HGS July 2022

## BY DORENE WEST, SCIENCE & ENGINEERING FAIR COMMITTEE

HGS supported 3 research assistants at HMNS this summer: Inu Beak, Jason Nguyen, and John Duong. I was hoping to visit each one and get pictures of them working; but did not get their work schedules in time to catch all of them. I visited with Jason on July 14, 2022 and John on July 15, 2022.

Carolyn Sumners told me that Inu finished his internship and was fantastic. Jason is her senior OpenSpace programmer, and this was his last week. John started last week and operated the Planetarium and GST (Giant Screen Theater); he is now programming and working with the public.



Jason Nguyen and Dorene West (HGS Science Fair Chair).



John Duong and Dorene looking at images of the galaxies and universe.

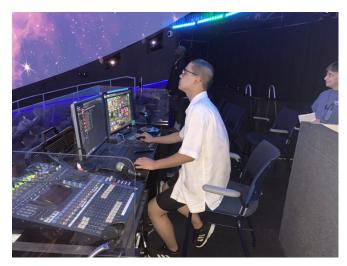


Group photo of all the summer interns working on July 15, 2022. Left to right: Nashita Sahin, Emmy Li, Victoria Ou, Jason Nguyen, Dr. Carolyn Sumners, Dorene West, John Duong.

## SEFH Summer Interns supported by HGS...continued



Jason Nguyen showing Dorene some of his work.



 $\label{eq:continuity} \mbox{John Duong operating the GST (Giant Screen Theater).}$ 



John Duong operating the GST (Giant Screen Theater).



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26-28 September 2022 Houston, TX & Online

# The 21st HGS-PESGB Africa Conference

## **REGISTER NOW**

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



www.hgs.org



Register today for the 21st Annual HGS-PESGB Africa Conference to be held 26-28 September, and be a part of the conversation on The Future of G&G in Africa's E&P: Skills, Transition, and Resources. There are multiple ways to get involved! Join the virtual technical program on the 27-28th of September to hear more than 30 live presentations by professionals and students from around the globe. Meet your colleagues at in-person social hour followed by a technical presentation and dinner at the Norris Center on the 26th of September. Also, close out the conference at an in-person social hour on the afternoon of September 28.

Geologists play a key role in the exploration and production of African energy. The conference will feature insights into recent hydrocarbon discoveries on the Namibian margin and new plays in Northern Africa. Explore tools and techniques such as gravity, electromagnetics and 4D seismic. In addition, hear about new energy sources such as natural hydrogen, and how governments are responding to the Energy Transition.

## HGS VIRTUAL AFRICA CONFERENCE SHORT COURSE

MONDAY, SEPTEMBER 26, 2022
8:00AM - 12:00PM (CST) / 2:00PM - 6:00PM (BST)
HGS MEMBERS \$60 NON-MEMBERS \$75 STUDENTS \$25
HTTPS://WWW.HGS.ORG/CIVICRM/EVENT/INFO?ID=2405
REGISTRATION FOR THIS COURSE CLOSES THURSDAY, SEPT. 22 AT 8:00AM (CST).



## Thermal Regime and Geothermal Potential for Africa

This short course is in conjunction with the annual HGS-PESGB Africa Conference. Registration for the conference is not required in order to attend this course.

This short course will review the thermal regime of Africa as it affects both geothermal potential and the prediction of source rock maturity. The principles of heat and temperature in the subsurface are first reviewed before considering the causes of the numerous thermal anomalies around the continent. Geothermal potential in Africa generally relies on temperatures sufficient to generate electricity and therefore on very high geothermal gradients. We will focus for the practical part of the course on the East African Rift System, where two short interactive exercises will be run in a basin with geothermal potential using data gathered from petroleum exploration. These will demonstrate the techniques applied and the risks inherent in geothermal exploration. Finally we will consider synergies between the geothermal and petroleum exploration industries, including the consideration of hydrothermal systems and the importance of thermal conductivity, both of which are vastly underrated in importance in the evaluation of petroleum systems.

## Agenda

The times below are listed in Central Daylight Time (CDT).

08:00 - 08:45 Principles

08:45 - 09:15 Thermal Regime of Africa

09:15 - 10:00 Exercise 1: Geothermal Gradients

10:00 - 10:15 Break

10:15 - 10:45 Geothermal Potential

10:45 - 11:30 Exercise 2

11:30 - 12:00 Other Regions / Wrap-Up / Discussion

## Biographical Sketch



**Duncan Macgregor** is a former BP geologist, and has consulted for the past 24 years for a number of companies, mainly on African ventures, including much of the East African rift system. He is now a specialist on the regional geology of the African plate

(see <a href="www.macgeology.co.uk">www.macgeology.co.uk</a> for his latest work on a paleogeographic atlas of the continent). He is also a former technical chair of the PESGB/HGS London conferences and has presented several times. His work on the thermal regime of Africa, referenced below (which is a recommended preread), was the most downloaded paper from Journal of African Earth Sciences for that year. He now works part time and still presents a number of Africa-focused courses. The Geothermal Atlas of Africa currently being compiled includes many contributions from him.

Reference: Macgregor, D.S, 2020, Regional variations in geothermal gradient and heat flow across the African plate, Journal of African Earth Science, 171, November 2020 https://www.sciencedirect.com/science/article/abs/pii/S 1464343X20302016

## HGS AFRICA CONFERENCE INTERNATIONAL DINNER

MONDAY, SEPTEMBER 26, 2022
5:00PM - 9:00PM
NORRIS CONFERENCE CENTER, HOUSTON, TX
HGS MEMBERS \$60 NON-MEMBERS \$75 STUDENTS \$25
HTTPS://WWW.HGS.ORG/CIVICRM/EVENT/INFO?ID=2352
REGISTRATION FOR THIS COURSE CLOSES MONDAY, SEPT. 26 AT 8:00AM



## The Range & Variability in Turbidites, Contourites & Mass Transport Deposits: An Homage to Deepwater Pioneers

This month's HGS International Dinner is part of the HGS-PESGB Africa Conference! Please visit our website to register through the Africa Conference event page. Once there, you have the option to register for only this networking reception & dinner OR join us for the entire conference!

Niger Delta. West of Shetland. Campos-Santos basins. Gulf of Mexico. All testing grounds for our understanding of deep-water sedimentary systems. High risk. High pressure. High temperature. High rates. Decades of high production. Low maintenance. Low environmental and carbon footprint. The discoveries in these offshore regions around the 1980s prompted explorers to think: "Where else in the world can large oil fields with high-quality turbidite reservoirs be found?" In this way, deepwater became a target to pursue on a global scale (Fremin et al., 2022; Sears et al., 2022).

Recent, large discoveries in frontier settings offshore Africa (and the conjugates) have bolstered a positive trajectory for the deepwater creaming curve (Fig. 1 – Minken et al., 2022). The industry is in a deepwater renaissance, with the curve not showing signs of flattening. Not only have these discoveries increased the deepwater resource base, but they have also called into question the turbidite paradigm that persisted in exploration workflows since the final third of the 20th century.

Before the large African discoveries in the early 21st century, the search for conventional turbidite reservoirs promoted a singular focus on deep-water sediment transport and depositional models dominated by downslope processes. Turbidites, debrites and transitional flow deposits were interpreted to be responsible for diverse submarine fan depositional systems comprised of elegantly interconnected canyon, channel, levee, splay and overbank environments. Today, along-slope as well as downslope (i.e., turbidity current) processes are interpreted to sculpt the modern seafloor (Fig. 2 - Rotzien et al., 2022; Hernández-Molina et al., 2022). Ancient stratigraphic successions in revered outcrops such as the Annot Sandstone (Grès d'Annot) in France also reveal evidence of along-slope sediment transport and deposition. In response, wildcatters academic researchers alike have refreshed interpretations and depositional models to communicate new observations on mixed deep-water sedimentary systems to scientific and industry communities as oil price remains high in the near term.

This presentation focuses on deep-water sedimentary processes and deposits, their predictive attributes and their 3D heterogeneity. While much of the global knowledge on deepwater has been generated through decades of oil and gas drilling, a firm understanding of deep-water sedimentary processes is essential for many offshore endeavors that take place in the water column, at the seabed, and into the subsurface, as well as onshore projects that involve deep-water sedimentary intervals. Professionals and students in the fields of oil and gas exploration and production, carbon capture, use and sequestration, geothermal, wind, solar, aquaculture, mining, military, insurance and government are invited to attend this discussion on the past, present and future of deepwater.

## Biographical Sketch



Jon Rotzien is President of Basin Dynamics and Adjunct Professor at University of Houston. He specializes in reservoir presence and quality forecasting in conventional and unconventional drilling programs. Prior to his present posts, he served BP and

other supermajor and independent operators in a variety of basins and petroleum reservoir technical training programs. As a business owner and scientist, Rotzien has participated in oil and gas exploratory to development drilling, mapping expeditions, technical competency training and consulting and has served as lead geologist in about one-third of those ventures. He is currently serving as Chair of the Houston Explorers Club. Rotzien received a Ph.D. in Geological Sciences from Stanford University and a B.A. degree in Geology from Colorado College.

## ...continued from previous page

## The Range & Variability in Turbidites, Contourites & Mass Transport Deposits: An Homage to Deepwater Pioneers



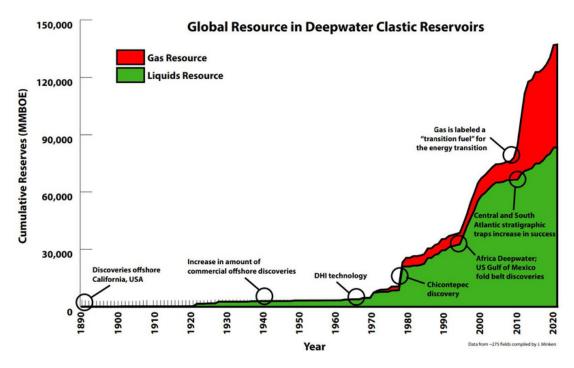


Figure 1. Global resource curve for deepwater siliciclastic reservoirs. Modified from Minken et al. (2022).

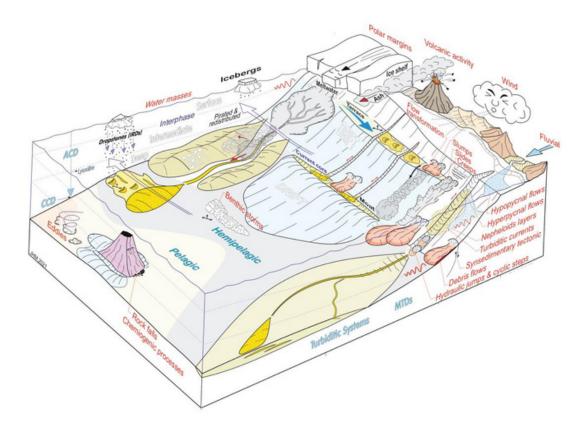


Figure 2. Marine and deep marine processes and deposits drawn by F. J. Hernández-Molina in Rotzien et al. (2022).

## **HGS GENERAL DINNER MEETING**

MONDAY, SEPTEMBER 12, 2022 | 5:30 - 9:00PM
NORRIS CONFERENCE CENTER, CITYCENTRE
816 TOWN AND COUNTRY BLVD #210 HOUSTON, TX 77024
HGS MEMBERS \$65 NON-MEMBERS \$75 STUDENTS \$25 WALKUPS \$75
HTTPS://WWW.HGS.ORG/CIVICRM/EVENT/INFO?ID=2399
EVENT CONTACT:SCOTT SECHRIST | PENNTEXAS53@YAHOO.COM

## The Real Energy Paradigm

The world thinks it's in an energy crisis today and indeed there are shortages in some places but the world is undergoing an energy crisis more fundamental than the simple shortage happening today in Europe. A shortage can be remedied.

The larger problem is that oil use began to decline from 48% of total world energy consumption after 1977. This was the beginning of the end of the oil age. Per-capita oil consumption has been flat since since 1985). That means that individual worker productivity is not growing as it did before the oil shocks.

The world thinks that an energy transition is underway but fails to understand that transitions are additive. The relative percent of fuels changes but volumes rarely decrease. There is little chance that this transition will take 30 years instead of the century or longer period for earlier transitions.

The real crisis today is the economic expression of the reality that energy is the economy. As living standards fall, mass immigration and civil unrest will probably increase. The oil age has been ending for 50 years but there is no substitute for oil. Wind, solar and nuclear only address electric power generation which accounts for only 18% of world energy consumption. Even if we could magically transform 100% of electric power to non-fossil energy sources, this would not address the other 72% of energy use that society needs.

The medium- to long-term should be increasingly affected by limited supply growth. The market will send price signals to producers based on its sense of medium-term supply urgency. Prices will rally until inflation and a fragile economy end the rally. This is the dialectic that I expect will dominate oil markets in 2022 and probably beyond.

There is great opportunity for those who understand this pattern and for scientists who are skilled at finding new oil supply. The successful geologist, geophysicist and engineer of the present and future will not be a specialist who only makes maps and interprets subsurface data. Analysis and understanding of macro trends of global supply, demand, price structure and economics will be needed.

The age of oil as the dominant energy source may be ending but non-fossil energy will be largely limited to electric power generation which represents only 18% of primary energy consumption today. Those who can help provide solutions for the remaining 72% will be in great demand.

## Biographical Sketch



Arthur E. Berman is a petroleum geologist with 44years of oil and gas industry experience. He is an expert on U.S. shale plays and is currently consulting for several E&P companies and capital groups in the energy sector. He routinely gives keynote addresses for energy conferences,

boards of directors and professional societies. Berman has published more than 100 articles on oil and gas plays and trends. He has been interviewed about oil and gas topics on CBS, CNBC, CNN, CBC, Platt's Energy Week, BNN, Bloomberg, Platt's, The Financial Times, The Wall Street Journal, Rolling Stone and The New York Times. He has more than 36,000 followers on Twitter (@aeberman12). Berman is an associate editor of the American Association of Petroleum Geologists Bulletin, and was a managing editor and frequent contributor to theoildrum.com. He is a Director of the Association for the Study of Peak Oil, and has served on the boards of directors of The Houston Geological Society and The Society of Independent Professional Earth Scientists. He worked 20 years for Amoco (now BP) and 24 years as consulting geologist. He has an M.S. (Geology) from the Colorado School of Mines and a B.A. (History) from Amherst College.

Website: artberman.com



Needing more luck with your sales efforts? Promote your business as a Vendor Corner at an HGS meeting!

Make direct contact with interested geoscience buyers without being lost in an ocean of exhibitors. The money that is raised through Vendor Corner helps the HGS support continuing education, networking, outreach to students, student scholarships, and young professional activities. Click here to read more!

## HGS ENVIRONMENTAL & ENGINEERING MEETING

WEDNESDAY, SEPTEMBER 14, 2022 | 5:30 - 9:00PM
CRAFT REPUBLIC HOUSTON
11470 WESTHEIMER RD, HOUSTON TX 77077
HGS MEMBERS \$35 NON-MEMBERS \$40 EMERITUS/HON. LIFE \$18 STUDENTS \$12 WALKUPS \$40
HTTPS://WWW.HGS.ORG/CIVICRM/EVENT/INFO?ID=2411
EVENT CONTACT: MATTHEW COWAN | MRCOWAN1@HAL-PC.ORG

## Geothermal Energy: A New Role for Geoscience in the Global Energy Industry

Geothermal energy is an inexhaustible resource that offers an opportunity for geoscientists to play a leading role in a low-carbon energy future. Geothermal energy has long been considered a niche resource limited by geography and geology, with many of the most viable areas being located far from population centers. Recently, drilling and completion technologies developed by the oil and gas industry, advancements in electronics and materials science, and incentivized energy policies have allowed geothermal energy projects to hurdle the technologic and economic barriers that have limited the commercial development of this resource and offered the prospect of "geothermal everywhere". This presentation will discuss how proven technologies such as geothermal heat pumps (GHPs) for direct heating and cooling applications, new techniques such as Advanced Geothermal Systems (AGS) and Enhanced Geothermal Systems (EGS) for industrial power generation, and other innovations are creating new opportunities for geoscientists to apply their knowledge of the subsurface as we move toward a low-carbon energy future.



## Biographical Sketch



Bryan Gottfried is a licensed Professional Geoscientist (TX) and holds a BS from Florida State University, an MS from the University of North Carolina-Wilmington, and recently earned an MBA from the C.T. Bauer College of Business at the University of Houston. Bryan has over 20

years of experience serving in various technical roles within the upstream oil and gas industry and has worked onshore and offshore fields producing oil and gas from conventional and unconventional clastic and carbonate reservoirs. He has also served as an expert witness during proceedings of the North Dakota Industrial Commission (NDIC) and prepared geohazards assessments for offshore drilling and facilities installations. Bryan is currently a Principal Consultant in the Low Carbon Economy Transition (LCET) Capital Project Delivery team at ERM in Houston and assists clients as they navigate the challenges and opportunities of a low-carbon future. He is particularly interested in promoting how the subsurface expertise and reservoir characterization technologies developed in the oil and gas industry can be applied towards geothermal energy and carbon capture and storage (CCS).





GOLF

TOURNAMENT

Register Now

Entry deadline Oct. 14 www.hgs.org

Monday, October 17, 2022

Early Bird Special through Oct 8

One Golfer \$150 Four Some \$600

## **HGS ANNUAL GOLF TOURNAMENT**



## 17 OCTOBER 2022 | STERLING COUNTRY CLUB



## TEAM APPLICATION

Entry deadline: October 14, 2022

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

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

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

Entry Deadline: October 14th.

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

### **Schedule of Events**

8:00am - 9:45am Registration, free use of driving range and mini games (Breakfast will be provided by Core Lab and Petro Log International, Inc.) 10:00am Shotgun start

3:00pm Cash bar, open buffet

3:30pm Door prizes and awards presentation

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

	Team Captain:	Phone:		Amount Enclosed:	_
	Company:	Email:			_
	Card Number:		Exp. [	Date:CVC:	_
	Billing Address:				_
	Phone:	Email:			_
	Card Number:		Expiration Date:	CVC:	_
	Foursome Members	Company	Phone	Email	
1					
2					
3					
4.					

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

## September 2022

Sunday	Monday	Tuesday	Wednesday
4	5  HGS Office Closed for Labor Day	6	7
11	<b>12</b> HGS General  Dinner Meeting  "The Real Energy Paradigm"  Page 16	13  HGS Board Meeting 6 p.m.	HGS E&E Meeting  "Geothermal Energy: A New Role for Geoscience in the Global Energy Industry"  Page 17
18	19  HGS Geoscience Student Expo  Page 11	20  HGS Geoscience Student Expo  Page 11	21
25	26  HGS-PESGB Africa Conference Page 12	2 7  HGS-PESGB Africa Conference Page 12	28  HGS-PESGB Africa Conference Page 12

## Cheated, Mistreated, Pushed Around?

Have you been cheated, mistreated or somehow deprived of your share of a deal, working interest or royalty? If so, give me a call. I have thirty years experience as a working interest and royalty owner in the oil and gas business to go along with forty years of court room experience. A trusted team of professionals together with the necessary resources is available to work on your case. You do not pay anything unless we win.

## Proven Results



- •\$6,000,000 Future payout projected for settlement to widow with ORRI recovered under husband's consulting contract after company contended no payments due after death.
- •\$5,800,000 Combined cash settlement for UPRC East Texas and Central Louisiana royalty owner class action cases for underpaid royalties. Court approved fee of 1/3.
- •\$4,700,000 Jury verdict, oil company violates geologist non-compete contract. Settled later on confidential terms.
- •\$2,000,000 Settlement for downhole failure of casing results in loss of well bore, net to client \$1,372,411.79.
- •\$1,175,000 Settlement for geologist and family where oil company drilled too close to geologist property. Case filed 18 years after well drilled. Net to client \$664,822.51.
- \$986,000 Cash settlement, net to clients \$657,207.60, plus future mineral interest valued at \$500,000.00. Dispute
  over mineral interest ownership from thirty year old contract.

Robert A. Chaffin

### THE CHAFFIN LAW FIRM

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

## September 2022

Thursday	Friday	Saturday	
1	2	RESERVE YOUR SPOT ONLINE AT HGS.ORG	Reservations  The HGS prefers that you make your reservations online through the HGS website at www.hgs.org. If you have no internet access you can email office@hgs.org or call the office at 713-463-9476.  Reservations for HGS meetings must be made or cancelled by the
8	9	10	date shown on the HGS website calendar, which is normally 24 hours before hand or on the last business day before the event.  If you make your reservation or the website or by email, an email confirmation will be sent to you If you do not receive a confirmation, please contact the
15  EAGE-HGS  Latin Conference	16  EAGE-HGS Latin Conference	17	HGS Office at office@hgs.org. Once the meals are ordered and name tags and lists are prepared, no more reservations can be added even if they are sent. No-shows will still be billed.
22	23	24	Pricing
29	30		In-Person Meetings HGS Members \$65 Non-Members/Walk-Ups \$75 Students \$25  Virtual Meetings HGS Members \$15 Non-Members \$30 Students \$10



## Volunteer with HGS



## **Annual Events**

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

These include events such as:

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





## Committees

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

## Interested in Volunteering?

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



## 2022 WTGS Fall Symposium

## "RETURN OF THE VINTAGE PLAYS"

September 20-22, 2022

Odessa Marriott Hotel & Conference Center 305 E. 5th Street, Odessa, TX. 79761

### KEYNOTE SPEAKER: ALEX EPSTEIN

## PROUDLY SPONSORED BY:



BOTH in-person and virtual viewing options! Online platform available for 6 months! \$475.00 WTGS Members In-Person + Virtual \$525.00 Non-Members In-Person + Virtual \$300.00 WTGS Members Virtual Viewing Only \$350.00 Non-Members Virtual Viewing Only \$40.00 Networking Luncheon \$40.00 Ethics Luncheon

Registration available online via PheedLoop: If you would like to attend the Fall Symposium, please follow the link below to register.

## ATTENDEE REGISTRATION LINK

If you would like to sponsor or exhibit at the Fall Symposium, please follow the links below to register.

EXHIBITOR REGISTRATION LINK

SPONSOR REGISTRATION LINK



SSA MARRIOTT HOTE ONFERENCE CENTER 305 E. 5TH STREET ODESSA, TEXAS 79761

Book your hotel by following the link below or visit wtgs.org for more information.

https://www.marriott.com/event-reservations/reservation-link.mi?id=1658762420816&key=GRP&app=resvlink

\*Please book your stay by September 8th to receive the discounted rate.

## **CALL FOR PAPERS**



SUBMIT A TALK OR POSTER ABSTRACT DEADLINE: DECEMBER 15, 2022



www.geogulf2023.org

72nd Annual Meeting of the Gulf Coast Association of Geological Societies (GCAGS)

## Remembrance



Stewart Chuber of Schulenburg, TX, passed away peacefully from this life on July 1, 2022, in the early afternoon with family members nearby at St. Marks Hospital in La Grange, TX at the age of 91.

Stewart is preceded in death by his wife Martha (Muffin) Anne Chuber and his son Jeffrey August Chuber.

He is survived by his daughter Valerie Anne Chuber Salazar, son in law Angel A. Salazar and granddaughters Jasmine Chuber and Camila Salazar all from San Antonio, TX. Other relatives are nephew Eric Chuber from San Antonio, TX and his family, niece Jan Fish and her family of the Woodlands, TX

Stewart was born on December 22, 1930 in Queens Village on Long Island, NY, to August and Florence Chuber. He was the youngest of three siblings. Stewart and his two siblings, Bruce and Carol were always encouraged by their parents to do their best at any endeavor that they undertook in life. This was a life skill that Stewart practiced his whole life.

Stewart attended South Side High School in Rockville Centre Long Island, NY until graduation. He enjoyed athletics very much. He played on the football and baseball teams for South Side High where he was awarded four letters as a member of the junior varsity and varsity football and baseball teams. Stewart also boxed in the Golden Gloves amateur boxing program and won a jewel studded golden glove and two medals at the age of 17 and a 135 pounds.

Stewart was very active in other school activities such as math club, the French club, and in politics. With his schoolmates he helped to start a new political party called the "Student Elect". They were successful in throwing out the traditional political folks that were in school.

Rounding off his high school years Stewart always loved the beach. He became a lifeguard at Long Beach and Jones Beach on Long Island, NY that continued through his senior year in high school and during summer breaks when in college.

Stewart was an avid pilot and received his pilot's license in 1956. He has flown collectively hundreds of hours throughout his lifetime. Stewart continued to fly recently right up to days prior to his passing. He would fly his plane on the weekends looking out into the peaceful horizon and with a bird's eye view all of the geological landscape.

On becoming a geologist, his older brother Bruce suggested he study in college the field of geology or geophysics. He was referred by his high school advisor to attend the Colorado School of Mines in Golden, Colorado. Stewart decided to attend Mines and turned down a four- year scholarship to Amherst. A 2000 mile journey from Long Island, New York to Golden, Colorado to a new life and new beginnings. Who knew that it would lead to a journey in geology that spanned seven decades?

At Mines, Stewart joined the Alpha Tau Omega fraternity and worked in their house as a hasher for a reduced room rate. He also worked as a barber and worked for the railroad to support himself while attending Mines.

Stewart continued to play football his first year, but was too small to go on any further. He was on the boxing team for 3 years and on the swimming team. Stewart also participated in several organizations and in publications. He joined the staff of the Mines newspaper "The Oredigger", where later he became the editor.

Stewart graduated from Mines in 1952. He furthered his education at Stanford University in California for his masters and doctoral degrees. Stewart met the love of his life Martha (Muffin) Anne Riggs in a square dance band in 1953.

They were both attending Stanford and working on their master's degrees. They were married June 6, 1953. They were married 64.5 years.

Stewart graduated with his master's degree from Stanford in 1953. After receiving his master's degree he worked for about three years for Mobil Oil Company (of Canada). While working for Mobil, Stewart and Anne traveled to Libya in December 1953 for work. Stewart worked near Garian, Libya, Tripoli and Sirte Basin in central Libya. Stewart found his work in Libya as an incredible experience. They were surface mapping in the desert an area of 340,000 square miles which is the size of Texas and Oklahoma combined. Stewart and Anne returned to Sacramento, California from Libya. Working in the Sacramento Valley Stewart continued to work for Mobil where he finished his doctoral research at Stanford. Mobil provided Stewart a small salary and jeep to use to do subsurface work. Mobil had helped him substantially. Stewart completed his field work for his doctor's thesis in 1961 and was very grateful to Mobil.

Stewart left Mobil and started working for Franco Western Oil Company in Bakersfield, CA. He worked for Franco about 1 year where he was then asked to transfer to Franco Western out of Midland, TX.

This move from California to Texas was a whole new beginning for Stewart and the world of geology for him and his family. Stewart, Anne and their son Jeffrey, born 1961, made the move. Valerie, was born in 1964, while they were in Texas. They became Texans with a little bit of Yankee accent.

In 1965 Stewart left Franco Western which was bought by Mobil to begin a consulting relationship with Butes Gas & Oil. In 1968 Butes Gas & Oil offered Stewart a job in the Gulf Coast area in Houston, TX. Stewart was their Upper Gulf Coast manager. He wasn't just the manager but was their entire staff for the region.

The Gulf Coast Region became an area of expertise for Stewart. He worked as an independent and also worked for various Oil & Gas companies. He excelled at generating prospects and selling drilling deals.

## Remembrance...continued



In 1978 working as an independent, Stewart, Anne and family moved to Schulenburg, TX. Schulenburg became home for him and his family. Living and being a part of Schulenburg and its community for 44 years. Stewart worked extensively in the Hallettesville area out of the Gulf Coast region. He started generating prospects and

became associated with Howell drilling.

Stewart and Anne formed and started Mascot Oil and Fayette Exploration on November 14, 1980. Mascot Oil was the operating company for Fayette Exploration. Later Tx Lavaca Pipeline Inc. was established with a joint ownership with Frank Migl of Hallettesville, TX. Currently to this day both companies Mascot Oil & Fayette Exploration are still operational along with Tx Lavaca. Stewart continued his golden years working and generating prospects as it was never a job to him, but a hobby that he loved and enjoyed very much right up to his passing.

Throughout Stewart's life in geology, he has always believed in giving back and helping others become educated. With his philanthropic nature he dedicated himself to the Colorado School of Mines with generous donations for scholarships. He participated in a Geoscience Bootcamp that was hosted by Sub-Surface consultants. The curriculum was a part of their training program. The recipient of Stewart's AAPG Foundation Scholarship was a gentleman named Joe Dumesnil. Stewart was Joe's mentor for 12 weeks in geology and geophysics. A rewarding experience for Stewart to mentor this recipient.

Stewart was strong in his faith and his friendship with God. He enjoyed being a part of his church, St. James Episcopal in La Grange, TX. Attending almost weekly the Sunday service and bible study. He was also a big supporter to his community. He was a member of Lions Club. He held different positions of office in Lions Club and was ready to volunteer when it was needed.

Stewart believed that professional organizations were the best way to meet new people and establish business contacts, have continuing education for oneself and more importantly have great friendships. Throughout his life in geology, he was a member of several geological professional societies and held numerous positions amongst these societies. Stewart wrote numerous papers and publications in these societies. He has been honored for his service, generosity, and dedication to the Oil & Gas industry with various achievements and awards.

Stewart has been affiliated with the following professional societies where he has written publications and has received awards for his service and dedication:

PUBLICATIONS: Author or co-author of 31 scientific articles

### **PROFESSIONAL AFFILIATIONS & ACTIVITIES:**

### American Association of Petroleum Geologists

Certified Petroleum Geologist; Div. Prof. Affairs, Member; Academic Liaison Com. 1978-79; Continuing Ed. Com., 1978-80; Convention Field Trip Chair, 1979; Convention Short Course Co- Chair, 1989; Vice President, 1994-95; Student Chap. Field Trip & Short Course Chair, 1995 Convention; House of Delegates, 1995-present; House of Delegates, various committees

## Society of Independent Professional Earth Scientists

National - Director, 1982-85; Treasurer, 1983; Vice President, 1984; Convention Chairman, 1979; Convention Field Trip Co-Chairman, 1993 San Antonio Chapter - Chairman, 1981, 2006

## Geological Society of America

Former Fellow

## Society for Sedimentary Geology (SEPM)

Poster Session Award Chair, 1984

### <u>Gulf Coast Association of Geological Societies</u>

Transactions Editor, 1973; Athletic Events Chair, 1982; Awards & Nominations Com. Chair, 1988-90; Vice President, 2002-03; President, 2003-04

### Permian Basin Section, SEPM

Guest lecturer, 1962; Program Chair, 1963-64; First Vice President, 1964; President, 1965

### South Texas Geological Society

Core Workshop Leader, 1986; Continuing Ed. Com. Chair, 1988-2000; Honors & Awards Com. Chair, 1989; Austin Chalk Symposium, Editor, 1991; Guest lecturer, multiple; Vice President, 1999-2000; President-Elect, 2000-01; President, 2001-02; various ad hoc committees

### **Houston Geological Society**

Research Com. Chair; Second Vice President, 1974-75; First Vice President, 1975-76

## West Texas Geological Society

Editorial Com. Chair, 1966-67; Field Trip Coordinator, 1967; Oil Study Group, 1963-67; Pennsylvanian Subcom. Chair; Evening Program Chair, 1967-68; Symposium on Cyclic Sedimentation in the Permian Basin, Co-Editor

## Sacramento Geological Society

Guest lecturer, multiple

## Bakersfield Geological Society

Stratigraphic Seminar, Chair, 1960-61; Guest lecturer, multiple

### PROFESSIONAL HONORS & AWARDS:

HGS Best Paper Award, 1971-72 HGS Distinguished Service Award, 1985 GCAGS Distinguished Service Award, 1991

## Remembrance...continued



STGS Honorary Membership, 1995 AAPG Distinguished Service Award, 1997

GCAGS Honorary Membership, 1998 AAPG Honorary Membership, 2004 AAPG Foundation Chairman's Award 2021

Stewart Chuber was an exceptional human being. He always had a smile

and kind words to all that he encountered in his daily life. Stewart lived with much joy and happiness. We will be celebrating Stewart and his life with a memorial service and inurnment will be held at 11:30 September 24, 2022, at the St. James Episcopal Church, 156 North Monroe Street in La Grange, TX. In lieu of flowers, memorial donations may be made to St. James Episcopal Church, or the Gardenia Jansen Animal Shelter, 240 Svoboda Lane, La Grange, TX.

This obituary was summarized from the Koenig-Belwill Funeral Home & Cremations site on July 19, 2022.

"On a personal note, I first met Stu in 1963 when I moved to Midland after graduate studies at Illinois. Stu was Program Chairman for the Midland Geological Society and invited me to present my MS Thesis to the Society. He was a very friendly and knowledgeable person."

- John Tubb



## Remembrance



Roland B. "Ron" Keller passed away on August 7, 2022 at his home on Hospice care, in Watertown, SD. He was born on in Philadelphia, PA to Ruth Adams and William Keller and raised in Winter Park, FL. He attended Winter Park High School, Orlando Jr College, and the University of Florida where he earned a Bachelor's and Master's Degree in Geology. He was a member of the Phi Kappa Phi Honor Society.

Ron married Barbara Greene on August 20, 1960 in Winter Park, FL and they had two children, Brad and Allison.

Ron began his Oil & Gas Exploration career at Amoco and went on to Florida Gas, Volvo Petroleum, Sandefer Oil & Gas, and Blue Dolphin Energy. He was a mentor to many as he successfully managed

exploration teams in Texas, Louisiana, Mississippi and their Gulf Coast area.

Ron married Laurie J. Brandriet on June 8, 1980 at the Mirtha Dunn Chapel in Houston, TX. They resided in West University for 37 years prior to retiring to Laurie's home town, Watertown, SD, to a beautiful acreage on The Prairie.

Ron is survived by Laurie, his wife of 42 years, his son R.B. "Brad" Keller, Jr., Cypress, TX, his daughter Allison (Wallace) Smith, St. Louis, MO and Franklin, TN, his granddaughters Anna (Chase) Smith, Emily (John) Boesch, Meghan (Matthew) Massey and Liliya Keller, his grandson Ian Keller, and 3 great grandchildren, Grier and Wynter Massey and Marlowe Boesch, his sisters, Susan Head, Tallahassee, FL and Karen (Jerry) Sarno, Orlando, FL, his brother in law, Randy Brandriet, Pierre, SD, and many nieces and nephews.

Ron was preceded in death by his parents, his brother, William Keller, Jr., his brother in law Charles Head, his sister in law, Wendy Brandriet, and his mother and father in law, Carroll and Shirley Brandriet.

Published by Houston Chronicle on Aug. 14, 2022.



## Remembrance



Martha McRae served the Houston Geological Society with honor and distinction. She was a geologist who not only worked for some of the world's largest oil and gas companies, but volunteered countless hours to inspire others, especially the younger generation, to appreciate both the art and science of geology.

Over the years, HGS recognized Martha for her volunteerism and devotion to our society, presenting her with the HGS Rising Star and Presidents Awards. HGS is honoring Martha posthumously this year with the HGS Distinguished Service Award to commemorate a lifetime of outstanding excellence and service to the Houston Geological Society and the geosciences.

Martha was central to the success of HGS' largest public outreach event, Earth Science Week. At the annual event, HGS and its sister organizations connect with thousands of people who are interested in the sciences. Activities include the Houston Museum of Natural Science (HMNS) Family Energy Festival, field trips, and K–12 activities geared for teachers and students.

Martha would lead the Earth Science Week field trips to such locations as the High Island Salt Dome in Jefferson County, and Whiskey Bridge that crosses the Brazos River near Bryan, Texas. She oversaw the planning and implementation of associated Earth Science Week activities, which required months of preparation and commitment.

Furthermore, she organized the HGS booth at the Houston Gem and Mineral Society's Annual Show, which provided another opportunity to showcase our society and connect with the community.

Additionally, Martha served as an American Geological Institute educational science lobbyist for 11 years and volunteered at the Houston Museum of Natural Science as a geoscience docent for 13 years.

She earned a Bachelor of Science in geology and a minor in computer science from Stephen F. Austin State University and a Master of Science in geology from Texas A&M University.

She was a Licensed Professional Geologist in the state of Texas, and a member of AAPG, GSA, AWG, and HGMS. Martha's love of geology was also showcased in her home – most notably in the form of an extensive rock and fossil collection catalogued and displayed in a special room. Samples were collected from her geological trips, however, a number were also procured from the Houston Gem and Mineral Society, in which she was a member.

Her fascination with this wonderful planet, and its rock formations, was equally matched by her love of the plants and animals that inhabit it.

Martha was a Texas Master Gardener, specifically a Highland Lakes Master Gardener, and received a certificate in Installation and Maintenance of Native Landscapes from the Native Plant Society of Texas. She created and nurtured a native plant sanctuary on her Lake Travis property near Austin.

She was also devoted to animal rescue and protection efforts, with a particular interest in fostering Italian Greyhounds. She adopted and cared for a number of rescued greyhounds, providing them with a loving home for the rest of their lives. She also became an ardent birdwatcher and observer of wildlife in general – spending time on her back porch witnessing their activities and sharing these experiences with others.

Martha loved to travel, with her adventurous spirit taking her to fascinating areas around the world including Alaska, Hawaii, Iceland, Japan, Norway, Scotland, Columbia, and Galapagos Islands, to name a few. When not traveling, she explored the world through books – amassing an impressive collection that reflected her many interests.

Most of all, Martha loved the company of her family and friends, frequently hosting gatherings at her home for those nearby and others traveling from out of town. She was also active in Bible studies and a variety of book and garden clubs and enjoyed playing dominoes with her neighbors.

As she loved this wonderful world, she taught us through example "to do what you love, and love what you do."

## CARL E. NORMAN, PHD, PG. CPG 1931-2022

## Remembrance



Carl Edgar Norman passed from this life on August 03, 2022 at the age of 91 years seven months and two days. Carl was Professor Emeritus in the Department of Geosciences at the University of Houston where he had taught and conducted research in structural geology and rock mechanics for 35 years. Carl is the last of an early group of

geologists – which included the likes of DeWitt Van Siclen and Saul Aronow – who had an extensive knowledge of the surface and near surface geology of the Texas upper gulf coast as well as its geomorphology. Carl was considered the foremost authority on surface faulting along the gulf coast of Texas and Louisiana and was widely known and respected for his expertise.

Carl was born on February 01, 1931 to Oscar Edwin and Grace Genevieve (née Thune) Norman in the small farming community of Cokato, Minnesota. Reared on a dairy farm, which in addition to producing milk also raised crops such as corn and soybeans, Carl had an appreciation for hard work and possessed a mechanical aptitude that is typical of young men who grew up on a farm. After graduation from high school in 1948, Carl worked in various jobs which included working in the local Jolly Green Giant cannery and working in a remote railroad maintenance camp in northern California. Enlisting in the U.S. Air force shortly after the outbreak of the Korean War in 1950, he worked as a mechanic on aircraft and aircraft engines, and this included servicing the Convair B-36 "Peacemaker" which was the largest piston-driven bomber ever built. Carl was honorably discharged with the rank of sergeant from the Air Force after four years of service.

Carl took advantage of the GI Bill and enrolled in the University of Minnesota where he received a B.S. in Geology in 1957. He then enrolled in the graduate program at The Ohio State University and attained his M.S. in Geology in 1959. With his master's degree in hand, he went to work for Carter Oil (soon after to become Humble Oil and Refining). After working a few years in the oil and gas industry, he returned to The Ohio State University in the early 1960s to pursue his PhD. While working on his doctorate degree, Carl received a prestigious National Science Foundation Scholarship. In 1965, while working on his dissertation, Carl accepted a position at the University of Houston as an instructor. In 1964, Carl was invited by NASA to apply to the Astronaut Corps as one of the first scientists who were not pilots. Unfortunately, Carl was ultimately disqualified because of an ephemeral issue with his eyesight.

Following the completion of his PhD in 1967, Carl accepted a permanent faculty position as a professor of geology with the University of Houston. During his time at the university, he taught physical geology to more than 6,500 students and worked with numerous graduate students. Carl was the Geoscience Department's field camp instructor for 12 years. He led his students on field trips into New Mexico and

interior Mexico as well as a trip to the Grand Canyon. His abilities as a teacher were recognized in 1992 with his receiving the Gulf Coast Association of Geological Societies' Outstanding Educator Award.

Starting in the late 1970s, Carl began working with his fellow professor DeWitt Van Siclen on the geologic hazard of surface faulting in the Houston Metropolitan Area. Their research into the nature of surface faulting was greatly assisted by the work of graduate students who put in many hours of literature and field research. As the public became ever more aware of the risk posed by surface faulting, their efforts in studying this phenomenon grew beyond academic research into consultation for governmental entities, private companies, and individual property owners who were concerned with the problem. In 1985, a collaborative effort was put forth by Carl Norman, DeWitt Van Siclen, Bill Ellsbury (McClelland Engineers), Bob Valentine (Woodward-Clyde Consultants), and Lynn J. Ratliff (McBride-Ratcliff) to produce guidelines for surface fault investigations along the Texas Gulf Coast. This work was published under the auspices of the Houston Geologic Society in its monthly bulletin and was entitled "Investigation of Surface Faults in Texas Gulf Coast Region". Today, 37 years later, these guidelines are still the standard for surface fault investigations along the gulf coast.

When Carl retired from the University of Houston in 2000, his consulting work became full time and the demand for his services often had him working as many as seven days a week. His consultation work was applied geology concentrating in the geologic sub-discipline of engineering geology. Besides his work with faults, Carl was hired to work on a variety of projects dealing with other geologic hazards. In particular, he was noted for his work with sinkholes which began with his investigation of the Boling Sinkhole in Wharton County, Texas. In west Texas, Carl was hired to study the Wink Sink and Wink Sink II and predict the likelihood and locations of future sinkhole manifestations. His most recent effort with sinkholes was investigating the Daisetta Sinkhole which garnered national media coverage.

Part of Carl's work was providing expert witness testimony for which he testified in more than two dozen administrative hearings and trials. Various governmental entities would consult with Carl, and he and Richard G. Howe developed the requirements for surface fault investigations for the City of Houston.

Carl was well known within his profession and was an active member of the Houston Geological Society (HGS) and the Association of Environmental & Engineering Geologists (AEG). In addition to the aforementioned HGS guidelines for fault investigations, his work with HGS included organizing many field trips and serving on the board of the Warren L. and Florence W. Calvert Scholarship Fund for 44 years. His participation on the fund's board was at the urging of its founder, Warren Calvert. At the time of his retirement from the Calvert Scholarship Fund, where he first served as secretary until his appointment as chairman in 2001, the

## CARL E. NORMAN, PHD, PG, CPG 1931-2022

## Remembrance...continued



fund had awarded \$519,850 in scholarships to 178 graduate students from 25 universities. For his many years of service to HGS, he was awarded the HGS President's award in 2004 and the Distinguished Service Award in 2018.

Carl's service to professional

societies extended to AEG where he developed and led several field trips and gave talks about the hazards of surface faults and how to detect them. In particular, his work for AEG included speaking at the seminar on seismicity and faulting at AEG's 2007 national convention in Los Angeles and working on the 2010 Shlemon Specialty Conference which addressed modern subsidence, sea-level rise, and the future of the gulf coast. For his extensive work with AEG, Carl received the Floyd T. Johnston Memorial Award for Outstanding Geologist from the Texas Section of the AEG in 2010.

He was also a long-time member of the Geological Society of America and gave presentations at several of their regional conferences. Carl worked actively until late July of 2020 when he was involved in a major automobile accident which affected his ability to work in the field. Shortly thereafter, he finally retired at the age of almost 90. Prior to his accident, Carl was regularly in the field slogging through wetlands and thrashing his way through dense underbrush, even in the horrendous summer heat and humidity of the Texas gulf coast. Until the end of his career, Carl was a licensed professional geologist with the State of Texas and a certified professional geologist with the American Institute of Professional Geologists.

Carl's temperament ranged from gregarious and fun loving to dedicated and persevering. He never met a stranger he did not like to talk with and was always ready to freely relay what he knew about a professional topic, no matter who asked. His sense of professionalism and responsibility was revered by the engineering community, and he was known to many land and residential developers.

In addition to his parents, Carl was preceded in death by three sisters: Pearl Norman, Ruth Norman Lindahl, and Delores Norman Larson. He is survived by his daughter Ingrid Norman Monroy, his grandson Michael Joseph Monroy, and his brother-in-law Gerald Larson.

Carl will be sorely missed by his many friends and colleagues, and he will not soon be forgotten.

For those who wish to remember Carl, donations may be made to Mikey's Place, a 501(c)(3) nonprofit named for his grandson which assists families of children with disabilities." https://mikeysplace.net



## Remembrance



George Sealy, Jr. (aka George Sealy III) age 95, died peacefully at home on July 23, 2022. He was born in Galveston, Texas on May 4, 1927, the son of George Sealy and Eugenia Taylor Sealy. George and his family lived in his family home on Broadway known as "Open Gates". They later lived in the Galvez Hotel until their home was completed at

53rd and the Boulevard.

George began school in Galveston but left at the age of eight to live on a ranch outside of Uvalde, Texas with his maternal grandparents. During his four years at the ranch, he attended a one room schoolhouse where he excelled academically. The experiences on the ranch molded George into the unique person he was – one of the last of the real gentlemen, kind, humorous, a true Texan with great integrity, always willing to help a stranger or to brighten their day with a smile and a bit of humor. George later moved with his grandparents to San Antonio, he attended San Antonio Academy and Texas Military Institute where he was National Honor Society President and Cadet Battalion Commander.

In 1944 George entered Princeton University. After one year at Princeton, George's studies were interrupted by WWII. Following OCS, he was sent to the Pacific where, as a 2nd Lt. at the age of 19 and prepared by his 6 years in military school, he commanded a company of the prestigious Philippine Scouts.

Returning to Princeton University, George initiated the formation of Princeton's Rifle Team. He lettered in that endeavor; the team went undefeated. After graduating from Princeton with honors, George began his Masters program at the University of Texas where he earned his Masters Degree in Geology, and where he began dating Ann McSween.

George moved to Houston and began his career with Humble Oil and Refining Company (Exxon Mobil). In 1952 he married Elizabeth Ann McSween of San Antonio. Ann and George raised two sons and twin daughters. The family had many excursions in their RV, spent leisure time at their bay house in Jamaica Beach on Galveston Island, and their farm near Columbus. Ann and George also made numerous trips to England, Scotland and Europe, before her death in 1993.

At Humble (Exxon) George's career began in the Exploration Department, however he spent most of his years in the Production Department. He became Operations and Planning Coordinator for the Production Geological Group in Headquarters, Exxon USA. He loved his work, but in 1985, after 33 years of service, he retired early to travel more with Ann and to manage the Sealy Land Company for his extended family. His last RV was a luxury bus which he took to UT football games, dove hunting trips, visits to the Texas border, and other weekend trips. After Ann's death, George

sold his bus but continued his trips with hunting buddies, his tennis group, supper clubs and other friends. In 1995, George and Dorothy Falkenberg began their close relationship. They had worked together at Exxon since 1953. One of George's great loves was to spend weekends at his farm near Columbus, Texas with friends and family and all his farm vehicles.

George and Ann were members of St. Martin's Episcopal Church where George served on the Vestry, was president of St. Martin's Foundation, was on the Board of St. Martin's Endowment, served as Senior Warden, and was presented the St. Martin's Star Award. Other Organizations to which he had belonged included the Kiwanis, Houston Geological Society, American Institute of Professional Geology, Geological Society of America, the American Association of Petroleum Geologists, and the National Geological Honor Society Sigma Gamma Epsilon. He was proud to be a lifelong member of the NRA. He also was a member of the Executive Association of Houston (and past President), The Petroleum Club and The Houston Country Club. He served as the Executive Vice President of The Sealy and Smith Foundation in Galveston. For over 30 years he served as Managing Partner of Sealy Land Company and President of the George and Magnolia Sealy Foundation.

George was pre-deceased by both parents and by his wife of 41 years, Ann McSween Sealy. He was also pre-deceased by his sister Eugenia (Jeannie) Sealy Cross and her husband Oliver Cross of Asheville, North Carolina; by his brother Lane Taylor Sealy and his wife Martha Ann (Marty) Sealy of San Antonio; and by brother-in-law and sister-in-law Paul McSween and Linda Lewis McSween. He is survived by his son George Sealy IV and wife Lita Settegast Sealy of Houston; daughter Amanda Sealy Frenzel and husband Todd Frenzel of Austin; daughter Elizabeth Ann Sealy of Sugar Land; son William Robert Sealy and wife Susan Allen Sealy of Austin. He is survived by six grandchildren: Hilary Sealy Burch and husband Patrick Burch of Houston; Marion Sealy of Houston; George Sealy V and wife Jenny Mueller Sealy of Houston; Kendall Sealy, William Sealy Jr and John Sealy all of Austin; and two great-grandchildren: Patrick Burch Jr. and Thomas Sealy Burch. George is also survived by Dorothy Falkenberg of Houston, who has been his dearest friend and devoted companion since 1995. George is also survived by numerous nieces, nephews, and cousins.

Published by Houston Chronicle from Jul. 30 to Sep. 11, 2022.









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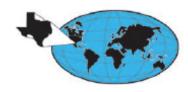
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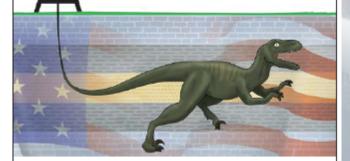
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Text should be submitted by email as an attached text or Word file or on a clearly labeled CD in Word format with a hard copy printout to the Editor.

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.

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