

Jan 2022



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# GSH Journal

GEOPHYSICAL SOCIETY OF HOUSTON  
Volume 12 • Number 5



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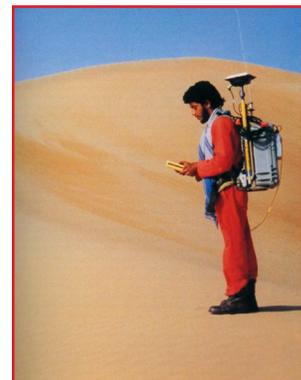
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### On The Cover...

GPS surveying during seismic exploration in 1999.

Photo courtesy of WesternGeco.



2022  
New Year,  
New Format,  
New Ideas

For the New Year, we would like to enter 2022 with an invitation for new content ideas. Feel free to send in your own or solicit new contributions! If you would like to be more involved with the new publication style please let me know. Reach out if you have any questions :)

Katie Fry, Editor at orourke.kathryn@gmail.com

## EDITOR'S NOTE

To ensure your information reaches the GSH members in a timely manner, please note the following deadlines and plan accordingly. Please submit your articles and any questions to **Katie Fry, Editor** at orourke.kathryn@gmail.com

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Feb 2022 ..... Jan 14, 2022  
Mar 2022 ..... Feb 16, 2022

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# A Word from the Board

By Peter Eick, President-Elect



The President Elect position on the board is special in that it transcends four years. It is actually one of the longest members of the GSH board as one year you serve as the President Elect, the next year you are the GSH President, then Past President and finally your last year you serve as the Past Past President (yes, that is really the title). This four-year commitment to the GSH board tends to moderate extreme positions as

you join the board as the Elect and learn about the issues facing the current President and the board in general. You then get your turn at addressing the issues when you are President and finally as the Past and Past Past President you get to help mentor those following to deal with the tough problems facing the GSH Board. This four-year running commitment allows good ideas to percolate and develop into better ideas. It also gives time to allow for extreme ideas to get filtered out, carefully considered, and abandoned for better solutions. This is especially important when facing significant problems impacting the GSH and the industry as a whole.

Today we deal with many big changes in society and the oil industry in general. As I write this, Oil prices are back up over \$80 for WTI and Natural Gas of all things are regularly going for over \$5.50/MCF. A gallon of gas costs me over \$3/gallon today and for the inflation hit a rate of over 6% which is the highest rate in over 30 years. Covid 19 is still perking along in the US and while the rates of infection are dropping in Texas and the south in general, there is talk that the "Delta variant" is finally burning out and in the same breath we hear the "Lambda variant" is the next one to come on. Vaccines, boosters, masking and "social distancing" are still the buzzwords of the news. Is Covid a permanent fixture for the future or will it go away and become like Influenza ie: a yearly nuisance. At the same time, in the GSH board meetings we are discussing topics like, virtual meetings, "Zoom" and "Teams" online meetings and how do we manage "face to face" vs, "online" meetings. For those working at home some portion of their workweek, Internet bandwidth and video camera's when from "nice to have" to "absolute must haves" in a very short time frame. All this change occurring over a short period of time has forced fundamental changes on the society.

So, what are the big issues that face the GSH board? One might have thought that Covid and Covid's direct impacts on in person or "face to face" meetings would be our top concern and while that is still on the short list, the number one concern is declining membership. The pre-Covid multi-year downturn in the industry that started around 2014 costs us many of our peers and the Covid caused lack of demand has continued to whittle down our ranks. Today, as the oil prices and gas prices ramp up, we have not seen the uptick in hiring we would normally expect and while we do have some old members rejoining the society (Welcome back!), we still need more members

to join and participate in our activities and events. Basically, we need dues paying members who can continue to fund our society or significant changes will become unavoidable. Our membership peaked in around 2014 and since then, we have been losing about 100 members per year and while I would have thought this decline curve would eventually become asymptotic, so far, no luck. As we all know if a producing well has a linear decline and does not go asymptotic then eventually that well gets put on the Plug and Abandon list. If I continue my well analogy, even if the decline flattens out and morphs into a "stripper well" slowing losing a few barrels/day here and there, it too will eventually become P&A-ed.

Our society much like my producing well analogy mentioned above needs a workover and we need to do it quickly before the problem gets out of hand. You might ask how bad is the loss of membership problem? Referring to the membership reports, back in 2015, we had 1539 active members and today with have 778 by the same measure. While not exact, we have effectively lost half the active members in 6 years. This is a very significant decline by any measure and frankly action needs to be taken.

My predecessor, now the current President recognized this problem when he was in my position, and he started an aggressive campaign to address the loss of members and how to manage a continually reducing headcount in light of fixed overhead and operational costs. His vision was to reform the GSH into something more relevant to all members where folks would want to be members and thus the membership would rise naturally.

Today, there are some creative ideas that are being actively discussed, considered and at times even debated on the board. They are not fully developed so other ideas may supplant them and develop over time. As the future GSH President I believe that it is my charter to carry on this vision and the efforts of our current President and board to turn around the membership numbers or implement one of the more aggressive solutions to the declining membership problem.

You might ask, how can I help, how can I, a general member assist in the effort to turn the GSH membership numbers around? If you are reading this, you are probably a GSH member, so you can participate in on-site talks and lunches. You can encourage your peers to join the society and mention all the great talks we have recorded that can only be viewed as a member. You can contemplate the declining membership problem and contact anyone on the board and offer your suggestions as to how we could encourage more geoscientists to join the society. We on the board do not have a monopoly on good ideas so please let us know what you think about the problem and how we could fix it.

Finally, I offer this challenge to each and every GSH member. If you personally, could encourage just one person to join the GSH we would be back at our 2015 levels and the society would be more vibrant, financially stable and growing again. □

# GSH Technical Events

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## Data Processing and Acquisition SIG

*Commercial-Quality Ant Tracking: A One Hour Primer*

**David Paddock, Schlumberger-Retired, Paddock Geophysical**

[Abstract and Bio](#)

Online Event - Jan. 11, 2022 - 5:00pm-6:00pm CST

[Register](#)



## Tech Breakfast

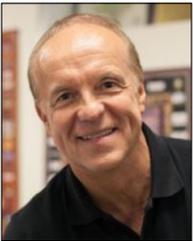
*Direct Probabilistic Inversion Applications for Reservoir Characterization Case Studies*

**Raul Cova, Lead Geophysicist, Qeye Canada**

[Abstract and Bio](#)

Online Event - Jan. 12, 2022 - 7:00am - 8:00am CST

[Register](#)



## Tech Lunch

*Blue Skies and Red Soil: What's Geophysics' Place in the New Space Economy?*

**Robert R. Stewart, University of Houston, Cullen Chair in Exploration Geophysics and Director of Allied Geophysical Laboratories**

[Abstract and Bio](#)

In Person Event - Jan. 19, 2022 - 11:00am-1:00pm CST

[Register](#)



## Potential Fields SIG

*Geophysical Insights Into Paleoproterozoic Tectonics in the Southern Superior Province, Upper Peninsula, Michigan*

**Ben Drenth, US Geological Survey's Geology, Geophysics and Geochemistry Science Center in Denver, Colorado**

[Abstract and Bio](#)

Virtual Meeting - Jan. 20, 2022 - 4:00pm - 5:00pm CST

[Register](#)

# Apache

EXPLORING WHAT'S POSSIBLE



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**TENNIS**  
TOURNAMENT

**12 - 5 PM FRIDAY FEB 18, 2022**

**Chancellors Family Center**  
6535 Dumfries Dr

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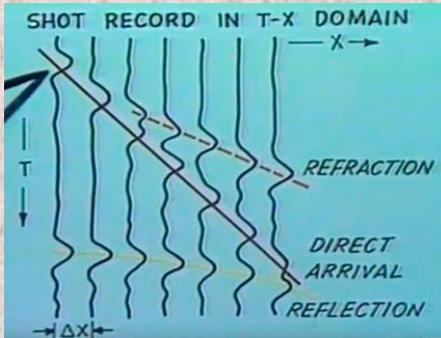


# GSH Movie Time



## Now Showing Velocity Filtering\*

By David B. Hays – Sept 1979

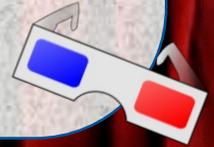


This lecture is the second in a series on the topic of “Wavelet Processing”.

Additive noise in a seismic trace is classified as random or organized. Random noise, such as tow noise in the marine environment or surface traffic on land, is not organized. It would not be duplicated in repeated recordings of the same shot-record.

Organized noise, such as ground roll and air waves, are organized events that are recorded across the shot record. These events must be removed before compensating for propagation and transmission effects, attenuating multiples, or collapsing the wavelet.

**Velocity filtering** is a technique designed to attack coherent noise.



Click on red ticket to view movie

\* GSI vintage videos courtesy of Schlumberger – WesternGeco

## GSH and SEG Past Presidents Luncheon

October 15, 2021



Left to Right: Ray Farrell, Lee Lawyer, Bill Gafford, Don Frye, Mike Schoenberger, Steve Danbom,

Wulf Massell, Kathy Hardy, Bob Wegner, Mike Gaul, Dave Monk, Paul Schatz, Rob Stewart,

Dennis Yanchak, Tad Smith, Tommie Rape, Craig Beasley, Maurice Nessim, Scott Singleton, Peter Duncan. □

# Mystery Item

This is a geophysical item...

Do you know what it is?



This month's answer on page 14.



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## Item Of Interest

The early years of seismic exploration involved much experimentation and development of field acquisition parameters. A bothersome event was called a Ghost Reflection, i.e., a reflection which had an initial upward direction. Depending on the reflection coefficient of the boundary above the shot, a Ghost event can have significant amplitude. To reduce that amplitude, multiple charges were placed in the hole and fired sequentially from top to bottom. The idea was to increase the downward traveling energy relative to the upward traveling energy. One clever method of enhancing downward traveling energy was the "Broomstick Charge". Instead of connecting multiple charges, detonating cord was wound around a long pole of some kind, perhaps tens of feet long. It was capped at the upper end. This created a downward detonation of the charge, hopefully timed (because of the winding) to the velocity of the downward traveling seismic waves.

Broomstick charges had mixed results. Fortunately, the Ghost reflection problem was reduced by introduction of multifold data acquisition (CDP).

LCL □

# Geoscience Center

## *The History of Geophysics* By Bill Gafford

1790 W. Sam Houston Pkwy. N. (Right on Shadow Wood)

Our Living Legends Doodlebugger **social event on November 10** was well attended and included a few new attendees, as well as some of the regulars. A few of the mystery items that have appeared in past GSH Journals were on display for discussion, as well as a few of our newer donated instruments. These events are an opportunity for some of our senior members to gather, enjoy light snacks, and catch up on current events in the oil patch. Anyone is invited and no registration is necessary. The **next event will be on February 9, 2022**.

We continue to receive donations of books, manuals, and geoscience artifacts from the past. One interesting item received in the fall is shown in the picture included with this article. It is a Thermo-Hygrograph which was used in the 1950s as part of the International Geophysical Year program to study the earth. Scientists from 67 nations participated in the coordinated program to learn about the physical properties of the earth, as well as the atmosphere. Each country shared their research with the other participating countries in order to produce a world view of the earth based on the available technology at the time. The instrument pictured recorded temperature and humidity over extended periods of time. While it is not a typical geoscience related item like others we have at the Geoscience Center, it was involved in exploration of the earth, and illustrates technology from the 1950s. □



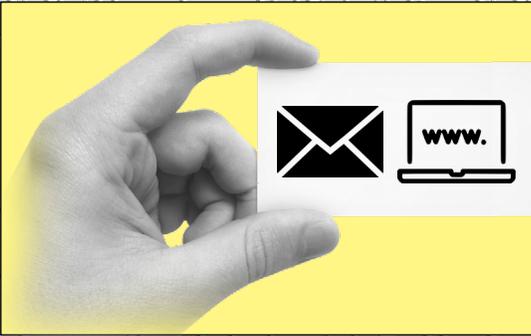
Thermo-Hygrograph

## VOLUNTEERS

**Volunteers are always needed** to help research some of our older instruments and artifacts to determine how they fit into the exploration picture of their time. We have other projects available for anyone who would like to contribute to our activities.

This is another reminder that we still have plenty of books, manuals, and periodicals that are duplicates to our inventory and are available for FREE. These include textbooks, training manuals, workshop notes, and a variety of geoscience related SEG and AAPG publications. Items in our permanent Library Collection are also available to be checked out.

The Geoscience Center is usually open on Wednesday mornings from 9:00 until noon, by appointment, and visitors are always welcome. Please contact me at: [geogaf@hal-pc.org](mailto:geogaf@hal-pc.org) or by phone at: 281-370-3264 for more information.



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# GSH Outreach

## Committee Activities *By Lisa Buckner, outreach@gshtx.org*

Outreach events are finally back in-person now that students are eligible for COVID-19 vaccination.



On the evening of **Friday, November 19, 2021**, GSH Outreach volunteers participated in the **Dulles High School STEM Night** event organized by the Mu Alpha Theta (math honor society). The event was held to foster and encourage elementary and middle school students to pursue their interests in science, technology, engineering, and math. Most of the booths appeared to be hosted by high school students but the UH SEG Wavelets and AAPG Wildcatters also participated. GSH booth activities included knocking on the table and observing the generated waves on a laptop, crude oil and rock samples, drilling for oil game and wave motion demos using a rainbow coiled spring. We gave away 40 GSH logo coiled toy springs and "Earth is Calling ... will you Answer?" brochures. A Maps in Schools Project map was also given to a teacher. Special thanks to our event volunteers: Huw James, Heather Yao and Lisa Buckner.



The **Science and Engineering Fair of Houston (SEFH)** needs you to volunteer. At least six GSH volunteer Special Awards Judges will be needed on **Saturday, February 26, 2022** from **11:30 AM – 4:15 PM** (lunch is included) at the George R. Brown Convention Center Hall E to select winners for GSH Awards. We work in teams and no previous judging experience is necessary. Contact the GSH Lead Judge to volunteer at [outreach@gshtx.org](mailto:outreach@gshtx.org). The SEFH is also in need of **500 Place Award Judges**. Note the **addition of new categories**, including: Earth and Environmental Sciences, Systems Software, Biomedical Engineering, Chemical Engineering & Materials Science, Embedded Systems, Engineering Mechanics, and Environmental Engineering. Information regarding the fair can be found at <http://www.sefhouston.org>.

## UPCOMING EVENTS – Volunteers Needed

Saturday, **February 12, 2022 - Girls Exploring Math and Science (GEMS)** 8:30 AM – 1:15 PM @HMNS – Science Booth

Thursday, **February 17, 2022 – Bellville Engineering Science Technology (BEST) Booster Club Family Science Night** 6:00 PM – 8:00 PM @Bellville Junior High School – Science Booth

Saturday, **February 26, 2022 - Science & Engineering Fair of Houston (SEFH)**  
11:30 AM – 4:30 PM @George R. Brown Convention Center - Judges Needed

If you are interested in volunteering for any event, please contact Lisa Buckner at [outreach@gshtx.org](mailto:outreach@gshtx.org) and we can work together to bring awareness to the students of the wide variety of careers in the geosciences. □

# “IT IS IMPORTANT TO BE PRESENT AT NAPE AND KEEP THE INDUSTRY RELATIONSHIPS VIBRANT AND RELEVANT.”

— SCOTT NOBLE  
CEO and president, Noble Royalties Inc.



## NAPE SUMMIT IS BACK IN PERSON.

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**NAPE SUMMIT**  
2022 FEB 9–11  
Houston  
GRB Convention Center



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**Kristie G. White**

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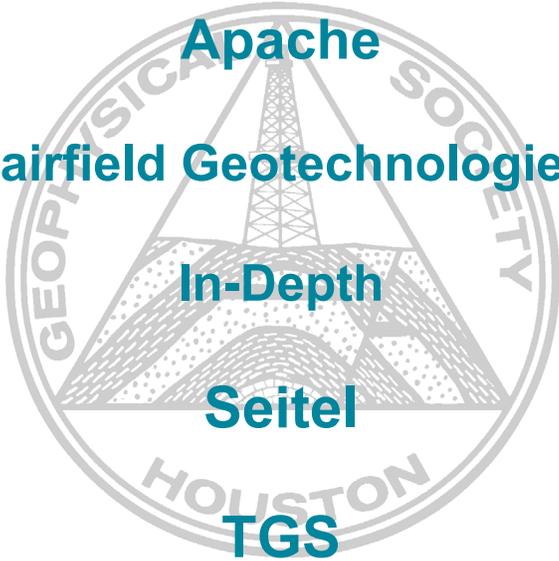
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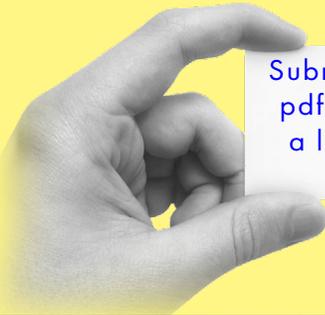
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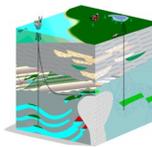
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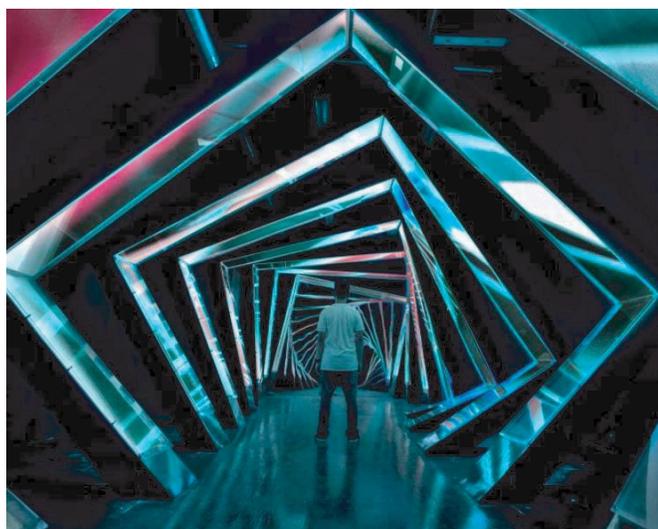
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