

SPWLA Houston Chapter Newsletter

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President's Corner

Dear members of the Houston Chapter,

The SPWLA Houston Chapter continue hosting more in-person events. Recently, we organized a Social Networking Event. The event was a success demonstrating that the Petrophysics community in Houston continues strong and engaging! A significant group of members gathered to enjoy a beautiful evening with drinks and food on March 10th at the Cedar Creek Bar & Grill. Members of all ages, background and experience joined in to socialize and to have fun while talking about technical and non-technical topics related to Petrophysics. Five SPWLA International former Presidents and other international and local board members were in attendance. A huge thanks to **GEOLOG International** for sponsoring this event and to **Neal Cameron** and his team for facilitating this fruitful cooperation!

We also consistently support great initiatives proposed by student chapters. This time, I had the opportunity to serve as a judge for the student paper competition organized by the SPWLA UH Student Chapter! It was a high-level contest, and I have no doubt the University of Houston will be well represented at the SPWLA 63rd Annual Symposium in Stavanger, Norway! Good luck to the contest winners **Andres Villarroel** (M.Sc.) and **Ahmed Kasha** (Ph.D.). Go Coogs! (Hopefully my advisor at UT Austin will not read this 😊). Thanks to Ajibola Samo, SPWLA President UH Chapter and his team for organizing this important event and inviting us.

The Houston Chapter of SPWLA has already scheduled many interesting events and many more are currently being planned. On April 13th, **Scott Cintula** (Quad Operations Inc) will give a talk titled "Pore Pressure and Fracture Gradient Principles and Practical Applications: Rig Size vs Remote." Then, on April 27th we will be hosting a talk on Deep and Ultra-Deep Resistivity Tools for Horizontal Wells Geosteering presented by **ROGII. David Kennedy** (QED Petrophysics LLC) will be giving a talk titled "Generalizing the Geometrical Factor Theory" on May 11th. Additionally, the Houston Chapter of SPWLA is supporting the **SPE Spring 2022 Energy Professional Hiring Event** which will take place on April 26th and the **Charity Golf Tournament**, organized by Geolog, taking place on May 11th. We hope to see you in at least one, if not all our upcoming events.

If you would like to receive notifications of upcoming events and chapter news, please, go ahead and register in the new SPWLA Houston Chapter website. Additionally, there are multiple interesting sponsorship opportunities and job postings announced there. Please, reach out to us in case you are interested or if you would like to receive additional information. As always, we are open for new speakers in our seminars and we are looking forward to bringing other guests in addition to our SPWLA DS, if the topic is of interest to the petrophysics audience. Contact our VPs or myself in case you have a presentation you would like to share.

Please stay tuned and check it out for upcoming news! As always, feel free to contact any of the board members if you have any questions or comments using our contacts included below.

Warm regards,
Javier Miranda



Javier Miranda
Houston Chapter President
president@spwla-houston.org

Useful links

Sign up for the
Houston Chapter
Mailing List
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[Houston Chapter](#)

[SPWLA International](#)

[Join SPWLA – become a member](#)

[Houston Chapter
LinkedIn page](#)

Upcoming Seminars

PORE PRESSURE AND FRACTURE GRADIENT PRINCIPLES AND PRACTICAL APPLICATIONS: RIG SITE VS. REMOTE

Date : Wednesday, April 13, 2022
Time : 11:30 am – 1:00 pm (US CDT)
Location : GEOLOG Americas
10402 Valley Forge Dr. Houston, TX 77042
Parking Info : Complimentary parking garage at Geolog.
Contact : Javier Miranda (SPWLA Houston Chapter President)
Corresponding : president@spwla-houston.org
Admission : This activity will include a boxed lunch with the talk and a tour of the facility after the presentation. The seminar is sponsored by Quad Operations so no charge for registration. However, you still need to register using the applicable links below:

Regular In-Person Admission (All):

<https://www.spwla-houston.org/seminar-detail.php?id=45>

Online registration:

<https://register.gotowebinar.com/register/8023883337711857163>

BIOGRAPHY



Scott W. Cintula (Quad Operations Inc.) brings over 20 years of oilfield geoscience and technology development experience; possessing a Bachelor of Science in Geology and Mathematics from the University of Alaska and a US Navy veteran. He is a consulting subject-matter-expert to Quad Operations for geopressured/geomechanics; with experience gained in offshore regions of Alaska, Black Sea, Mediterranean, Nile Delta, West Coast of Africa, Malaysia, Vietnam, South China Sea, North Sea, Atlantic Canada, and US & Mexico Gulf of Mexico. Scott is also serving as a partner in new venture Qube Tech GPGM developing innovative software, wellsite technology, GPGM interpretation and operations management.

Scott was employed by Petrospec Technologies before joining Quad Operations and Qube Tech, performing Petrospec's realtime PP-FG-WBS services for clients with PP-FG-WBS drilling challenges. Seven years later, after the Petrospec acquisition by Geoservices in 2009, and then by Schlumberger in 2010, Scott served first as Schlumberger's PreVue service line interpretation manager, PreVue's course developer and instructor, becoming an advisor within Schlumberger's Eureka Technical Community. Later, moving on as the global account manager to BP for Schlumberger's GSS business segment.

In 2014, Scott left Schlumberger to start ModelLOG Consulting LLC – a Geopressure/Geomechanics Advisory service, on contract with Quad Operations. In 2015, he started Integrated Surface Petrophysics

Group LLC – an unconventional sector focused wellbore stability service. In 2016, the ISP Group was purchased by Excellence Logging.

ABSTRACT

Realtime PPFG (Pore Pressure/Fracture Gradient) analysis, interpretation and monitoring service is performed during drilling operations. Service can be delivered at the rig site and remotely. Performing real-time (RT) PPFG service can be very impactful on drilling operations; improving drilling performance, reducing non-productive time (NPT) and the potential to avoid health, safety, and environment (HSE) events. Since the arrival of COVID-19, a trend of operators seeking to minimize the spread and chance of having a COVID-19 outbreak onboard drilling rigs, compounded by a longer standing initiative to reduce their overall rig footprint. This trend has not only limited global RT PPFG opportunities but has also restricted the efficacy of this type of service delivery. In the following presentation I will discuss and seek feedback from clients as well as feedback and input from fellow RT PPFG technical analysts who've experienced this challenging trend. Results will be presented quantifying pros and cons of rig site versus remote and success cases. Finally, the overall impact, level of operator's satisfaction, insight into best practices going forward and other lessons learned will be shared.

DEEP AND ULTRA-DEEP RESISTIVITY TOOLS FOR HORIZONTAL WELLS GEOSTEERING – by ROGII

Date : Wednesday, April 27, 2022
Time : 11:30 am – 1:00 pm (US CDT)
Location : Rogii office at 11750 Katy Freeway, Suite 1010, Houston, Texas 77079
(On-site attendance will be limited to 15 attendees)
Contact : Bernd Ruehlicke (SPWLA Houston Chapter Vice-President Westside)
Corresponding : vpwestside@spwla-houston.org

More details coming soon! Stay tuned!

GENERALIZING THE GEOMETRICAL FACTOR THEORY

Date : Wednesday, May 11, 2022
Time : 11:30 am – 1:00 pm (US CDT)
Location : DeGolyer and MacNaughton
5151 San Felipe St, Houston, Texas 77056
Live Oak Conference Room at Sage Plaza Lobby
Contact : Javier Miranda (SPWLA Houston Chapter President)
Corresponding : president@spwla-houston.org
Admission : Regular Admission (\$15),
: Student and In Transition Professionals (\$10)

BIOGRAPHY



David Kennedy began a career in the logging industry in 1973 following earning a B.S. in Physics at Georgia Tech. He entered the industry as a Schlumberger field engineer in California and Alaska, staying with Schlumberger for five years. Following that, Dave returned to school and earned Masters' degrees in Physics and Earth Sciences at the University of Texas at Dallas, with further studies at U. C. Berkeley. In his career, he has worked in one or another capacity at Arco, Sohio Research and operations, Mobil Research and operations, ExxonMobil Research and operations, Baker-Hughes, PathFinder, and Southwestern

Energy. David has been an SPWLA member for 40 years and served as V.P. Publications and Editor of Petrophysics from 1999-2002, V.P. Technology in 2009, and President (etc.) from 2014-2016. David is inventor or co-inventor on six U.S. Patents and has published about 45 articles as author or coauthor in conference proceedings and refereed journals. His major research interest has been formation conductivity interpretation and electromagnetic logging instrumentation. David has been an educator all his life, having taught courses at the USMA at West Point, courses in computer science, physics, materials science, and electrical engineering at San Francisco Bay Area private and junior colleges. He is now recently retired as a professor in the Petroleum Engineering Department at Texas A&M University instructing graduates and undergraduates in formation evaluation. Before all of that, David served as a Lieutenant of Infantry in Vietnam where he received both a Purple Heart and Bronze Star with V device.

ABSTRACT

Archie developed his model based upon trends observed in formation resistivity factor - porosity and resistivity index-water saturation plots. The trends appear when the data is plotted on log-log graph paper. The trends are apparently straight lines on log-log paper, which means that they are "power laws" of the form $F = 1/\phi^m$ and $I = 1/S_w^n$ where m and n are observed to distribute themselves around m and $n = 2$. Archie did not attempt to connect his empirical discovery to any physical first principles, nor did he discuss alternative trends that might have fit the data. However, Archie's model filled a void in formation evaluation, and works well. Four decades would pass before researchers began to attempt to connect conductivity in rocks as described by the Archie model to first principles. Since 1980 several attempts to connect the Archie model to first principles were, and continue to be, made. There has been no generally accepted success in the attempts. Waxman and Smits changed the focus of attention from resistivity to conductivity in 1968. This was a step in the right direction, but they retained Archie's model reformulated in conductivity terms; in that sense there was no change in thinking. The first rethinking of the problem appeared in 1993 by positing three first principles: bulk rock conductivity is proportional to (1) brine conductivity; (2) fractional volume of brine in the rock; (3) a geometrical factor. Brine conductivity and fractional volume of brine (i.e., porosity) are directly measurable, and the geometrical factor can be estimated from measurable quantities. From these "first principles" a model relating bulk rock conductivity to water saturation can be derived. The model, called the geometrical factor theory (GFT), is different from the Archie model, but the Archie model is contained within it as a limiting case. In 2007 a different model based upon a different formulation of the first principles, known as a pseudo-percolation threshold theory (PPTT), was developed. Although different from the GFT, PPTT also contains the Archie model as a limiting case. Since GFT and PPTT are different, it seems as if one of them must be wrong. However, I show that neither is wrong, but both are special cases of a more general model. Whereas Archie analyzed his data in terms of formation resistivity factor versus porosity and deduced a power law, an

alternative analysis in terms of formation conductivity factor would have revealed that Archie's data for both formation factor vs. porosity and resistivity index vs. water saturation is fit, arguably better, by a quadratic function. The quadratic function follows directly from observed first principles, whereas Archie's power law does not. I call the new model the Generalized GFT (GGFT), and show that it subsumes the GFT, PPTT, and Archie's model as special cases. Interestingly, the shaly sand models can also be accommodated in GGFT. As an explanation of the Archie model from first principles has long been a Holy Grail of petrophysics, this is of significant interest.

Check our website for registration to these events!

SPE Spring 2022 Energy Professional Hiring Event

The Houston Chapter of SPWLA proudly supports the SPE Spring 2022 Energy Professional Hiring Event, organized by the SPE-GCS, which will take place on April 26th 2022 at the Radack Community Center (and online). As a result, current professional members of the Houston Chapter of SPWLA are entitled to participate as job seekers. This event provides job seekers with opportunities to meet with potential energy industry hiring companies in upstream oil and gas and renewables. The event also features Discipline-driven Networking Suites hosted by Collaborating Organizations and companies. Each suite engages in industry-related topics and provides job seekers opportunities to network and learn about different segments of the industry.

For more information about the event and participants, visit our website:

<https://www.spwla-houston.org/>



Charity Golf Tournament

The Houston Chapter of SPWLA would like to invite you to join us at the Charity Golf Tournament that is being organized by Geolog and supported by our chapter. This charity event will take place on May 10th at the BlackHorse Golf Club. Proceeds will be donated to Science Programs for School Districts in Houston and Metropolitan Areas. SPWLA Houston Chapter will donate some prizes for door raffles. For

more details, please, check the image below with Neal Cameron's contact or email the president of the Houston Chapter of SPWLA (president@spwla-houston.org).



Recent Events

SPWLA Houston Chapter Social Networking Event

Once again, the Houston Chapter of SPWLA Social Networking Event was a success! The Petrophysics community in Houston continues strong and engaging! A significant group of members gathered to enjoy a beautiful evening with drinks and food on March 10th at the Cedar Creek Bar & Grill. Members of all ages, background and experience joined in to socialize and to have fun while talking about technical and non-technical topics related to Petrophysics. SPWLA International former Presidents and other international and local board members were in attendance in addition to Houston Chapter of SPWLA President. A huge thanks to **GEOLOG International** for sponsoring this event and to **Neal Cameron** and his team for facilitating this fruitful cooperation!

We hope to see y'all there next time!



The Houston Chapter of SPWLA Javier Miranda delivering one of the raffle prizes.



VIP photo session with former SPWLA presidents. Right to left in front line: Zhipeng Liu (2018-19), Jesus Salazar (2019-20), Terry Quinn (2008-09), Matt Bratovich (2010-11). Back line: Elton Frost, Jr. (2013-14).



Petrophysicists, geologists and geophysicists enjoying great weather, food, drinks and, most importantly, each other with face to face interactions.



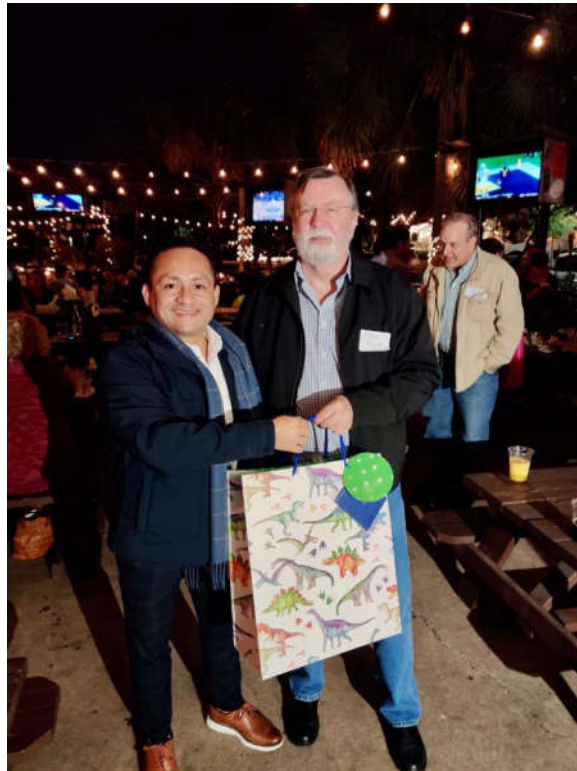
The Houston Chapter of SPWLA Javier Miranda delivering one of the raffle prizes to Jesus Manucci from Expro.



The former SPWLA president Jesus Salazar (2019-20) receiving a raffle prize from the Houston Chapter of SPWLA president Javier Miranda.



VIP photo session with former SPWLA presidents and Houston Chapter of SPWLA president Javier Miranda. Right to left in front line: Zhipeng Liu (2018-19), Jesus Salazar (2019-20), Terry Quinn (2008-09), Matt Bratovich (2010-11) and Javier Miranda. Back line: Elton Frost, Jr. (2013-14).



The Houston Chapter of SPWLA Javier Miranda delivering one of the raffle prizes to Elton Frost Jr. SPWLA International President 2013-2014.



Our sponsor Geolog North America Sales Manager Neal Cameron (left) with the Houston Chapter of SPWLA president Javier Miranda.



The Geolog North America Sales Manager Neal Cameron delivering one of the raffle prizes. The charcuterie board raffle prizes were a hit that all winners enjoyed!



VIP photo session with former SPWLA presidents and board members supporting Geolog, the sponsor of this SPWLA Houston Chapter Social Networking Event.



The Houston Chapter of SPWLA Javier Miranda delivering one of the raffle prizes. CNC Houston Creations (cnchoustoncreations@gmail.com) kindly supported the engraving of charcuterie board prizes.



Lively discussions about technical and non-technical topics related to petrophysics.



Another successful SPWLA Houston Chapter Social Networking Event due to strong participation of the Houston Metro Area petrophysics community.



Another successful SPWLA Houston Chapter Social Networking Event due to strong participation of the Houston Metro Area petrophysics community.



Face to face interactions about technical and non-technical topics related to petrophysics.



SPWLA members enjoyed in-person interactions after a long time not seeing each other.



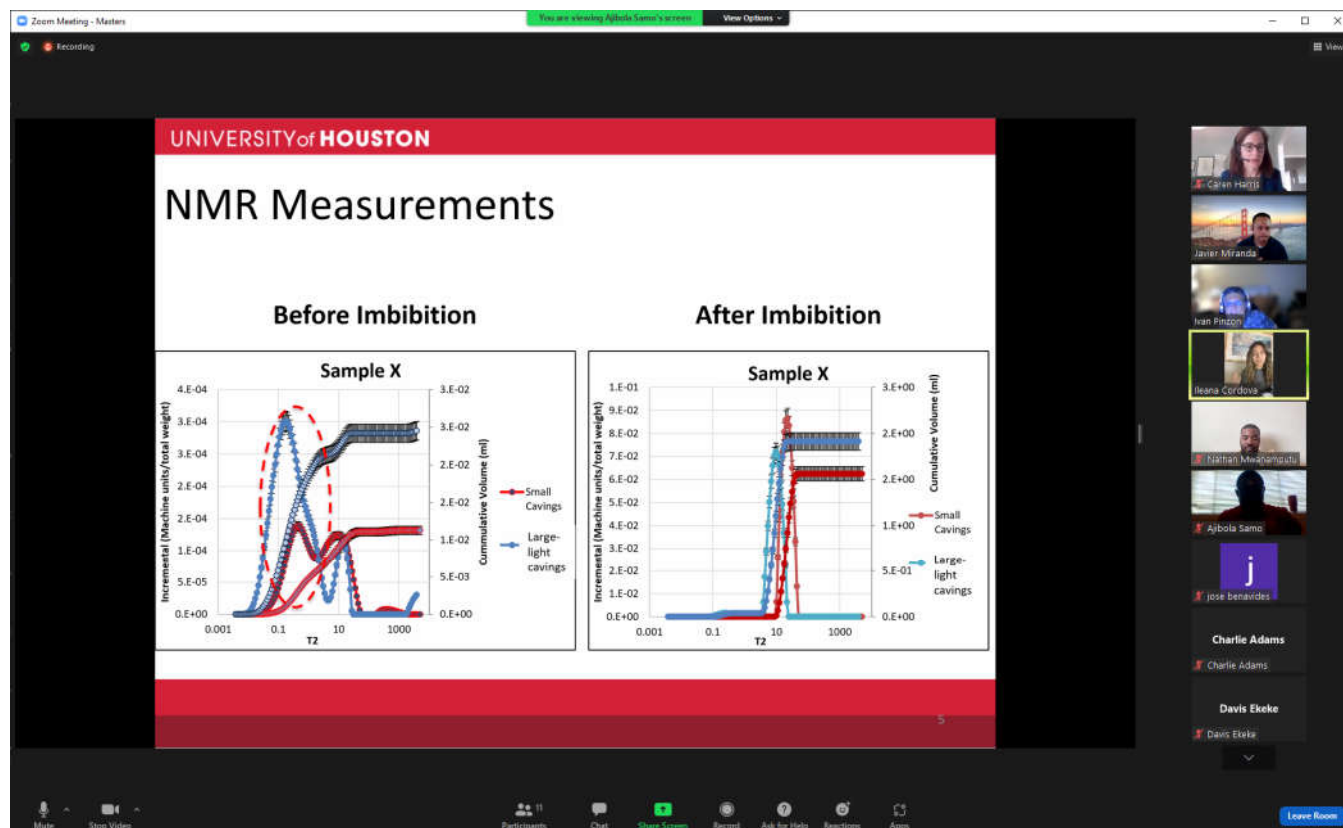
The charcuterie board raffle prizes were a hit! Here, Houston Chapter of SPWLA President Javier Miranda and VP Bernd Ruehlicke presenting the gifts.



The former SPWLA President Jesus Salazar (2019-20) and the Houston Chapter of SPWLA President Javier Miranda enjoying a craft beer.

Supporting Student Chapters of SPWLA

The Houston Chapter consistently supports (financially and otherwise) great initiatives proposed by student chapters. This time, the Houston Chapter of SPWLA President Javier Miranda served as a judge for the student paper competition organized by the SPWLA UH Student Chapter! It was a high-level contest, and the University of Houston will be well represented at the SPWLA 63rd Annual Symposium in Stavanger, Norway! Good luck to the contest winners Andres Villarroel (M.Sc.) and Ahmed Kasha (Ph.D.). **Go Coogs!** Thanks to Ajibola Samo, SPWLA President UH Chapter and his team for organizing this important event and inviting us.



One of the presentations during the online Student Paper Competition organized by SPWLA UH Student Chapter.