SPWLA TODAY

NEWSLETTER

SPWLA Today App

Now available for Android Devices on the Google Play Store

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SOCIETY OF PETROPHYSICISTS AND WELL LOG ANALYSTS

INSIDE THIS EDITION

Note: Articles published in SPWLA Today are not subject to formal peer review but are subject to editorial review and are verified for technical consistency and relevance.

Calendar of Events

September 23, 2020

Petrophysical Multimineral Analysis

Instructor: Patricia E. Rodrigues, PhD., SeisPetro Geoconsulting

May 15–19, 2021

SPWLA 62nd Annual Symposium in Boston, MA

Call for Abstracts is open

Postponed Until Spring 2021

SPWLA Acoustic SIG Fall Workshop

Theme: "Borehole Acoustics Workshop: The Road Ahead"

YP-BRIDGE EDITORS

About the Cover

SPWLA proudly announces the debut of our new Android App. Stay connected on the go with SPWLA events, chapter, SIG, and Bridge news, watch videos, use petrophysics calculators, search through a glossary of terms, take quizzes, and more. Search for "SPWLA" in the Google Play Store or click this link below to download.
https://play.google.com/store/apps/details?id=com.spwla.spwla

As you may have noticed, we are using a new format for this edition of SPWLA Today. Instead of sending articles to be typeset by a third party in Adobe InDesign, we are using Microsoft Word for this issue. This not only saves significant time and expense for SPWLA but also offers a more collaborative framework to streamline the editing process as everyone is familiar with Word. Adobe InDesign has some advanced editing features that are lacking in Word however the benefits of a collaborative software are overwhelming.

Should SPWLA develop an App for Android devices (e.g. Google Pixel, Samsung phones) as well?
102 responses

- Yes
- No

26.5%

73.5%
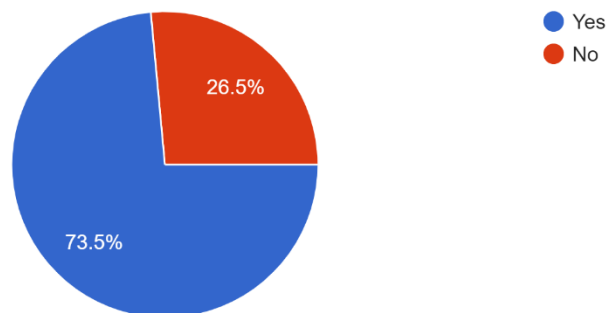
Back in June, SPWLA introduced the new iOS app and shortly after, sent out a feedback survey via email. We received 102 responses. Numerous folks responded by survey and on LinkedIn requesting an Android app (73.5%). So, I followed up on our member feedback, learned another new skillset, and developer the SPWLA Today Android App – it's available on the Google Play Store and offers the same functionality as the iOS app. One of the comments indicated that they would like to download papers from the mobile App – this has been added as well. Members can login in their respective SPWLA accounts and download papers via the mobile App. Survey responses were somewhat mixed regarding the App because it's relatively new and not enough folks have seen or used it. Additionally, some of the responses indicated that they don't like using apps in general. Even with the availability of the App, our members still overwhelmingly (84%) prefer SPWLA Today bi-monthly newsletter by email although statistics from constant contact indicate fewer than 25% click the newsletter email.

Do you prefer the SPWLA Today bi-monthly newsletter by email or via the mobile app?

102 responses

- Newsletter pdf by email
- SPWLA Today mobile app

15.7%

84.3%
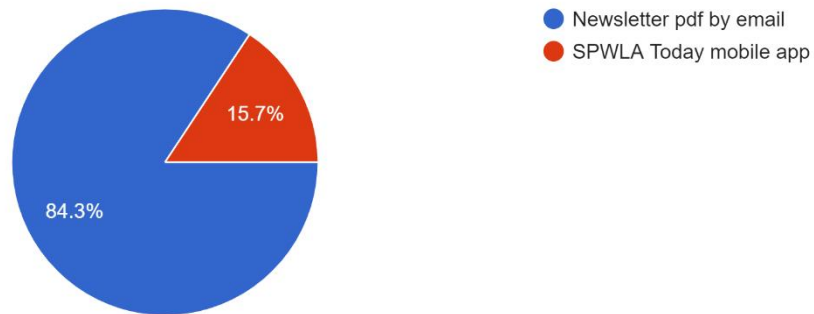
The survey was designed to deliver a quantitative indication of the relative value and importance given to SPWLA publications as part of the benefits of SPWLA membership. Because of the various other benefits stemming from SPWLA membership, rather than obtaining an absolute result it was decided to compare the value of publications against the Annual SPWLA Symposium, Technical Webinars, Talks by Distinguished Technical Speakers, SPWLA-organized Technical Workshops, SPWLA organized Training Courses, Regional Chapter meetings and workshops, Special Interest Groups (SIGs) meetings and events, and SPWLA App. Accordingly, the survey requested a satisfaction rating from 1 to 5, with 5 indicating the highest satisfaction and 1 the lowest. Overall, our members were highly satisfied with SPWLA membership and most responses were in 4 and 5 stars.

On a scale from 1 to 5, indicate your current satisfaction and value as SPWLA membership deliverable with 5 being highest and 1 being lowest.

102 responses
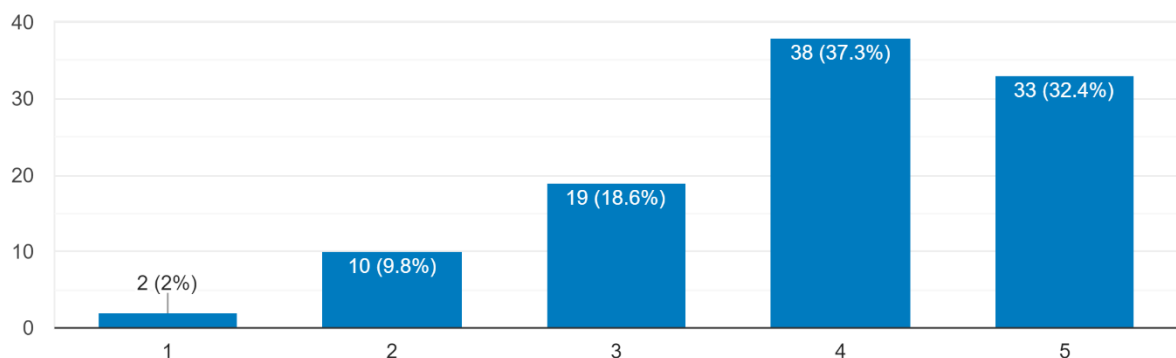
Understandably, the Annual Symposium scored lower with the new online GotoMeeting format (due to Covid-19) and folks missed the in-person gathering and knowledge sharing event.

Assign from 1 to 5 your personal relative value to the following SPWLA membership deliverables :
Annual Symposium

102 responses
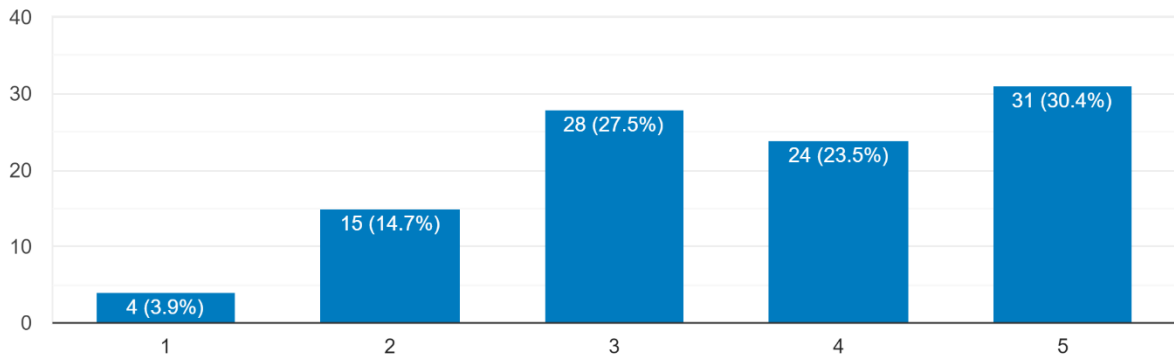
Our flagship publication, Petrophysics Journal scored extremely well as folks like all the effort that goes into coming up with a quality peer reviewed product.

Assign from 1 to 5 your personal relative value to the following SPWLA membership deliverables :
Petrophysics Journal

102 responses
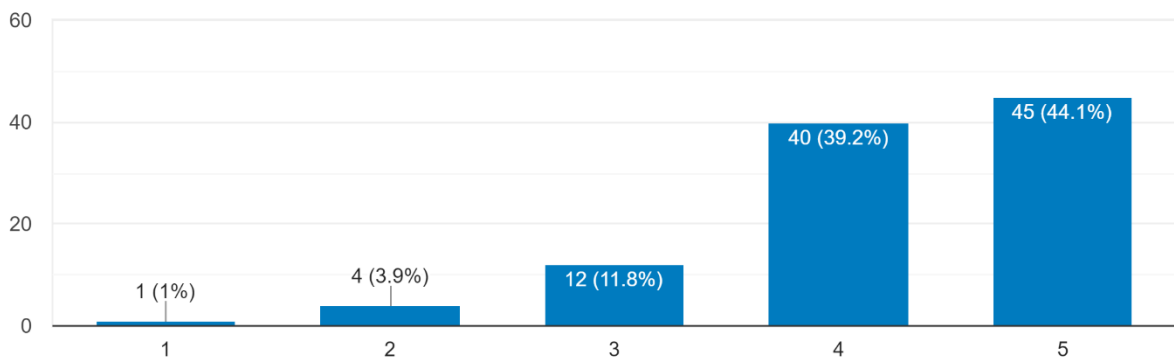
SPWLA Today Newsletter and Technical Webinars also scored well. There is room for improvement with the SPWLA organized trainings and Chapter/SIG events.

Assign from 1 to 5 your personal relative value to the following SPWLA membership deliverables :
SPWLA Today Newsletter
102 responses
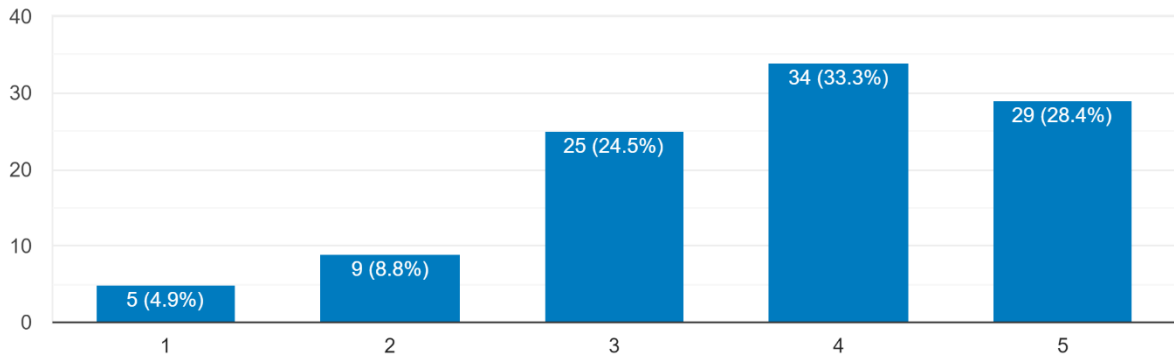
Assign from 1 to 5 your personal relative value to the following SPWLA membership deliverables :
Technical Webinars
102 responses
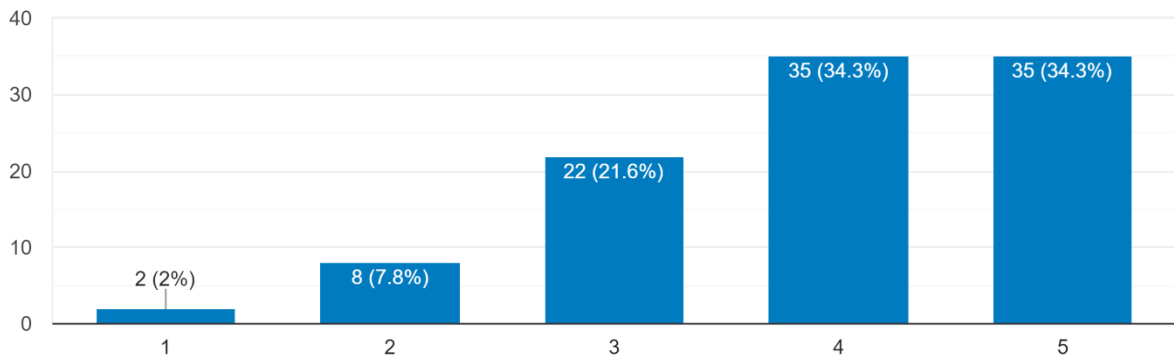
Assign from 1 to 5 your personal relative value to the following SPWLA membership deliverables :
Talks by Distinguished Speakers
102 responses
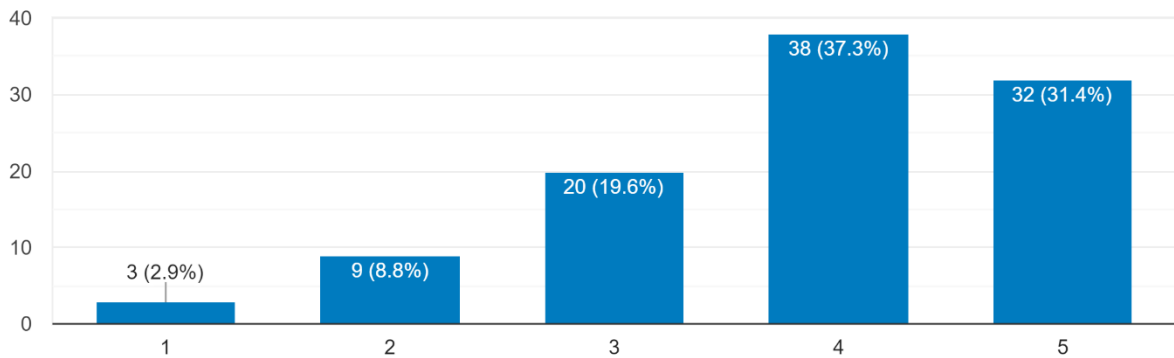
Assign from 1 to 5 your personal relative value to the following SPWLA membership deliverables :
SPWLA Organized Trainings

102 responses
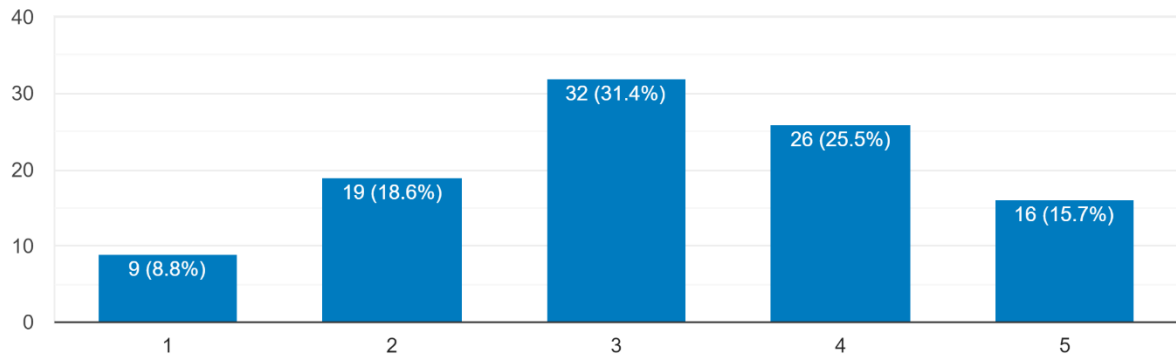
Assign from 1 to 5 your personal relative value to the following SPWLA membership deliverables :
SPWLA Today App

103 responses
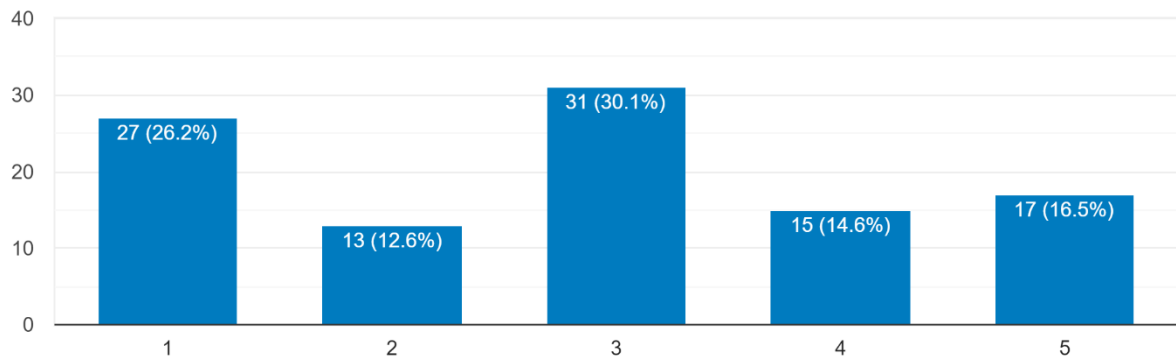
Assign from 1 to 5 your personal relative value to the following SPWLA membership deliverables :
Chapter Events

102 responses
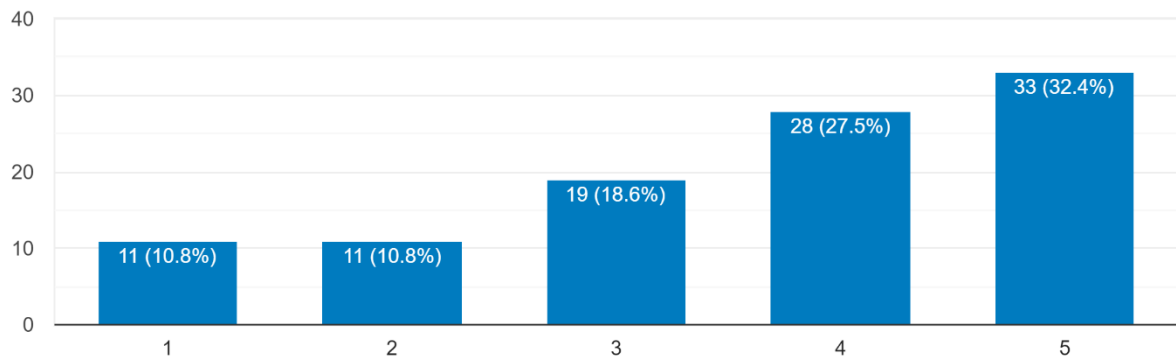
Assign from 1 to 5 your personal relative value to the following SPWLA membership deliverables :
SIG Events

102 responses
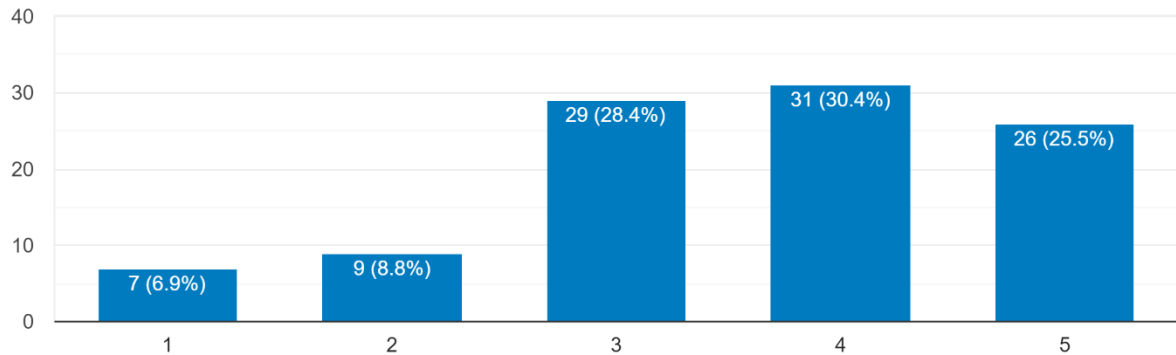
Select additional comments on the survey from our members:

- *Couldn't download papers from app. It would be nice to have a login in the main menu and in that way the app will know I am a member. Thanks, wonderful app.*
- *I work digitally. All the time. So sorry to say, last thing I want to do in my spare time is read journals or newsletters online at a computer or e-device. So, sorry to say, I don't read as much SPWLA stuff as I previously did.*
- *I have not been a partaker of these services and initiatives, how could we be more involved as students. I think the android app development is a solution for people like me. SPWLA is good with well meaning programs but reminders are poor as one would like to develop professionally and also excel academically.*
- *make an android app so I can use it. I had to put 1 on everything app related because it is IOS only.*
- *Improve Petrophysics and SPWLA Today, improve gender and race diversity in committees, teams, board, etc.*
- *Sorry, I do not use Apps. So my preferred communication is email.*
- *Some of my answers (the not satisfied ones) are due to the fact that I do not have an iPhone, I am one of only a few in New Zealand and cannot usually get to events, and the nearest Chapter is in Australia (travel issue). I am sure you do a great job for those with Chapters and larger memberships. This is not a criticism just an explanation.*
- *Great job!*
- *some values are unanswerable re covid 19, and I'm using android.*
- *Tough to be satisfied with Chapter events when there is no Chapter in Anchorage.*
- *disappointed that Symposium webinars are not recorded and made available for limited time afterwards to attendees. No-one wants to get up at 2am for a Conference*
- *I don't use the app (in fact try to avoid apps in general) hence my low rating. In general, I would say the SPWLA is still too University-centric - I do appreciate the efforts that have been made to increase the international flavour however. I would also say that the*

symposium and to an extent the journal tend to be too academic. I would halve the number of papers at the symposium, double the time allocated to each one and strongly encourage posters as the main medium for presentation.

- *Well done.*
- *I do not use Apple products, very few people do in Australia, so all the questions about the Apple App are "Not applicable".*
- *I didn't know that here was a newsletter app in the Apple Store.*
- *SPWLA is the best professional organization out there...period.*
- *I prefer everything going through e-mail as primary, with other methods as options.*
- *Don't feel that I got my $$$'s worth for my dues this year.....*
- *The SPWLA gets papers from PhD students on their research but that has little application to the Petrophysics work I do. Would like to see more practical papers coupled with take-aways that I can program and use with excel rather than esoteric programs. Otherwise, the research is 10-20 years from commerciality if it happens at all.*
- *I do not use SPWLA Apps yet no option to indicate that in the survey. So chose low score. Survey should ask if we need the SPWLA functions indicated.*
- *Not having an Apple machine of any type, the current SPWLA app is useless to me. Would I use it if it were an Android app? Not for SPWLA Today; I am old-fashioned and like a document I can download onto my computer and read at any time. But I do like the idea of, and probably would use, basic log calculators and informational petrophysical principles available on an Android version of Mayank's app.*
- *I am somewhat resistant to adding another app to my phone, but then again I am nearing the end of my career and my reluctance should not be construed in any way as resisting progress. I think that the society should continue to explore new ways to transmit information to the membership. I would very much like to see "well-organized" on-line tutorials that correspond to several recent notes published in the journal, essentially condensed and specifically tailored versions of many of the short courses that accompany the annual meeting.*
- *Holding the Annual Technical Conference in Boston in 2021 is a travesty. It is time for SPWLA to merge with SPE or AAPG.*
- *There seems to be some areas of improvement between chapters and main board with regards to connection, communication and consistency.*
- *SPWLA membership and current membership benefits does satisfy my needs.*
- *For the spwla today from pdf or app you should have included a third option, both. I don't think one should eliminate the other*
- *Chapters in South Louisiana are disappearing... Attending SPE, AADE, etc. events instead of many SPWLA events.*

From the President

Hopefully, everyone enjoyed the symposium. We had over 350 people dialing in for this historic event. I think everyone will agree that we missed out on a lot by not being able to interact with each other, discussing all those side topics and projects that we are not ready to publish yet. But, at least, we were able to interact as much as possible in these trying times. With a little luck, we can all meet up next year in Boston.

Again, I would like to thank Michael O'Keefe for his hard work in organizing an outstanding technical program. Also, thanks again to Katerina and Lin for all their hard work and technical expertise putting the online sessions together. They had all the work of a normal symposium, plus all the additional work of getting everything working in an online format.

This has been a rather depressing month seeing emails from so many old friends who have lost their jobs. Many people are only working part time, and I must say that I feel proud of the companies who are trying to hang onto as many people as possible. Unless we get hit with another surprise, it would appear that things will unfortunately remain at this level for some time. One thing we have all learned is that change is inevitable and most certainly unpredictable. With that in mind, we need to look forward to better times and not simply a continuation of the good economic times of several years ago.

Let's look forward to Boston next year and hope for some normalcy in 2021.

Best Regards,
James Hemingway
SPWLA President 2020–2021
(+33) 6 25 16 57 19
President@spwla.org

Dear SPWLA members,

I am still very excited about the outcome of what I think was the best online symposium in 2020! 😊

We used our own resources (i.e., Stephanie, Sharon, Lin, and me), and under Michael O'Keefe's guidance, we delivered a very high-quality online conference. Obviously, we would have loved to welcome you all to Banff, but we did the best we could possibly do with the current pandemic and economic situation.

I would like to thank everyone who was able to attend and help make this event a great success!

We continue to offer our webinar platform to our chapters so they can keep our members informed and connected. I like to see our chapters being active that way and encourage you to take advantage of that. Especially in these times of change, knowledge sharing should be the true constant.

My job is to reach out to sister societies and see how we can all collaborate for the greater good of our industry and our members. Trying times call for change, and we want to offer as much variety as we can to our members for cross-discipline knowledge sharing. I think this will benefit us all.
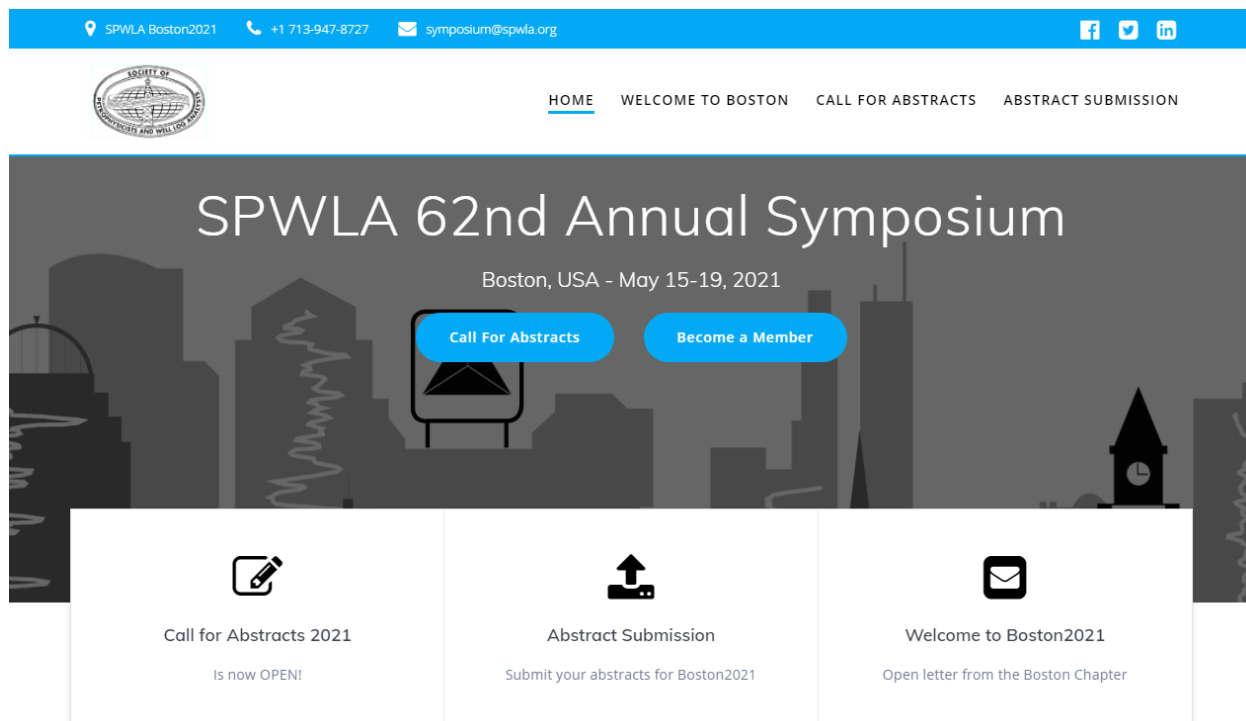
I hope you all stay safe and keep on logging!

Katerina Yared
SPWLA President-Elect 2020–2021
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President-Elect@spwla.org

Tech Today

Hello and welcome to my second column for the SPWLA Today newsletter. By now, the last of the six days of the SPWLA 61st Online Symposium is behind us, and I'd like to reiterate what a successful and groundbreaking event it was. Congratulations to Michael O'Keefe, Katerina Yared, Lin Liang, Jesus Salazar, and the SPWLA Business Office for putting together such a professional event. However, we now turn our attention to the planned SPWLA 62nd Logging Symposium to be held in Boston, Massachusetts, USA, in May 2021.

Before the elections this year, my wife, Julie, and I had volunteered our services to the Boston Chapter for managing the Symposium website. I am happy to say that SPWLA2021.com is now up and running. It's really a domain name redirection to SPWLAWorld.org, which has been our Abstract Submission website for the last six years. Currently, we have uploaded a welcome letter from the Symposium Chairperson, Paul Craddock, and information on Abstract Submissions, but please check back frequently as more content will become available as time progresses.

Invites to the 2021 Technology Committee have been sent, and now the task of balancing company limits, competencies, and other various constraints begins as we build a well-rounded committee. We still have a few places available on the Committee, so please email me at vp-technology@spwla.org if you are interested in joining or nominating someone.

As I'm sure you are aware, Abstract Submissions for Boston 2021 was opened at the start of August. The closing date is Sunday, October 25, 2020, so that gives you plenty of time to envision, research, and write an abstract. The categories are the same as last year and cover all areas of petrophysics and formation evaluation. In conversations with a few of my fellow BOD members, the consensus is that we would like to see more papers that have practical applications— essentially, papers that our membership can put into practice as soon as they return to work. Please consider this when you come to submit an abstract. Of course, we still welcome strong theoretical papers, too.

I think it is also important to remind authors that the abstract submitted must be very similar, if not identical, to the one accompanying the paper submission. In the past, this check has been performed by members of the Technology Committee, and we will rely upon their vigilance again this year. However, we are also developing a Natural Language Processing tool that can compare texts to see if they are similar or not. This will be applied automatically to all abstracts and submitted papers, and any failing this check will be removed from the Symposium and proceedings.

We received our first abstract for Boston the day after we opened. Thank you! Please keep them coming, although we normally anticipate an avalanche of submissions the weekend prior to the closing date. I was hoping to have included an article in this edition of SPWLA Today on how to submit an abstract, but the day job got in the way. Instead, I will add instructions to SPWLA2021.com. In the past, abstracts had to be in plain text, but now we support HTML, equations, images, and the ability to edit already submitted abstracts.

I have been involved in the Abstract Submission process for a decade, and each year I have tried to make the workflow experience easier and more effective. The latest incarnation of software

has been in place for two years and will be used again for next year's conference. We have already made some changes to the user experience, including adding an option to attach keywords to every submission, which will assist in matching abstracts with the appropriate Technical Committee members for review, and more will be added in the coming months. I'm also interested in performing more of the abstract review process online; more details will follow in a future article. We are always looking for feedback on the Abstract Submission process, so please feel free to contact me at the email address below if you have any suggestions.

Finally, here is a picture of me taken during Abstract Review from the most recent Symposium. The review and ranking process can be an intense few days, but it is also very satisfying. Spending the time to read each abstract at least twice pays dividends when the final selection of abstracts is made.
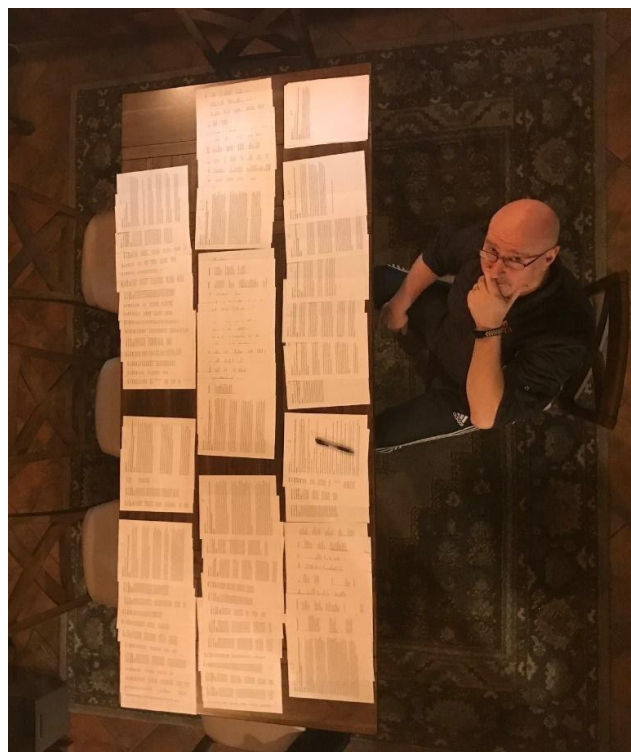
Just for the record, I didn't just throw them off the balcony and then rank them based on "closest to the table" order as a colleague once suggested!

Cofion caredig ac aros yn iach,
(Kind regards and stay healthy)
Tegwyn Perkins
Vice President Technology
VP-Technology@spwla.org

Call for Abstracts: SPWLA 62nd Annual Logging Symposium

The SPWLA Board of Directors invites you to join us in Boston, May 15–19, 2021 to showcase your case studies, new technologies, and innovations at the SPWLA 62nd Annual Logging Symposium. We are soliciting papers in the following categories:

• New Borehole Logging Technology

• Advances in Machine Learning

• Deep Water Reservoir Analysis

• Petrophysics in Brownfields

• Case Studies

• Formation Evaluation Behind Casing

• Completion Petrophysics and Reservoir Surveillance

• Formation Evaluation of Conventional Reservoirs

• Formation Evaluation of Unconventional Reservoirs

SPWLA and Boston Chapter welcome you to

SPWLA 2021

62nd Annual Symposium

MAY 15-19 2021, BOSTON, MA, USA

The information contained in your abstract is the basis for the acceptance of your paper into the technical program. Your abstract should contain 200–500 words. Do not feel obligated to use the full allocated length. Our members look for papers containing strong technical and innovative content. We ask you to refrain from commercialism and focus on the promotion of petrophysics and formation evaluation. Your submitted abstract needs to be the same as the abstract published in your paper. Before submitting, you must agree to meet all deadlines defined on the abstract submission page. All abstracts and final manuscripts must be in English.

Abstracts must be submitted no later than Sunday, 25th October 2020 via online submission at https://www.spwlaworld.org/abstract-submission/

Notification of acceptance will be made in December 2020. If selected, your abstract will be published online on the Symposium's website in February 2021. You will then be required to submit a draft manuscript for the Symposium transactions by Monday, 15th March 2021 and your final manuscript by Monday, 5th April 2021. Any paper not submitted in finalized format by then shall be removed. After submitting, you shall work with two members of the Technical Committee for a review of the manuscript to ensure clarity and to avoid commercialism. For questions, please contact Stephanie Turner at SPWLA either by phone (+1) 713-947-8727 or email stephanie@spwla.org.

We look forward to reviewing your abstracts!

Best regards,
Tegwyn J. Perkins
Vice-President Technology 2020–21

Hello SPWLA community members,

Although enduring an unprecedented pandemic and missing our usual annual reunion of friends and colleagues, we successfully held a virtual Symposium, which is also a historic event. Thanks to our ex-VP of Technology, Michael O'Keefe, for his excellent vision and leadership, as well as the support from all board members, committees, and session chairs. We have done quite a successful job. Also, thanks to all the authors and presenters for their tremendous efforts in making videos to ensure the quality of the event. This helped avoid potential risks caused by unstable internet connections. Special thanks to all the participants. Your enthusiasm, patience, and resilience were the keys to a successful event. A few audience members and even some session chairs encountered an audio issue from the platform we used, but it was largely a smooth process. In total, we had over 350 registrants for the Symposium. The attendance of six sessions varied due to different time zone settings, which is summarized in the figure below.
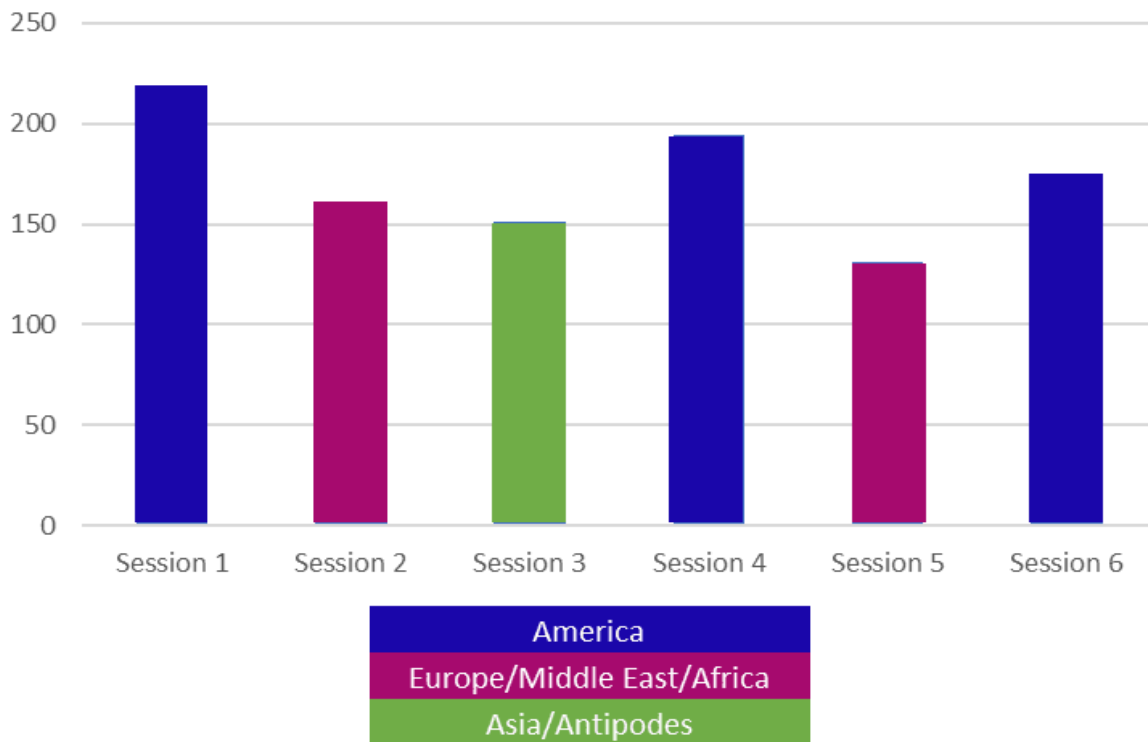
The 62nd Annual SPWLA Symposium will be held in Boston on May 15–19, 2021, hosted by the Boston Chapter of SPWLA. We sincerely invite you to join us there for this time-honored event in the wonderful city of Boston, Massachusetts. The current plan is for a return to "business as usual," hosting the Symposium in person. Please visit the website https://www.spwlaworld.org for the latest update.

Again, I would like to take the opportunity to further promote the new initiative of the SPWLA open-source community. For those who are energetic, especially for young people in school, I want to encourage you to join the community and contribute. Of course, this is only for educational purposes, not to compete with companies. The community is hosted on GitHub. Free and open resources are constantly collected and stored there. For SPWLA Chapters and SIGs, you are welcome to use this platform to organize contests. The SPWLA open-source repository is located at https://github.com/SPWLA-ORG. Please comply with all rules for using the platform. If you are interested in starting an open-source project under the SPWLA organization, please send your request to VP-InfoTech@spwla.org

Best wishes to everyone and stay safe!
Lin Liang
Vice President Information Technology
(+1) 617-335-4469
VP-InfoTech@spwla.org

Learning Opportunities

Dear SPWLA members,

We just had a great 2020 SPWLA Annual Symposium, the first online symposium in the oil and gas industry. Once again, congratulations to Michael O'Keefe, Lin Liang, Katerina Yared, and all the Committees who made everything possible. High appreciation is also given to all moderators and panelists. Thank you for all your great effort.

What next?

Distinguished Speakers (DS) and Global Distinguished Speakers (GDS, previously known as the Regional Distinguished Speakers) List, Monthly Webinars, SIGs Webinars, Short-Course Classes, The More You Know (TMYK) Series, and Nuggets of Wisdom (NoW) are lined up.

Our Monthly Webinars will be kicking off soon. Hopefully, the list of Distinguished Speakers and Global Distinguished Speakers will be ready before mid-September 2020. For all Distinguished Speakers, thank you so much for your enthusiasm and dedication to sharing your knowledge and experience with all SPWLA members. To all Chapter Officers, please invite the speakers to your monthly meetings as they are very happy to share their findings with your local chapter. Don't forget, if you need a webinar platform to conduct your meeting, we are here to serve you. Please email vp-education@spwla.org with the information below, preferably one month prior to the event, to set up and publicize it on our social media platform.

1. **Event Title**

2. **Event Date/Time (time zone)**

3. **Moderator's (Host and Co-host) Name and Email**

4. **Panelist's Name/Email/Abstract/Photo**

We will have a short-course class on Petrophysical Multimineral Analysis by Patricia E. Rodrigues, PhD, on September 23, 2020, from 8 am to 12 pm CST. This course will explain the

basic concepts, assumptions, calibration, and implementation steps needed to obtain reliable results. Due to very high interest, the class is already fully booked. Thank you to all participants.

Petrophysical Multimineral Analysis

THIS CLASS IS FULL - NO ADDITIONAL REGISTRATIONS AT THIS TIME - WE WILL REVISIT OFFERING THE CLASS IN THE NEAR FUTURE.

Instructor: Patricia E. Rodrigues, PhD., SeisPetro Geoconsulting

Course description

Deterministic petrophysical workflows have been successfully applied for decades for the petrophysical characterization of hydrocarbons reservoirs. The application of these workflows to areas of complex lithologies in conventional or unconventional reservoirs has been challenging because traditional models and concepts are not always valid or applicable. Multimineral analysis offers an alternative to conventional petrophysical modeling in areas of complex lithologies. READ MORE

The More You Know (TMYK) series is now accessible from our website. Please stay tuned as the second one will be coming soon. Nuggets of Wisdom will be available early next year.

To all Student Chapters, let's meet up. Please email me with any ideas and anything I can help you with.

Thank you to Haryanto Adiguna, Tianmin Jiang, and Mathilde Luycx for joining the VP of Education Team. I look forward to working with you. Please let me know if you have an interest in joining our Social Media Team.

Lastly, please continue to send me ideas and feedback for improvements. Thank you, and I am looking forward to serving you.

Kind regards,
Siska Goenawan
(+1) 346-401-8201
VP-Education@spwla.org

Follow us on social media:
@SPWLA SocialMedia (Linkedin)
@Society of Petrophysicists and Well Log Analysts (Facebook)
@spwlaorg (Twitter)

The SPWLA finances are stable, though some of our reserves will be consumed with the loss of the physical Banff Symposium. It was good to see this year's online Symposium participation from both the technical content and exchange, along with the registration income from the participants. In looking at the income pie chart below, we can see the various sources of income with their percentages for the 2019–2020 financial year. The chart illustrates the main sources of income are from Symposium Profit, Membership Fees, OnePetro Royalties, and Petrophysics Ad and Editorial Fees representing 88% of the total. The 2019 Woodlands Symposium was very successful, thus having a strong financial impact.

SPWLA 2019–2020 Finance Income

Pie chart legend:
- Other (misc sponsorship, contributions, CD sales, etc.) 6%
- Petrophysics advertisement and editorial fees 6%
- Interest on Investments 4%
- Membership Fees 32%
- Training Center & Spring Conference Income 2%
- Royalty Revenue OnePetro 10%
- Symposium Profit (Woodlands) 40%
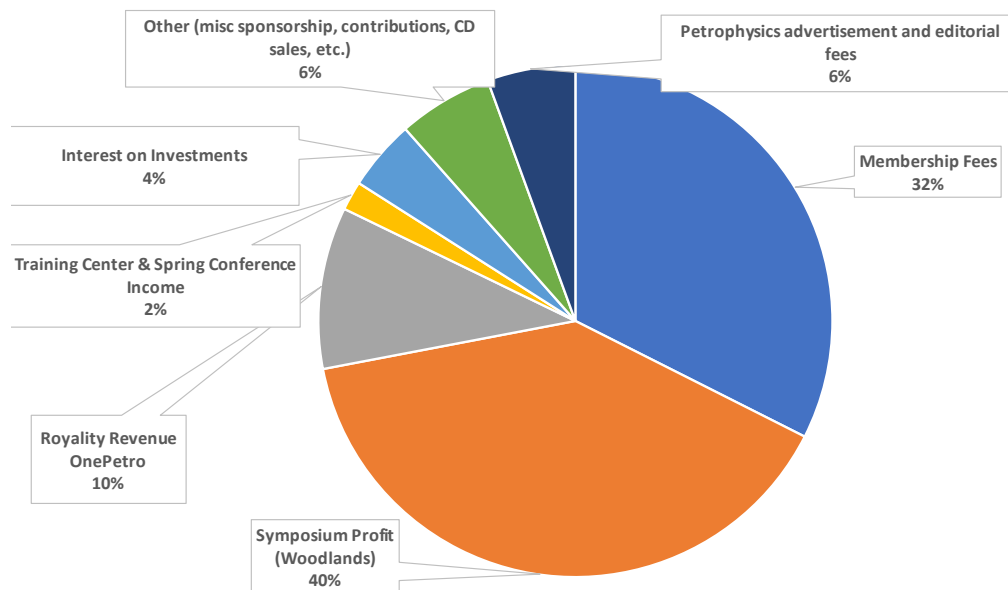
The breakdown for the larger expense items is shown in the chart. The expenses associated with the Annual Symposiums, both Woodlands and Banff cancellation expenses, are excluded as they are captured in the previous income chart. This chart shows the society commitment to its

membership through the Journal, Newsletter, Distinguished Speaker program, and Student Chapter Support.

SPWLA 2019–2020 Finance Expenses
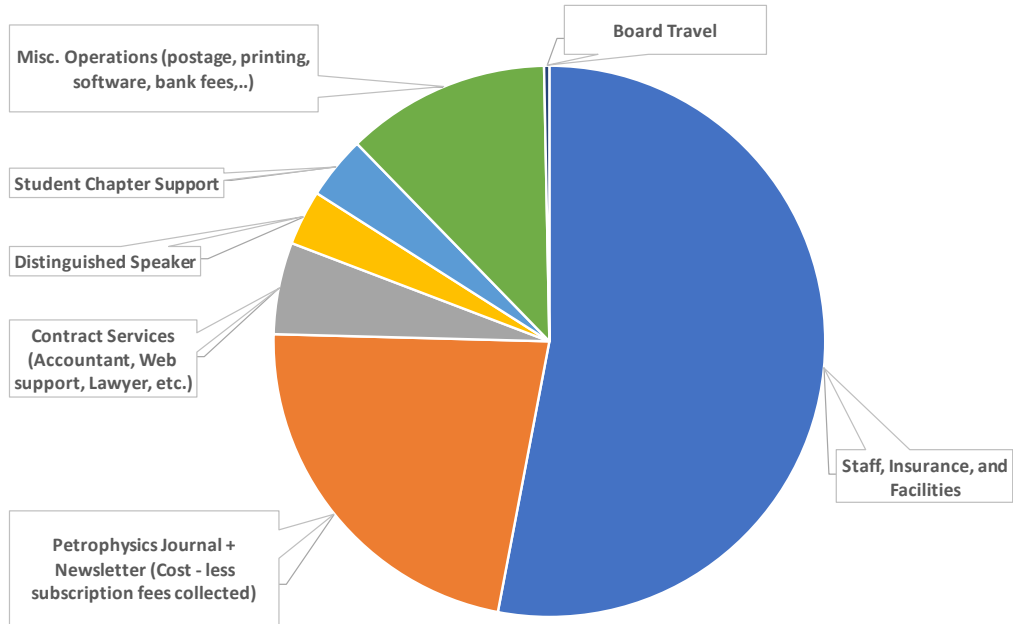
The total membership has shown roughly a 20% YOY decrease dipping down to 1964. The pie chart below shows the breakdown of the various membership categories.

SPWLA 2019–2020 Membership Overview
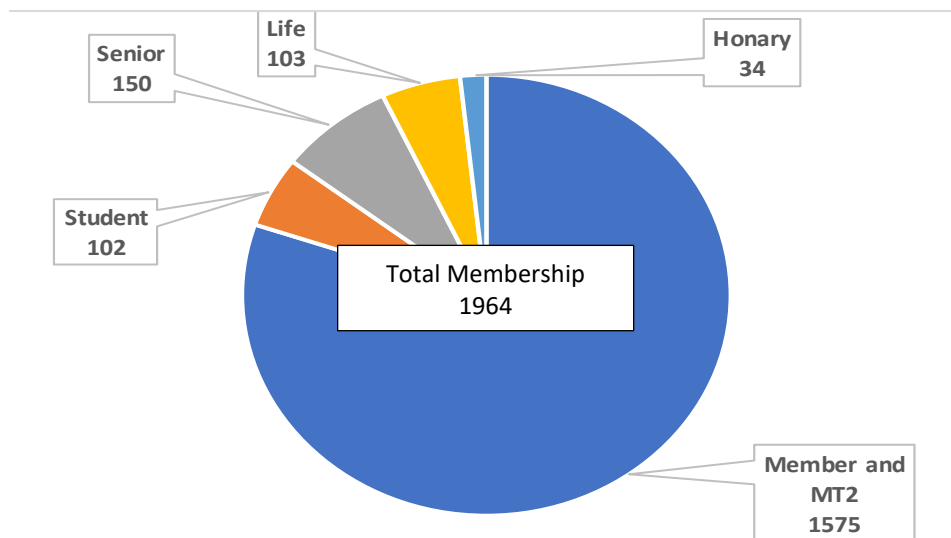
The SPWLA has been impacted by the current challenging environment like everything else in our industry. The society is financially sound, remaining committed to its membership. The Board strives to increase its membership and the services to its membership while keeping a mindful eye on expenses. Know I am echoing everyone's thoughts for the ability to host a physical 2021 Boston Symposium. The SPWLA has seen and endured through many industry fluctuations over its history, and it is important to remember, "this too will pass." Wishing everyone to stay safe and have good health for you, your family, and friends. Look forward to seeing you at the Boston 2021 Symposium.

Best Regards,
Doug Patterson
Vice President
Finance, Secretary & Administration
VP-Finance@spwla.org

Dear SPWLA members,

The last couple of weeks have been an opportunity and a privilege for me to connect with the leaders of various chapters in North America. Kelly Skuce and I have divided up the territory, and we are setting about gathering information and seeing how we can support the chapters as they face new challenges. It has been very encouraging. Most importantly, the people I have spoken to are staying safe and healthy. There have been tough changes for some, but there is a clear desire to get started with chapter activities as people return to campuses, their working-from-home setups, or in some cases, actual offices!

The Houston Chapter managed to snatch a last social gathering at the end of February just before things started getting complicated. After a typically quiet summer season, punctuated by the excellent online conference, the chapter leadership is preparing to restart with webinars in the fall. Elections have been delayed, but Javier Miranda, who I spoke to, is focused on kicking off online events in September.

In Dallas, Chapter President Steve Brackeen mentioned they have also suspended in-person meetings, and the team will be meeting in the coming weeks to figure out a program of activities. They will brainstorm around what can be done to recover the networking element that is so valuable to the SPWLA. We discussed some successes I have seen with alumni events held on Zoom. The ability to bring everyone together initially for introductions and then divide into breakout rooms around particular themes provides a good compromise for an online social experience.

From the student chapters, I can see the different universities are facing some very tough decisions and responding in a variety of ways. Ahmed el Shazly at Texas Tech explained how they will be coming back to a mixture of face-to-face and online teaching. He revealed to me the intensity of online teaching to 50 undergraduates. It appears that although many are concerned

about the downsides of going online, many faculty members are going above and beyond to protect the learning experience, providing unique new levels of access for students and demonstrating incredible commitment and dedication. The team is planning an event in September for freshman and will then be kicking off seminars in November. They would love to hear from any potential speakers.

Fresh from success in the Student Presentation Contest, Cristina Ruse at the University of Louisiana, Lafayette continues to nurture the chapter there back to life. The new board came in just before the shutdown forced them to spend a full semester online. They are keen to bring valuable seminars to the students and are planning to present in classes in the coming weeks to boost membership.

Charles Adams continues as the President of the Student Chapter at the University of Houston. He seized the opportunity to celebrate the success of Naveen Krishnaraj and Makpal Sariyeva in the Student Paper Competition and arranged an impromptu presentation and photo call socially distanced outside the faculty building! With all the previous officers having graduated in May, Charles will be on a recruiting drive and plans as best he can to maintain the chapter's momentum of activities, including Zoom training with PHDWin, Houston Food Bank community outreach, a second Oil and Gas Career Fair in early 2021, initiating contact with startup companies, as well as setting up a Distinguished Lecturer event.

Overall, I've seen lots of optimism. Whether it is from the student chapters, with members energetically keen to understand what the changes in the industry will mean for their futures, or from the long-established city chapters whose members have seen a crisis or two and are resiliently adapting to the challenges and making new plans, our members are looking forward with plenty of hope.

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DOWN

1 A line on a map that represents a constant value of the parameter being mapped

3 The study of fossilized remnants of microscopic entities having organic walls, such as pollen, spores and cysts from algae

4 An adapter that serves to connect the rotary table to the kelly

5 A set of equations that describes the partitioning of energy in a wavefield relative to its angle of incidence at a boundary

7 Located down the slope of a dipping plane or surface

8 A principle of physics stating that the product of pressure and volume divided by the temperature is a constant for an ideal gas

10 Describing rocks or sediments containing particles that are silt or clay sized

11 A carbonate sedimentary rock predominantly composed of calcite

14 Lithified volcanic ash

16 Description of the roughness of a borehole wall

18 Voids or large pores in a rock that are commonly lined with mineral precipitates

ACROSS

2 Short name for floating production storage and offloading vessel

6 The weight of overlying rock

9 Pertaining to a repulsion of water by the surface of a material or a molecule

12 A percentage share of production paid from a producing well

13 The amount of displacement of a seismic wavelet measured from peak to trough

15 A model for converting relative elemental yields to absolute weight concentrations assuming that the sum of all oxides is 100%

17 Radial distance from the wellbore to the outer tip of a fracture

19 A device used in surface seismic acquisition to detect seismic wave velocity

20 The process of absorbing a wetting phase into a porous rock

Vivek Anand, Manager at Deloitte Consulting

Vivek Anand is a manager in the Strategy and Analytics practice at Deloitte Consulting and leads the development of cutting-edge technologies leveraging machine learning, artificial intelligence, knowledge graphs, and natural language processing. He has led implementations of large-scale enterprise solutions in various Fortune 500 companies across oil and gas, technology, healthcare, food distribution, and pharmaceutical industries. Prior to joining Deloitte, he worked for Schlumberger Oilfield Services and Riversand Technologies in various technical and leadership roles from 2007–2018. He has authored more than 20 papers in scientific journals, holds 15 US patents, and has served on the editorial and review boards of several journals, including *Petrophysics*, *Geosciences*, and *Journal of Magnetic Resonance*. He has been awarded prestigious industry awards for his contributions, including the SPWLA Distinguished Speaker, the SPE Gulf Coast Award, and a World Oil Award.

Share with us your background in data science, data analytics, and machine learning.

I am a manager in the Analytics and Cognitive practice within Deloitte Consulting. In this role, I lead the development of innovative solutions that leverage data science, machine learning, and artificial intelligence (AI) for solving business problems. I also have had the opportunity of implementing data science solutions for Fortune 500 companies in various industries, including oil and gas, retail, life sciences, pharmaceutical, and technology. My journey with machine learning and data science started 13 years ago when, after completing a PhD degree in chemical engineering in 2007, I joined Schlumberger Oilfield Services as a research scientist. At Schlumberger, I led the development and commercialization of reservoir characterization technology, including new-generation NMR, spectroscopy, and fluid sampling tools. From 2017–2018, I led the analytics and data science program for Riversand Technologies—a global software company providing data management solutions.

What resources were most helpful for you to upskill in the areas of data science, data analytics, and machine learning? What resources are best for discovering the latest advances in the world of data?

The resources that I found most helpful for upskilling in the areas of data science, analytics, and machine learning are online courses offered by e-learning platforms, such as Coursera and Udacity, and technical books published by O'Reilly and Manning publications.

Another resource that I find very useful is Amazon Kindle. I have a subscription to Kindle Unlimited that provides access to thousands of books on technical and business topics. I make it a point to take mini reading breaks every day to refresh my mind and to learn something new. For learning about the latest advances in the fields of my interest, I like reading blogs and articles published on Medium. Finally, I enjoy networking with my peers on social media networks, such as LinkedIn, to keep abreast of technology trends and applications.

Describe a few interesting use cases of data-driven methods in petrophysics, geophysics, or physics in general. What use cases clearly demonstrate the need and the efficacy of data-driven methods?

There are several use cases that clearly demonstrate the need and efficacy of data-driven methods in petrophysics and geosciences. First, data-driven methods can be used for accurate analysis of well-log data. Unlike physics-based approaches, data-driven methods enable the analysis of large quantities of data without the need for making simplifying assumptions. This aspect of data-driven methods makes them particularly suited for petrophysical analysis of oil and gas reservoirs, which are often too complex systems to be accurately described by simple equations. While at Schlumberger, I developed an unsupervised learning technique that could automatically identify fluid signatures in NMR well logs without any a-priori information about the reservoir. The technique was successfully used for fluid typing in shale reservoirs around the world. Another use case of data-driven methods is the utilization of computer vision for automatically detecting features of interest in seismic or core images. Computer vision techniques, such as convolutional neural networks, have achieved nearly human-level performance and are now routinely used for diverse applications, such as face recognition and autonomous driving. I believe that these techniques can prove extremely useful in aiding the analysis of image data. Finally, algorithms and techniques leveraging knowledge graphs (such as those powering the search capabilities of Google and Bing) can be used for aggregating information from multiple sources, thereby enabling the geoscientists to build a comprehensive view and understanding of reservoirs.

What are a few limitations of data-driven methods that you have encountered? How do you overcome these limitations? What problems cannot be solved using data-driven methods?

Most data-driven methods require high-quality and sufficiently large-sized data to build accurate models. Furthermore, the data have to be unbiased, balanced (i.e., containing equal number of instances belonging to different categories), and representative of realistic conditions. Acquisition of such comprehensive data is often very expensive and time consuming. Data-driven methods, especially advanced techniques such as deep learning, often lack explainability and may feel like a black box. For overcoming these limitations, data analysts should employ strict quality-control measures, understand how data were acquired, and discard those data sources that do not meet the quality standards. New methods, such as transfer learning and data augmentation, may be used to overcome the limitation of data size by either enabling the transfer of previously acquired knowledge from other data sets or increasing the size of the data itself. Model interpretability and explainability are topics of significant scientific research, and techniques, such as partial dependence, can be leveraged.

When is a physics-based approach more effective and efficient than a data-driven approach? How does domain knowledge influence data science? How do you use physics to improve the efficacy of data-driven methods? Share some examples with us.

In my mind, physics-based and data science methods are complementary and should not be viewed as a substitute of one another. Physics-based methods can provide a qualitative understanding of a physical phenomenon but may require simplifying assumptions. On the other

hand, data-driven methods can provide highly accurate results but may lack generalizability and/or explainability. Domain knowledge is the glue that binds the two together and is critical to lending validity, interpretability, and applicability to data-driven methods. For example, data-driven methods often require detailed engineering and selection of features that contain as much information as possible regarding the system of interest while reducing the dimensionality of the input data. Leveraging domain knowledge and physical understanding of the system is critical in identification and selection of relevant features.

How can domain experts and technical personnel incorporate data-driven methods in their day-to-day work? Should the data-driven implementations be done by data scientists and data engineers or can such implementations be accomplished by domain experts without the need of data scientists/engineers?

As I mentioned previously, data-driven methods should not be viewed as a substitute but as an extension of traditional data analysis techniques. Many complex problems in geosciences require a hybrid approach that combines the power of both techniques. I recommend that domain experts and technical personnel expand their knowledge of data-driven methods and consider these methods as additional tools in their tool kit to be effective in building quality solutions that make the most business impact. Most open source libraries (such as the scientific computing Python library scikit-learn) have made it very simple to experiment with new techniques without the need of detailed knowledge of mathematical underpinnings of the various algorithms. Incorporating data-driven methods can be achieved by going through the documentation of the libraries, particularly the assumptions and parameters of the underlying algorithms.

It is easy to create a proof-of-concept data-driven method. Please share with us some challenges when scaling up these methods for real-world deployment.

With the proliferation of IOT devices, sensors, smartphones, and tablets, the rate of data generation and acquisition is growing exponentially. It is estimated that over 2.5 quintillion bytes of data are generated every day. It is, therefore, imperative that the data-driven solutions are able to scale to handle massive data volumes. A key challenge in building data-driven solutions is that data scientists often lack the necessary software engineering skills needed to build and deploy scalable solutions. Knowledge and expertise of big data technologies, such as in-memory processing frameworks (e.g., Spark) and cluster computing, are therefore essential for building scalable solutions. Another challenge is the availability of adequate compute and storage resources to process large data volumes. With the advent of on-demand and cost-effective infrastructure offered by cloud vendors, such as AWS, Azure, and GCP, this challenge has, however, become less of a bottleneck in the recent years.

Lot of petroleum engineers and geoscientists are reskilling themselves to become data scientists and data analysts. What should they be careful about when making such transitions? What are some aspects of petroleum engineering and geoscience that are far superior than data science and analytics? Which aspects of data science and data analytics are not suitable for domain/technical experts? Why is data science not for everyone?

Unlike traditional science, math, and engineering fields, the field of machine learning and data science is very applied in nature and intended to solve practical business problems. The practitioners of petroleum engineering and geosciences will immediately observe the heuristic and empirical nature of data science, and an obvious lack of rigorous mathematical frameworks and theories. Nonetheless, when paired with detailed domain knowledge, data sciences can provide new and wonderful ways of solving challenging and previously unsolvable problems.

Yao Peng, Data Scientist at Engie NA

Yao Peng is a data scientist at Engie NA, where he leads the development of data science workflow for the Smart Institutions project, including anomaly detection and prediction, time-series forecast, and image classification. Prior to joining Engie NA, Yao also worked with multiple energy companies, including Sanchez Energy, GPT International, and BP. He assumed multiple roles as a technical contributor and sales representative. He helped organizations with digital transformation and introduced data analytics to the daily technical workflow. Yao enjoys hiking and traveling. He loves RV, although receives strong objection from his wife.

Share with us your background in data science, data analytics, and machine learning.

My initial exposure to data science goes back to late 2016 when I was working in a software company that offers geomodeling solutions to the oil and gas industry. At that time, the concept of data science started to trend in the oil and gas industry, and my company was looking for ways to incorporate data science into the geomodeling workflow. After helping the company develop some machine-learning models for predictive analysis, I decided to have a career transition and became a full-time data scientist from 2018.

What resources were most helpful for you to upskill in the areas of data science, data analytics, and machine learning? What resources are best for discovering the latest advances in the world of data?

Resources to learn data science are quite abundant. Many massive online open course (MOOC) platforms, such as Coursera and Edx, offer many entry- to mid-level data science training courses. These courses are leaning towards applications, so if one wants to learn fundamentals of data science, an online computer science of data analytics degree from top schools, such as Georgia Tech, UT Austin, and UIUC, is always a good choice. Just like petroleum engineering and geoscience, the best way to keep up with the latest developments in data science is by reading papers from top conferences and journals. And, also, because this field is a big advocate for open source, most of the new machine-learning or deep-learning architectures can be found on Github, so you can use those latest developments with ease.

Describe a few interesting use cases of data-driven methods in petrophysics, geophysics, or physics in general. What use cases clearly demonstrate the need and the efficacy of data-driven methods?

For a mid- and small-size operator, finding and producing from bypassed pays are proven to be an effective way to boost company profits. To do so, geologists need to screen a huge volume of historical mud logs to look for keywords like shows, fluorescent, etc. However, mud logs are usually delivered in PDF or even paper formats, which exponentially increases the effort for the screening task. With the help of data science, texts (either typed or handwritten) on mud logs can be recognized, ordered, and reconstructed to form a mud-log database. Any business intelligence (BI) tools can link this database so that a simple search by geologists can return key information, such as lat/lon, formation, production history, etc. This greatly reduces the effort for data screening and allows geologists to focus on important tasks.

What are a few limitations of data-driven methods that you have encountered? How do you overcome these limitations? What problems cannot be solved using data-driven methods?

The name "data-driven methods" states its biggest limitation—it requires a huge amount of data of a decent quality to train model(s), which, by the way, explains why data-driven methods only became popular in recent years, as the ability for human society to acquire and process data just exploded not too long ago. In the areas where obtaining real data could be challenging, one effective way is to generate synthetic data. For example, if we would like to predict mineral composition from well logs but without a good amount of well logs, we can use forward modeling to generate mineral composition from synthetic well logs. That usually gives us a good start. Another very effective way, especially in deep learning, is to use pretrained models published by other institutions and use that for your case. This is called transfer learning and is proven to be quite effective when it is difficult to build a deep-learning architecture and learn from scratch.

When is a physics-based approach more effective and efficient than a data-driven approach? How does domain knowledge influence data science? How do you use physics to improve the efficacy of data-driven methods? Share some examples with us.

Simply speaking, a data-driven model maps your input X to the output Y. However, it is often very complicated to explain how this mapping happens. For example, a very simple neural network can easily contain hundreds of parameters. It is difficult to explain this network without knowing what each neuron, or node, is doing. One project I worked on before was to forecast cumulative well production in 60 days based on the flowback and other data. It is always challenging to explain the forecast result to reservoir engineers and why a certain feature is the driving factor to determine the outcome. In cases like this, domain knowledge can play a key role in model explainability.

How can domain experts and technical personnel incorporate data-driven methods in their day-to-day work? Should the data-driven implementations be done by data scientists and data engineers or can such implementations be accomplished by domain experts without the need of data scientists/engineers?

Many oil and gas software applications now have built-in data science functionality. A domain expert can implement those quite easily. The key issue here, however, is whether the domain expert has the essential understanding of data science to produce a quality result. In such a case, the domain expert either needs to look for help from a data scientist, or he/she needs to start learning some basic concepts of data science.

It is easy to create a proof-of-concept data-driven method. Please share with us some challenges when scaling up these methods for real-world deployment.

In Python or R, model prototyping only requires a couple of lines of code. However, model deployment requires much more than that. To scale up and deploy a model, a data scientist cannot rely on PCs:

- Code source control
- Data modeling and ETL
- CI/CD pipeline
- Result version control
- Machine-learning model deployment and registration
- Machine-learning model version control

Although some of these are the responsibilities of data engineers, in many cases, the data scientists are heavily involved. It could be challenging for people without a computer science background.

Lot of petroleum engineers and geoscientists are reskilling themselves to become data scientists and data analysts. What should they be careful about when making such transitions? What are some aspects of petroleum engineering and geoscience that are far superior than data science and analytics? Which aspects of data science and data analytics are not suitable for domain/technical experts? Why is data science not for everyone?

In the past few years, many petroleum engineers and geoscientists have already made a career change to the data science role. Because of their background, their first job after the transition is usually still in the oil and gas industry. With the current downturn, the data analytics job market in oil and gas might be slowly saturating. On the other hand, it is much easier for them to continue their career in the oil and gas industry because of their domain knowledge. And, that is their biggest advantage over people with backgrounds like statistics, computer science, or mathematics. In many companies, data scientists are still considered as developers. In fact, 90% of the daily job for a data scientist is coding. If you don't like coding or don't like sitting at your desk for 8 hours a day, data science is probably not for you.

Any other questions or concerns that you want to address?

The entire industry for data analytics is still booming, but that area in the oil and gas industry might not be. So, if you decide to change your career to data science, you need to be prepared for 1) to go to a different industry and accept a paycheck that is lower than what you get in the oil and gas industry since your experience in oil and gas doesn't count anymore; or 2) spend a bit longer time to try to get a position in the oil and gas industry, which could take months.

Girvani Manoharan

Girvani Manoharan is a reservoir engineer looking for new opportunities. Previously, she held operations-focused reservoir engineering roles with Centrica (2015 to 2016) and Maersk Oil Qatar (2012 to 2015). Prior to that, she was an exploitation engineer (reservoir engineer) with CNR International, covering several assets across the North Sea (2007 to 2012). Girvani has a passion for academia, the pursuit of knowledge, and the practical application of science. She holds diverse qualifications spanning physics (BSc), computing (BSc), biomedical engineering (MSc), petroleum engineering (MSc), and defended her PhD in engineering subjected to minor corrections on 6 July 2020.

When did you receive your SPWLA scholarship, how did you learn about it, how was the process applying for it, and how did that help you or influence your career?
I received the SPWLA grant in the academic year 2017 to 2018. I was informed about this funding by my supervisor, Dr. Yukie Tanino. The process of applying for the grant was straightforward with the support of my supervisors Dr. Amer Syed and Dr. Yukie Tanino. My PhD project was focused on the characterization of fracture propagation in rocks under axial stress using X-ray and neutron tomography. The funding was used to cover the cost of a custom-made cell to house rock samples under axial stress conditions and my travel to the Center for Neutron Research at the National Institute of Standards and Technology (NIST), Maryland, USA in March 2018 to perform the experiments. First and foremost, the grant made possible my collaboration with the Neutron Physics group at NIST. My visit also allowed me to meet researchers from a wide range of research backgrounds at different stages of their careers.

What do you think was the main reason SPWLA approved your scholarship?
I believe my application was successful because of the relevance of formation evaluation to my project, the novelty and timeliness of my research, and the opportunity for me to work at a world-renowned research facility. With "easy oil" becoming scarce, modern exploration and production portfolios are commonly held within geologically complex settings. Our ability to characterize and predict fracture networks, reservoir heterogeneities, and fluid-compartmentalizing effects is critical to predicting the dynamic fluid flow and geomechanical behavior of these fields under production conditions. The aim of the PhD study was to characterize the macroscopic failure of rocks under axial stress, taking into account microscopic phenomena. Obtaining direct measurements of the fracturing process of rocks under axial stress using X-ray and neutron tomography is new in this field, and the understanding of petrophysical properties of rocks helps immensely with rock fracture characterization.

Did the SPWLA scholarship have some influence on the path you took during your professional life and being a member?
Traveling to NIST to conduct the experiments would not have materialized if not for the SPWLA grant. The travel allowed me to use the NIST's newly fit simultaneous X-ray and neutron imaging facility and also provided me with an opportunity to collaborate with researchers in the US and to experience US research cultures and perspectives.

What do you remember from those times as a student and SPWLA scholarship recipient?
I did not have an opportunity to attend the SPWLA Annual Symposium, but being a recipient of the scholarship and attending the seminars have certainly helped to build a network with professionals in the petrophysics field and helped to educate me on the significant influence that the understanding of petrophysics has on studying rock failure.

Was there an SPWLA professional or student chapter in your school? Were you a regular at SPWLA events, if any?
The University of Aberdeen did not have a student chapter.

What was your biggest challenge during graduate school and how did you overcome it?
I was a mature graduate student. I am also a mother of two young children. Balancing my childcare responsibilities and my studies was certainly a challenge. With perseverance and my husband's support, I was able to complete my studies successfully.

Is there a mistake you made in school that you want to share with others to avoid?
As a mother of two, I used to fear that I would not be able to dedicate towards my PhD project the hours that my peers without childcaring responsibilities could. This certainly made me anxious during the first two years of my PhD studies. However, I learned to work efficiently and to manage my time between my family responsibilities and work commitments. What I would like to say to current students is that everybody's project and working patterns are unique. If we do our best and work diligently, we can achieve our goals.

Who was your role model at school and when you started your career? You can name more than one.
My role models at school were my supervisors Dr. Amer Syed and Dr. Yukie Tanino. I came to the university after working in the oil industry for 10 years. They taught me how to mold myself back into an academic working environment, and I got inspired by their way of thinking, working methods, and how to present data. When I started my career in 2007, my role model was James Eden, the vice president of the Exploitation team at Canadian Natural Resources (CNR) during

that time. For a young graduate, who came from Sri Lanka, he helped me to transfer my skills and become a reservoir engineer. James guided me throughout my MSc degree in petroleum engineering, which I completed through a distance-learning program at Heriot-Watt University while working at CNR International.

How did you start your career in petrophysics and formation evaluation?
My first degree was in engineering physics, which I completed in Sri Lanka. When I came to the UK while I was working as a technical assistant at CNR, I was fortunate to have a mentor James Eden who encouraged me to become a reservoir engineer.

How do you convey the importance of petrophysics/formation evaluation to your colleagues from other disciplines when collaborating on a project?
During my project, I collaborated with people who study metals under stress. The way metal reacts under stress is different from how rocks react. Failure in metals is initiated by dislocations, whereas in rocks, the initiation of fractures is less well understood due to its heterogeneity. An understanding of the rock fracturing process requires the petrophysical characterization of the constituent rocks.

Where do you see yourself in five years?
I see myself working in the petroleum engineering industry where I can contribute to the cost-effective and environmentally safe extraction of hydrocarbons to assist with current and future energy needs. I am also passionate about encouraging young children to excel in STEM subjects at the school level. I hope to serve in a STEM ambassador role.

Any personal activities or background you want to share?
I was born and brought up in Sri Lanka during a civil war. Due to that, I changed schools and houses multiple times and was at a refugee camp for six months during my high school days. However, my passion for the pursuit of knowledge and to make a better life for me and my family made me use every single opportunity that came my way to its fullest potential. Doing my best, working diligently, perseverance, and being thankful has made me who I am today with the help of my family and institutions, such as SPWLA.

What do you recommend to current students in petroleum engineering and geosciences, especially with work/research in the field of petrophysics/formation evaluation?
My advice would be to do your best in whatever you do. Collaborating with other students and research teams will enhance your understanding of your own project as well as theirs. And also, there is help available financially for petroleum engineering and geosciences students, which you will find out only through networking and sharing knowledge.

How do you see the future of SPWLA and what do you think we need to do to keep our society current?
As with all activities related to the petroleum industry, we need to stay current with concerns about the environmental impacts associated with the use of fossil fuels. Technology and SPWLA can address these concerns by promoting the safe extraction of hydrocarbons and minimizing its impact on the environment. This can be achieved through avoiding waste, spills, use of harmful chemicals, and avoiding mistakes that increase wastage, for example, redrilling of wells.

Anything else you want to add?
I am truly thankful to the SPWLA committee for awarding me the grant and for this opportunity to share my views and experience.

Nur Wijaya

Nur Wijaya graduated with a BS degree in petroleum engineering as the highest-ranking graduate from Texas Tech University in 2017. He then earned his MS degree in petroleum engineering from Texas Tech University in 2018 with a research focus on formation damage in unconventional reservoirs. Currently, he is a PhD student in petroleum engineering at Texas Tech University, specializing in the modeling of enhanced oil recovery (EOR) in unconventional reservoirs. Within his PhD program, Nur has published peer-reviewed journal articles and conference presentations revolving around production enhancement from shale-oil reservoirs, such as those in the Permian Basin. Nur is excited to join KeyLogic Systems as a subsurface energy analyst after graduation.

When did you receive your SPWLA scholarship, how did you learn about it, how was the process applying for it, and how did that help you or influence your career?
I received the SPWLA scholarship and grant in my final year of PhD (2020 to 2021). I learned about the scholarship and grant through my involvement in the SPWLA Texas Tech University student chapter. In the application process, I wrote my personal and research statement, mainly my interest in applying the proposed funding for my reservoir simulation research. The scholarship and grant have greatly impacted my research as they enable me to be more productive in my research.

What do you think was the main reason SPWLA approved your scholarship?
I believe SPWLA truly cares about students' success in researching the area of petrophysics and reservoir characterization. SPWLA believes in the idea that young students are the future leaders of our industry.

Did the SPWLA scholarship have some influence on the path you took during your professional life and being a member?
I have been a member of SPWLA since my undergraduate program. I have maintained my membership through my master's and PhD programs. I plan to be involved in and contribute to SPWLA through my professional life as well.

What do you remember from those times as a student and SPWLA scholarship recipient?
I attended a lot of SPWLA events on my campus, including petrophysics software training, formation evaluation in unconventional reservoirs, etc. It was a great experience to see how technology continuously evolves to tackle more oil and gas recovery challenges.

Was there an SPWLA professional or student chapter in your school? Were you a regular at SPWLA events, if any?
Yes, there is an SPWLA student chapter at Texas Tech University. In fact, in spring 2020, our chapter was awarded the outstanding student chapter of the year because our chapter attracts many new members, even from non-mainstream majors, such as mechanical engineering and civil engineering, and also our chapter continuously provides learning and networking opportunities for our members.

What was your biggest challenge during graduate school and how did you overcome it?
I think the biggest challenge is having the mentality to publish novel research findings. I learned that the industry continuously enters uncharted territory as far as learning about the reservoirs. I believe that having a strong fundamental understanding of science and engineering concepts is the starting key to propose these novel research findings. I learned from classes, conferences, scientific journal papers, and experts' testimonials to help me move my research along.

Is there a mistake you made in school that you want to share with others to avoid?
Research can be a time-consuming and challenging experience, both mentally and emotionally. Enjoy the process and always remember the small wins along the way

Who was your role model at school and when you started your career? You can name more than one.
There were a few, including my supervisor, Dr. James Sheng, and my committee members, Dr. Steven Henderson, Dr. Lloyd Heinze, and Dr. Sheldon Gorell.

How did you start your career in petrophysics and formation evaluation?
I was exposed to petrophysics through my first reservoir engineering job in a subsurface development team at a multinational company in Southeast Asia. I continued developing my interest in petrophysics through my graduate program and professional life.

How do you convey the importance of petrophysics/formation evaluation to your colleagues from other disciplines when collaborating on a project?
I help my colleagues understand that petrophysics is oftentimes full of uncontrolled parameters. This helps them appreciate the interpretation that petrophysicists make, which is something that a computer cannot single-handedly handle, at least currently. This is why SPWLA is crucial because it helps disseminate new technologies surrounding petrophysics and improves our interpretation validity as a whole industry.

Where do you see yourself in five years?
I see myself continuously learning about new advancements in petrophysics.

Any personal activities or background you want to share?
I like to play badminton with friends in our sports club on the weekend. We play challenging games, too!

What do you recommend to current students in petroleum engineering and geosciences, especially with work/research in the field of petrophysics/formation evaluation?

There is a lot of educational and networking opportunities within SPWLA. Stay involved with the organization and updated with current technologies.

How do you see the future of SPWLA and what do you think we need to do to keep our society current?

Over the course of the more than five years I have been involved in the SPWLA Texas Tech University student chapter, I have seen that the SPWLA attracts more students' participation. I am sure SPWLA will have a great future with young minds gradually coming to contribute.

Anything else you want to add?

Thank you, and I wish SPWLA the best of luck and continued success!

Vishal Das

Vishal Das is a geoscientist in Deepwater Development Gulf of Mexico with Shell Exploration and Production Company. As part of his current role, he is working as a geophysicist on the Whale field development team. He is also involved in digitalization research and development projects within Shell. Previously, he was a geoscientist with Schlumberger from 2012 to 2015, working as workflow support and a consultant for seismic interpretation and geomodeling projects. Vishal received his PhD degree in geophysics from Stanford University. He also received a PhD minor in statistics, an MS degree in geophysics from Stanford University, and an MS degree in applied geophysics from the Indian Institute of Technology (Indian School of Mines).

When did you receive your SPWLA scholarship, how did you learn about it, how was the process applying for it, and how did that help you or influence your career?
I received an SPWLA grant in the academic session 2018 to 2019. I came to know about the scholarship through my colleagues at the Stanford Rock Physics and Borehole Geophysics (SRB) consortium. The process required a project description that needed to be endorsed by the student's PhD advisor stating the purpose of the application for the grant. The grant helped me in continuing my project on viscoelastic numerical modeling and digital rock simulations. This was a big part of my research and has helped me develop my skills in rock physics and petrophysics. As part of the completion of the project, I could publish my results in leading geophysics journals. The project enhanced my interests in petrophysics and formation evaluation.

What do you think was the main reason SPWLA approved your scholarship?
In my opinion, a clear project proposal that highlighted the project's objectives, a tentative plan, and the purpose for receiving the grant helped in getting the application through. An added benefit of the proposal was its direct relation to rock physics and formation evaluation.

Did the SPWLA scholarship have some influence on the path you took during your professional life and being a member?

The grant helped me become more active in SPWLA activities, and the success of the project added to my interests in the research area.

What do you remember from those times as a student and SPWLA scholarship recipient?
Petrophysics and rock physics were relatively new to me during that time. I was learning a lot from different events, including SPWLA events. I also remember the era of machine learning and deep learning starting to gain more popularity in the community.

Was there an SPWLA professional or student chapter in your school? Were you a regular at SPWLA events, if any?
Unfortunately, there were none. However, I did participate in a lot of online events that the society organized.

What was your biggest challenge during graduate school and how did you overcome it?
Being versatile enough, not just in geophysics, but having a broader skill set was a challenge that I faced during graduate school. As a result of this passion, I took a lot of courses from the Statistics department and the Computer Science department. Gaining knowledge in these fields and learning advanced topics that I could translate into my research in geophysics was a challenge. Attending lectures, participating in discussions with students from different fields, and bringing the knowledge to people in my department and discussing it with them helped overcome this challenge.

Is there a mistake you made in school that you want to share with others to avoid?
Always focus on the fundamentals of a topic. Do not jump to an advanced topic without understanding the first principles. The better the understanding of the fundamental concepts, the easier it is to grasp advanced topics. In my first few lectures on advanced topics, I struggled to get on top of the game. However, I quickly realized that there were certain gaps in my fundamental knowledge that needed to be filled to have a better experience. Once those gaps were addressed, I felt that things turned out better.

Who was your role model at school and when you started your career? You can name more than one.
Several people, including lots of alumni of the Stanford Geophysics department, who I met during different events and whose works I have read and admired over the years. I was fortunate to work very closely with Professor Tapan Mukerji and Professor Gary Mavko, who also happened to be my role model, guide, and friend.

How did you start your career in petrophysics and formation evaluation?
My first undergraduate industry internship in 2010 with the Drilling and Measurements division of Schlumberger was my introduction to the field of petrophysics and formation evaluation. I was amazed by the tools in the "SCOPE" family and the different measurements that the tools were capable of recording in a single run!

How do you convey the importance of petrophysics/formation evaluation to your colleagues from other disciplines when collaborating on a project?
Anything close to the wellbore is of high value and high importance, especially in the oil and gas industry. A simple improvement through petrophysics or formation evaluation has a massive impact. A lot of our decisions are based on petrophysical evaluations. Showing the value of petrophysics in the final decision-making process is often the most powerful way that I've found to effectively convey the message to other disciplines.

Where do you see yourself in five years?
Adapting to the dynamic world that we live in and leading some of the digitalization efforts in our domain.

Any personal activities or background you want to share?
I come from a very diverse background. Because of my father's job, I lived in different parts of India during my childhood. As part of my job and studies, I am fortunate to visit different parts of the world. My interactions with people from different backgrounds have helped me in understanding and appreciating the importance of diversity and opened my mind to always look at things with a broader perspective.

What do you recommend to current students in petroleum engineering and geosciences, especially with work/research in the field of petrophysics/formation evaluation?
Be open to changes. Try to be versatile with your skill sets. Interact with people and get involved with different professional societies like SPWLA, SEG, and SPE. Learn, learn, and learn!

How do you see the future of SPWLA and what do you think we need to do to keep our society current?
I have already noticed SPWLA adapting to the technology shifts and changes in lifestyle in the current world. I think SPWLA should keep up the trend and set the standard for leading some of these efforts. Also, students should be encouraged through this society to engage in different initiatives and lead them through their experiences.

Anything else you want to add?
Thank you for giving me the opportunity. Best wishes to SPWLA with all its activities.

ABERDEEN CHAPTER
(Aberdeen Formation Evaluation Society, AFES)

General News
AFES has recently held two webinar-based events. These events have been well attended with delegates "tuning in" from around the local area and also from around the globe.

Recent Events
20 May 2020—We have been delighted to host Stein Ottar Stalheim (Equinor) via video conference from
    Stavanger.
5 August 2020—More recently, Harry Xie (CoreLabs) spoke on NMR analysis of unconventional cores live from
    Houston, Texas, USA. Details and also the presentations are available for download via the "archives"
    section of the AFES website (www.afes.org.uk).
18 August 2020—AFES hosted a field trip to the Ythan Estuary, Newburgh, around 15 minutes north of Aberdeen.
    The Estuary offers an excellent example of sedimentology and reservoir analogues and is ideal for
    experienced geologists and less experienced non-geologists alike.

Upcoming Events
2 and 9 September 2020—Our Full-Day Seminar ("Core: The Most Valuable Asset in Your Reservoir"), originally
planned for 2 April 2020, has been rescheduled for two consecutive Wednesdays in September (2nd and 9th). We
had discussed hosting the event part virtually and part in person, but with recent CV19 issues, we've decided to
host the event 100% webinar based. This event will be free to attend. Despite the global restrictions, we are
excited to bring you an excellent suite of talks from various speakers. All details are available on our website
(www.afes.org.uk)

AFES Aberdeen Formation
Evaluation Society

AFES 2020 Seminar

Core: *the most valuable asset in your reservoir*

Rescheduled to 2nd & 9th September 2020
Webinar Based Event
Details available at www.afes.org.uk

SESSION 1 - Wednesday 2nd September			
13:00	13:15	AFES	Opening slides
13:15	14:00	Keynote: Iulian Hulea	Shell Gloal Solutions BV	Understanding fundamental controls of hydrocarbon saturation: from stress corrections to perched water contacts
14:00	14:30	Craig Lindsay	Core Specialist Services	Big Data From Core – Multi-Sensor Core Logging Case Study
14:30	15:00	Adam Moss	AKM Geoconsulting	Successful Core Analysis – A Lab & Opco Perspective
15:00	15:30	Quentin Fisher	University of Leeds	Core analysis as part of the fault property prediction workflow
15:30	16:00	Izaskun Zubizarreta	Indar Solutions	Core wettability - can we get it right?
SESSION 2 - Wednesday 9th September			
09:00	09:30	Colin McPhee	Mercat Energy	SCAL Data Quality Control for Static & Dynamic Reservoir Modelling: A Case Study
09:30	10:00	Philippe Rabiller	Rabiller Geoconsulting	Capillary Pressure - An Integrated Flow Chart For Carbonate Reservoir Characterization From Resource Assessment To Field Development And EOR
10:00	10:30	Alan Swanson	Core Laboratories	Dual Energy CT Scanning – Millimeter-Scale Log for Cored Intervals
10:30	11:00	Henk Kombrink	North Sea Core	The Second and Not So Secret Life of Core with the North Sea Core Initiative
11:00	11:30	Chris Reed	Mercat Energy	Integration of Continuous Core Strength Measurements and Rock Mechanics Tests for Optimised Strength Models in Geomechanics Applications
11:30	11:35	AFES	Closing remarks

Week commencing 21 September 2020—This year, DEVEX will be a week-long program of FREE digital events focusing on the full cycle of reservoir discovery, evaluation, development, and recovery. The events will take place each day w/c 21 September. For more info, go to www.devex-conference.org.

October 2020—Finally, looking forwards, AFES will host their Annual General Meeting. This will almost certainly be a webinar-based event with a technical talk included. As always, details will be on the website. Please check our website (www.afes.org.uk) or contact greg.blower@gaia-earth.co.uk for details. We are also available on Facebook and Linkedin.

Finally, AFES would like to extend thanks to our sustaining annual sponsors:

ARGENTINA CHAPTER

General News
The new board for the Argentina Chapter was updated on 1 June 2020, and it is shown in the following table:

FUNCTION	NAME	COMPANY	EMAIL
President	Marta D'Angiola	Weatherford Arg.	marta.dangiola@weatherford.com
Past-President	Angel Lopez	Baker Hughes	angel.lopez@bakerhughes.com
Secretary	M. Lorena Caviglia	Pan American Energy	mcaviglia@pan-energy.com
Technology	Paula Bedini Claudio Naides Pablo Pateti Pablo Saldungaray	YPF-Tecnología Pampa Energía Wintershall DEA Schlumberger	paula.c.bedini@ypftecnologia.com claudio.naides@pampaenergia.com pablo.pateti@wintershalldea.com PSaldungaray1@slb.com
Events	Luz Rodriguez	Total Austral	luz.rodriguez@total.com
C. Rivadavia Delegation	Eduardo Breda	Consultant	bredaedu@hotmail.com
Neuquen Delegation	Nicolas Carrizo	YPF S.A.	nicolas.carrizopaez@ypf.com
Mendoza Delegation	Ariel Buchini	YPF S.A.	ariel.r.buchini@ypf.com
Buenos Aires Delegation	Guillermo López Peze	Pan American Energy	GLopezPeze@pan-energy.com
Web page:	Pablo Uzzo	Tecpetrol S.A.	pablo.uzzo@tecpetrol.com

New board for Argentina Chapter.

The Technology/Innovation Team will have the responsibility of promoting and keeping our community informed of new technological advances and innovation. These high-level senior professionals work daily in this area. For this reason, they will contribute novel themes and ideas to be developed and disseminated through the different proposed activities.

Our regional delegates will be responsible for improving the visibility of our Chapter in the different bases of the interior of the country and for achieving a close relationship with the educational communities and universities. They will receive and transmit the concerns, uncertainties, ideas, and proposals of these professionals from all over the country, and we will work on addressing the findings.

The importance of the support team, including secretary, events agent, and web page and diffusion agents, is immense. They will be responsible for all the activities and technical events that arise in the Chapter and make sure that they are organized successfully.

Due to the global pandemic, we are developing different formats for our activities. We must be creative and take this situation as a great opportunity for professional and personal growth.

THERMAL MATURITY-ADJUSTED
LOG INTERPRETATION (TMALI)
IN ORGANIC SHALES

Paul Craddock (Schlumberger)

24-JUN-2020 (10:00 -> 11:00)
TRANSMISION VIA TEAMS

Organizado por: SPWLA Capitulo Argentina (spwlacapituloargentina@gmail.com)
Agradecimiento especial: Gestion del Conociemiento YPF

www.spwla.org

Distinguished Speaker Paul Craddock presented to the Argentina Chapter in June.

For our Distinguished Speaker event in June, we used our database of more than 300 contact emails to reach out and promote this activity. It was attended by more than 130 professionals who listened carefully to Paul and showed deep interest by posting many related comments.

Upcoming Events
In our monthly meetings, we proposed several different formats for upcoming activities that have been adapted to the current situation. We organized them, taking into account the timing.

a) Short Term: Talk format
Topic 1: "How to Build a Petrophysical Model From the Pore to Logs" by Claudio Naides, advisor petrophysics and ex-DS (2017–2019). It will be presented in September 2020, via Teams.
Topic 2: Electron Spectroscopy
Topic 3: Organic Petrology
These two topics will be presented by Y-Tec specialists and will be coordinated by Paula Bedini. They may be scheduled for Q4 2020, depending on the availability of the speakers.

b) Medium Term: Workshop or debate format
Data Analytic Topic: Uses and Abuses
Alberto Ortiz (DS 2020) will serve as the moderator for this meeting. The event may include two or three speakers, and it will be coordinated by Pablo Saldungaray. Its duration will be approximately an hour and a half to allow time for questions. This event will be organized for Q4 2020 or Q1 2021.

c) Long Term: Roundtable format
Geonavigation Topic
This event will be presented from two perspectives: operators and service companies. The idea is that this event serves the needs of operators and the rest of the audience who participate. It is not a space that service companies use to market their tools. The oil companies will define the contents: problems and challenges, what happens in volcanic areas, in organic areas, in fractured areas, etc. (YPF, Pluspetrol, and Chevron are happy to participate). For

service companies, participants may include Schlumberger, Baker Hughes, Weatherford, and Rogii. This event is planned for 2021, and it will be coordinated by Marta D'Angiola with the support of the rest of the team.

Distinguish Speakers Program
New candidate: Pablo Saldungaray (Schlumberger), advisor petrophysicist
We propose the renewal for 2021: Alberto Ortiz (YPF S.A.), senior petrophysicist

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AUSTRALIA CHAPTER
(Formation Evaluation Society of Australia, FESAus)

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General News
FESAus, the Australian Chapter of SPWLA, combines the formation evaluation societies from around Australia, predominantly Western Australia, as well as FESQ, New South Wales, Victoria, and South Australia. With the great work done by Australians to date in managing the COVID-19 outbreak, we have resumed in-person chapter meetings in July and are continuing the webinar series hosted by Halliburton for our out-of-state members. Our meetings are held on the second Tuesday of each month, and we welcome new members to visit www.fesaus.org to join us.

2020 Committee Members

President	Wesley Emery
Vice President	Vacant
Secretary	Vacant
Treasurer/Monthly Meeting Coordinator	Jean-Baptiste Peyaud
Website Coordinator/Data Standards Focal Point	Diego Vasquez
Secretary/Intersociety Liaison/Social Coordinator/ Special Events and Awards	Leanne Brennan
Membership Coordinator	Siobhan Lemmey
Audio Visual Coordinator	Nigel Deeks
Audio Visual Team	Yang Xingwang and Saeed Hafezy
Newsletter Coordinator	Bronwyn Djefel
Queensland Representative	Marcel Croon
South Australian Representative	Matthew Pfahl
Victoria Representative	Ashish Datey
NSW Representative	Harris Khan
New Technology Forum Coordinator	Adrian Manescu
Education Group Leader	Mike Walker

Recent Events
14 July 2020—Our first in-person meeting since February was presented by Nick Last (Well Test Knowledge International), petrophysicist. His presentation on "Production Logging: The Essential Guide to the Dynamic Behaviour of Your Well" inspired many questions and was a great start back to our networking luncheons, with the necessary health precautions taken into account.

Wes Emery and Nick Last.

11 August 2020—Our very own Treasurer and independent geologist, Jean-Baptiste Peyaud, volunteered to present his coauthored paper that was just published in the *Petrophysics* journal, "The Needle in the Haystack: Using Machine Learning to Identify Specific Facies." It was a very interesting presentation on how to use machine learning with expert guidance, and JB had plenty of interest and questions from our audience.

Jean-Baptiste Peyaud and Wes Emery.

We also honored our Past President, Adrian Manescu, for his valued contributions in leading FESAus over the past year, but also his continued contributions over many years, with more to come!

Adrian Manescu and Wes Emery.

Upcoming Events
September 2020—New Technology Forum, Hardware
October 2020—Lawrence Anwasi on Neutron Spectroscopy

BANGKOK CHAPTER

General News
With the current health crisis, SPWLA meetings have been canceled in favor of web meetings.

2019–2020 Chapter Committee Members

President	Andrew Cox
Technical Coordinator	Numan Phettongkam
Treasurer	Sirinya Maykho
Web Coordinator	Alexander Beviss
Secretary	Ronald Ford
Sponsorship	Ryan Lafferty
Student Liaison	Kruawun Jankaew
Member at Large	Greg Heath

Please visit https://www.spwla.org/SPWLA/Chapters_SIGs/Chapters/Asia/Bangkok/Bangkok.aspx for meeting information. Email: bangkok.chapter@spwla.org.

Recent Events
July 2020—Webinar: Thermal Maturity-Adjusted Log Interpretation (TMALI) in Organic Shales was presented by Paul Craddock (Schlumberger-Doll Research Center), senior research scientist and Distinguished Speaker for SPWLA. It was an excellent presentation on a highly topical subject, with global implications for log interpretation of organic shales. Thanks to Paul for getting up before 4 am to share his presentation with us here in Bangkok.
August 2020—Webinar: Metamorphically Speaking, Schist Happens. This is an insightful presentation on the development of fracking as a weapon of mass destruction and why we will ultimately all convert to the national calendar of India. *(Yes, this is here just to see if you are actually reading these newsletters ☺).*
Please check the local website for details on the August webinar:
https://www.spwla.org/SPWLA/Chapters_SIGs/Chapters/Asia/Bangkok/Bangkok.aspx

Upcoming Events

September 2020—We will continue with the webinar format for one more month. Members are free to login from anywhere in the world. Speaker and topic TBD.

October 2020—Live Event: SPWLA will be holding a joint meeting with SPE Bangkok.

Special Announcement

The SPWLA Regional Conference AP-2020 is now tentatively scheduled for March 2021. Please contact us at ap2020@spwla.org for updates or if you have any questions on the SPWLA Bangkok Asia Pacific Regional Conference 2020.

BOSTON CHAPTER

General News

We continue to prepare for the 62nd SPWLA Annual Symposium to be held in Boston in May 2021. The Boston Chapter and the Symposium organizing committees are in frequent contact, despite the disruptions from the COVID-19 pandemic, and we are laying the groundwork for a great reunion of the society in 2021.

Several members of the Boston Chapter had the privilege of presenting their work during the online 61st Symposium conducted in June and July. Our member Lin Liang deserves special mention as a key organizer of the online Symposium in his capacity as SPWLA VP of Information Technology. The Boston members who presented at the Symposium were:

- Jeffrey Miles, for the paper FORMATION CHLORINE MEASUREMENT FROM SPECTROSCOPY ENABLES WATER SALINITY INTERPRETATION: THEORY, MODELING, AND APPLICATIONS; by Jeffrey Miles, Laurent Mossé, and Jim Grau, Schlumberger (SPWLA-5009).
- Nikita Seleznev, for the paper DETERMINING WATER-FILLED POROSITY OF TIGHT OIL RESERVOIRS WITH A NEW INTERPRETATION METHOD FOR DIELECTRIC DISPERSION MEASUREMENTS; by Nikita Seleznev, Tarek M. Habashy, Michel Claverie, Schlumberger; Hanming Wang and Haijing Wang, Chevron U.S.A Inc; Amir Hermes, Jason Gendur, Ling Feng, and MaryEllen Loan, Schlumberger (SPWLA-5044).
- Chang-Yu Hou, for the paper COMPLEX CONDUCTIVITY MODEL FOR HIGHLY MATURE KEROGEN-BEARING FORMATIONS; by Chang-Yu Hou, Denise E. Freed, and Nikita Seleznev, Dean M. Homan, John Rasmus, Gong Li Wang, and Natalie Uschner-Arroyo, Schlumberger (SPWLA-5045).
- Julie Kowan, for the paper CONCLUSIVE PROOF OF WEAK BEDDING PLANES IN THE MARCELLUS SHALE AND PROPOSED MITIGATION STRATEGIES; by Julie Kowan, Baker Hughes; Luke Schanken, EQT Corporation, and Robert Jacobi, Geoscience Consulting and University at Buffalo (SPWLA-5050).
- Ting Lei, for the paper INVERSION OF ANISOTROPIC ELASTIC CONSTANTS AND MUD SPEED USING BOREHOLE SONIC MODES; by Ting Lei, Romain Prioul, Adam Donald, and Edgar Ignacio Velez Arteaga, Schlumberger (SPWLA-5051).
- Ravinath Kausik, for the paper DUAL NEURAL NETWORK ARCHITECTURE FOR DETERMINING PERMEABILITY AND ASSOCIATED UNCERTAINTY; by Ravinath Kausik, Augustin Prado, Vasileios-Marios Gkortsas, and Lalitha Venkataramanan, Schlumberger-Doll Research; Harish Datir, Schlumberger; Yngve Bolstad Johansen, AkerBP (SPWLA-5073).
- Vasileios-Marios Gkortsas, for the paper AUTOMATIC FACIES CLASSIFICATION FROM WELL LOGS; by Vasileios-Marios Gkortsas and Lin Liang, Schlumberger-Doll Research; Yngve Bolstad Johansen, Aker BP; Lalitha Venkataramanan, Schlumberger-Doll Research; Harish Datir, Schlumberger (SPWLA-5075).
- Lin Liang, for the paper MACHINE LEARNING-ENABLED AUTOMATIC SONIC SHEAR PROCESSING; by Lin Liang and Ting Lei, Schlumberger (SPWLA-5076).

Boston members also coauthored many of the other presented papers, signifying the global connectedness of our Chapter. SPWLA general members and Boston-affiliate members are invited to browse our Chapter website http://boston.spwla.org for up-to-date information on our mission and events, including event details and registration.

EAST CHINA CHAPTER

General News

The Cloud Lecture Hall from ECC-SPWLA—Under the current situation, the East China Chapter organized two cloud lectures via an online Tencent conference. Professor Yiren Fan (China University of Petroleum) and Dr. Shanjun Li (Beyond Bits Technology, Inc.) were invited to give presentations entitled "Discussion of Several Key Issues on Well Logging Evaluation of Complex Reservoirs" and "Progress in Electromagnetic Logging Technology," respectively. More than 500 technicians from both enterprises and universities attended the lectures. Professor Fan started the lecture with the challenging logging evaluation problems encountered in the Shengli oil field during his postgraduate. He said, "Petrophysical experiments and numerical simulation are the key techniques in logging tool development and formation evaluation." By comparing the different rock resistivities measured by two- and four-electrode methods, he emphasized that petrophysical experiments rely heavily on measurement technology. Professor Fan also encouraged young scientists to question authority by sharing his experience in proposing the well-known "S" resistivity curves of waterflooding rocks. Then, he presented that formation thickness, resistivity contrast, and invasion status could give rise to server impacts on the measured logging responses and interpretation performance. Thus, a correction chart or even parametric inversions are mandatory to accurately reveal the gas/oil or water-based layers. Targeting hot evaluation issues in horizontal wells and anisotropy formation, Professor Fan pointed out that interactively forward and inversion algorithms, offset well/geological constraint, and proper dimensionality reduction strategy should be considered, and it is better to hierarchically obtain formation parameters according to the different sensitivity of the logging responses to the expected parameters. At the end of the forum, Professor Fan summarized the report and discussed it with the teachers, students, and colleagues in this meeting. He analyzed the logging problems of complex reservoirs in simple language, discussed multiple hot issues of logging evaluation, and shared geoscience knowledge, which greatly inspired the exploration spirit of the teachers and students in this meeting.

Dr. Li briefly reviewed the basic theory of logging-while-drilling (LWD) tools at the beginning of the lecture. He emphasized the importance of patents by introducing the development of typical LWD tools. A simple design of tool configuration cannot be used without permission if it is patented by another company. He suggested that we apply for patents (especially PCT) as soon as possible when we achieve practical and innovative results. Dr. Li said the scientific researchers in universities lack intellectual property awareness. Besides, he proposed that we should read papers from universities and companies in a different way. Papers from universities are focused on theory, but lack applicability, and codes and software developed by companies are more advanced and robust. The root patent authorized by a company is worth reading carefully. Then, Dr. Li shared with us an innovative coil type, ME antenna, which can measure both the magnetic and electrical field at the same time by using a half-circle coil. Dr. Li said it was questioned by many scientists when it was first proposed, but he insisted that it is of great value and worth studying. He spent many years studying this theory, and it is proved correct and practical. More and more researchers have engaged in the theory and application of the ME antenna. At the end of the meeting, the audience asked many questions. Dr. Li and these experts and students had a warm discussion about LWD and ME antenna theory.

Professor Fan and Dr. Li presented great reports about an electromagnetic logging method, rock physics, and formation evaluation for all participants at this meeting. Hundreds of well log analysts and geologists from ECC-SPWLA, colleges, oil companies, and service companies attended the meeting, and some logging experts had a in-depth discussion with the presenters about logging theory, interpretation, and formation evaluation. Under the current situation, regular online meetings of this kind play an important role in discussing professional issues and the latest cutting-edge professional opinions and scientific research results. It is a good way to promote the development of well logging theory and application.

A view of Dr. Li's lecture.
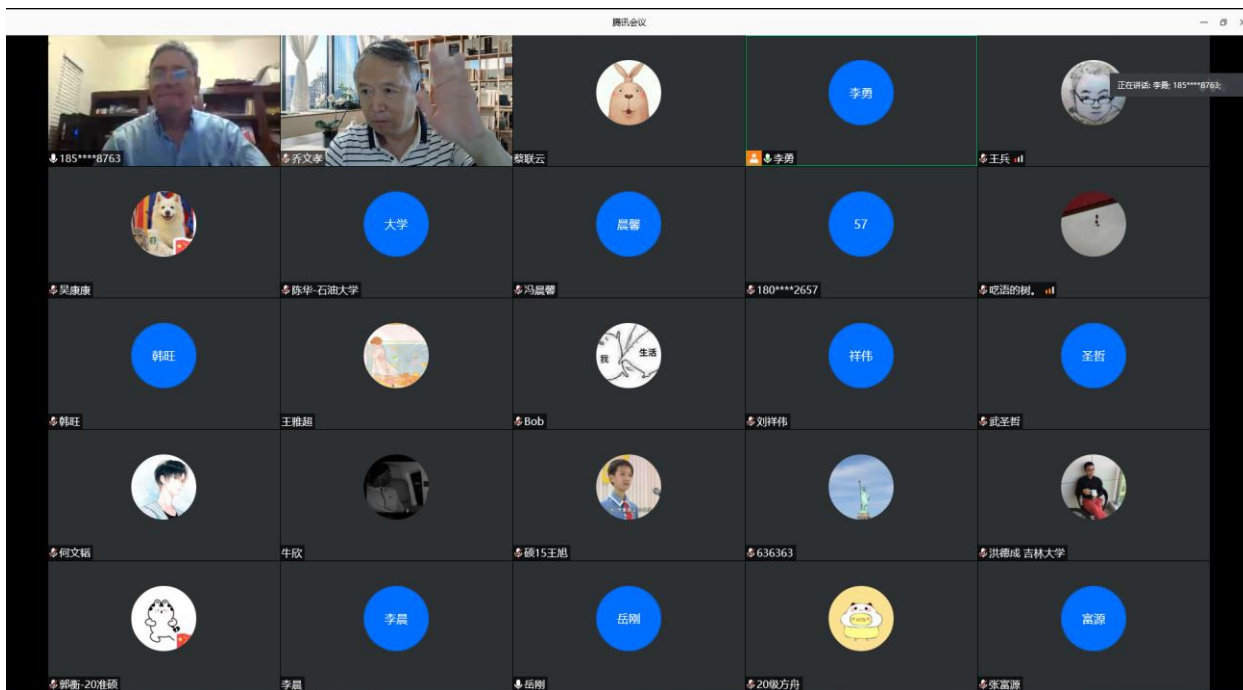
A partial list of participants during the lectures.

DENVER CHAPTER
Denver Well Logging Society (DWLS)

General News
Lunch meetings will be virtual for the time being. The next virtual lunch meeting is scheduled for September 15. The speaker is Dan Krygowski (The Discovery Group), who will present, "Pattern Recognition in a Digital Age: A Gameboard Approach to Determining Petrophysical Parameters." The DWLS Spring Workshop–Horizontal Petrophysics: Applications and Interpretation Techniques in Reservoir Characterization has been canceled and will be rescheduled for 2021. More information to come. The DWLS-RMAG Fall Symposium is still scheduled for October 27, 2020 and will now be held virtually.

Recent Events
No recent events have occurred over the summer months. We are looking forward to kicking off the new year with virtual lunch talks.

Upcoming Events
15 September 2020—The next DWLS Talk will feature speaker Dan Krygowski (The Discovery Group) presenting "Pattern Recognition in a Digital Age: A Gameboard Approach to Determining Petrophysical Parameters." We are still working out registration details and will have them available on our website soon. Please continue to visit the DWLS website at http://dwls.spwla.org to schedule your reservation. The DWLS monthly meetings are held the third Tuesday of the month, from September through May. Be sure to visit our online calendar to see what is scheduled for the upcoming speaker lineup.

Dan Krygowski (The Discovery Group)

DWLS-RMAG Fall Symposium
27 October 2020—The DWLS-RMAG Fall Symposium will feature the topic: Maximizing Value of Core and Fluid Analysis. We are still working on putting the event details on the DWLS website and RMAG site. Please continue to check the DWLS website for more information: http://dwls.spwla.org.

DUBAI CHAPTER

General News
1 May 2020—Dubai Chapter was honored to present the new officers of the board for the 2020–2022 period.

President	Ahmet Aki (Halliburton)
Vice President of Technology	Muhammad A. Gibrata (Dragon Oil)
Vice President of Membership	Marvin Rourke (GOWell)
Secretary	Melissa Ramirez (Petromal)
Treasurer	Melissa Ramirez (Petromal)

Ahmet Aki   Muhammad A. Gibrata   Marvin Rourke   Melissa Ramirez

Our gratitude to the previous officers: Nelson Suarez Arcano (President), Xavier Goddyn (VP Technology), Aita Bijaripour (VP Membership), and Irina Aslanyan (Treasurer) for their participation and great job during the 2018–2020 period.

Due to the current pandemic situation, Dubai Chapter has been holding online technical meetings, once a month, since June 2020. Our online technical events are usually held on the first Wednesday of each month. Anyone interested is welcome to visit our profile on Linkedin SPWLA Dubai Chapter, SPWLA Website: (https://www.spwla.org/SPWLA/Chapters_SIGs/Chapters/Middle_East/Dubai/SPWLA/Chapters_SIGs/Chapters/Middle_East/Dubai/Dubai.aspx?hkey=6476553f-4eb3-41d3-8f98-4eb4f7903bff), or email (dubai@spwla.org) to join the online events and ask any questions regarding the regional Chapter.

Recent Events

3 June 2020—The first monthly technical meeting took place as a joint online event with the SPWLA Abu Dhabi Chapter. Charles Chris Smart presented, "At the Cross-Roads between Physics-Based and Data-Driven, a Resistivity-Free Evaluation Method for Non-Archie Micritic Carbonate Formations." It was a very interesting webinar and a great discussion, with attendees mainly from the Middle East region.

June's technical presentation was by Charles Chris Smart.

4 July 2020—The second online technical event was presented by Muhammad Antonia Gibrata on his work, "An Integrated Petrophysical Evaluation for Reservoir Characterization and Modeling." This was a very successful webinar with attendees from all around the world, followed by interesting discussions and questions.

July's technical presentation was by Muhammad A. Gibrata.

5 August 2020—Our third technical webinar was presented by Nigel Clegg (Halliburton and SPWLA Distinguished Speaker) on "The Final Piece of the Puzzle: 3-D Inversion of Ultra-Deep Azimuthal Resistivity LWD Data." This excellent presentation was very informative and well attended. The speaker answered and discussed multiple questions.

August's technical presentation was by Nigel Clegg.

Upcoming Events

2 September 2020—Marvin Rourke will share his work on "Distributed Fiber-Optic Data: A Complement to Wireline Acquisition." Visit SPWLA Dubai Chapter LinkedIn profile to register.
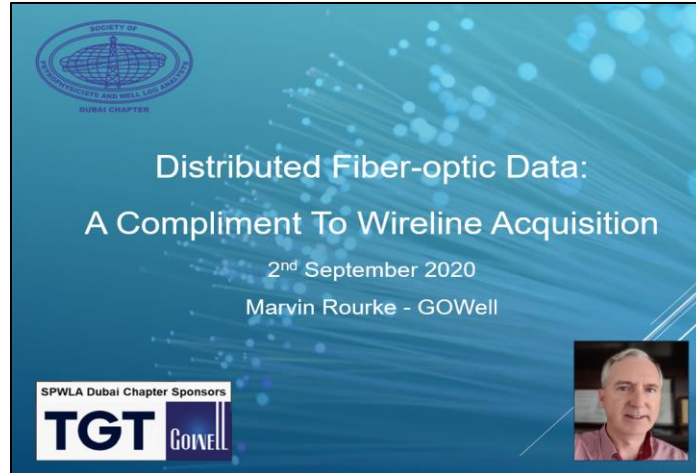
September's technical presentation will be presented by Marvin Rourke.

Dubai SPWLA Chapter would like to thank TGT and GoWell for their generous sponsorship.

FRANCE CHAPTER

General News

Following the renewal of status in February 2020, the Chapter is now officially named "SPWLA France Chapter" (https://spwla-france.fr/). For the record, the Chapter was founded in 1966 and was originally named "Société pour l'Avancement de l'Interprétation des Diagraphies." With such a title, most people could only recall the acronym, "SAID." In April, the Chapter proceeded to an electronic ballot for the election of the new board, with the following members:

Board of Directors

Samira Ahmad	(Schlumberger)
Armando Araújo	(TOTAL)
Emmanuel Caroli	(TOTAL)
Jacques Delalex	(Consultant)
Hafiz Hamzah	(TOTAL)
Mei Han	(Storengy)
Jean-Etienne Jacolin	(Schlumberger)
Jérôme Laval	(IFP School)
Yahaya Mohammed	(Schlumberger)

Among which were elected:

President	Jean-Etienne Jacolin
Vice President	Mei Han
Treasurer	Jérôme LAaval
Administrative Secretary	Hafiz Hamzah
Technical Secretary	Samira Ahmad

Recent Events

19 June 2020—The renewed Chapter organized its first online event using the GoToWebinar platform with technical support from SPWLA. During this Lunch and Learn session, we had the pleasure to host Martin Storey (SPWLA Distinguished Lecturer) and Paul Spooner, with the following well-received talks: Storey's "Log Quality Control, Easy as 1-2-3!" and Spooner's "Lifting the Fog of Confusion Surrounding Deterministic Petrophysics."

INDIA CHAPTER

Recent News

25 July 2020—The India chapter organized an Online Technical Session. This was the first-ever online event in the history of SPWLA India. The technical session evoked an overwhelming response with Pan India participation from ONGC, Baker Hughes, Schlumberger, Weatherford, Halliburton, Expro, GE, RIL, and BowNishi. The session started with a welcome speech by our newly elected President, SPWLA-India Chapter, Mr. M.K. Tewari. Mr. Tewari is the executive director and chief logging services at ONGC Ltd. He encouraged the young professionals to make the best use of the platform provided by the society and exhorted the members to actively participate and contribute in the upcoming activities of the Chapter. He also announced the commencement of publishing a quarterly bulletin for the Chapter.

President M.K. Tewari addressed members during the Online Technical Session.

Secretary Vinod Kumar introduced the Executive Committee (EC) to all members after induction of some of the new office bearers.

New Executive Committee

M.K. Tewari (ONGC)	President
A.K. Chadha (ONGC)	Vice President (Membership)
Ajit Kumar (Schlumberger)	Vice President (Technology)
K.V. Sarma (ONGC)	Vice President (Publications)
Chandrasekhar Deshpande (Baker Hughes)	Vice President (Education)
Vinod Kumar (ONGC)	Secretary
Rakesh Guru (ONGC)	Treasurer

BVS Murty (Halliburton)	Joint Secretary (Membership)
R.S. Chauhan (ONGC)	Joint Secretary (Membership)
Anurag Priyadarshi (Weatherford)	Joint Secretary (Technology)
Juli Singh (Schlumberger)	Joint Secretary (Technology)
Shubhesh Naik (Baker Hughes)	Joint Secretary (Publications)
Jyoti P. Nayak (Expro)	Joint Secretary (Publications)
Badal Singh Solanki (HLSA Asia)	Joint Secretary (Education)
Rajiv Tambe (ONGC)	Joint Secretary (Education)

The first presentation was delivered by Sunit Roy (ONGC), chief general manager (Wells), on "Maximizing Hydrocarbon Gain With an Engineered Approach Based on Standalone Integrated Formation Evaluation in Rigless Scenario With Intervention of Advanced Technology." Mr. Roy explained the use of high-definition elemental spectroscopy that can address the concerns typically associated with mature fields. He started the presentation by addressing challenges. In this presentation, he emphasized recently introduced pulsar technologies logged in the Ankleshwar asset and showed promising results on how the advanced data acquisition is beneficial for the utilization of an existing inventory of sick wells for data acquisition with workover rig deployment, optimization of workover rig development, and zone transfer strategy. The minimization of time in the plugging of unexpected zones in the workover phase, updating existing reservoir models, and the reevaluation of misleading pays without drilling and coring wells were also presented.

The second presentation was delivered by Vikash Kumar (Expro North Sea Limited, India), technical manager, on "Deepening Gas Injection Point in Production Wells Riglessly Using Kinley Perforator." In his presentation, he promoted the Kinley Perforator as a cost-effective solution for remedial gas lift operations to punch a clean, round hole and simultaneously inserts check valves or orifices into tubing for gas lift, deepening in existing production wells. He explained various advantages of the Kinley Perforator, like running on economic slickline or electric line, creation of a hole without harming the casing, quick operation verification, etc. He also discussed a case study. The event was coordinated by Vinod Kumar, Secretary SPWLA-India. Chandrashekhar Deshpande, Vice President (Education), proposed a vote of thanks.

Secretary Vinod Kumar is shown coordinating the session.

MALAYSIA CHAPTER
Formation Evaluation Society of Malaysia (FESM)

General News

Formation Evaluation Society of Malaysia (FESM) is based in Kuala Lumpur. Technical Meetings are held during the fourth week of each month. For meeting information, please visit our Chapter website at www.fesmkl.com.

Recent Events

9 July 2020—FESM hosted its first Virtual Series Technical Meeting with the topic of "Hydrocarbon Identification and Evaluation in a Bioturbated Reservoir With New Generation Pulsed-Neutron Technology" by Long Jiang (Schlumberger). In his presentation, he discussed how bioturbated zones affected stock tank oil originally in place (STOIIP). He described how a multifunction pulsed-neutron service was used to identify and quantify the remaining oil saturation in a bioturbated reservoir. With a combination of carbon/oxygen ratio (C/O) and dry weight total organic carbon (DWTOC), it was able to confirm the remaining oil in bioturbated reservoirs.

12 August 2020—FESM hosted its second Virtual Series Technical Meeting with Martin Storey (Well Data Quality Assurance) to deliver his talk on "Log Quality Control, Easy as 1-2-3." During his talk, he explained the common problems and how operating companies compromise log quality data during their logging and interpretation for several reasons, such as time constraints, lack of several geotechnical personnel, etc. Consequently, he proposed a framework to formalize and simplify log quality control in operating companies and other data-user organizations.

OKLAHOMA CITY CHAPTER

General News

The Chapter has decided to start off the season with two virtual Lunch and Learn events in September and October, after which we will evaluate if we will continue with virtual events or return to in-person meetings.

Upcoming Events

8 September 2020—Z. Harry Xie (Core Lab)–Investigation of Physical Properties of Hydrocarbons in Unconventional Mudstones Using Two-Dimensional NMR Relaxometry

13 October 2020—Mohammad "Wahid" Rahman, PhD (Geoscience and Petroleum Research, Inc)–Geochemistry for Unconventional: Production Allocation, Reservoir Monitoring, and Hydrocarbon Phase (e.g., API Gravity, GOR) Prediction

SAUDI ARABIA CHAPTER

Recent Events

8 July 2020—Saudi Arabia Chapter (SAC) resumed its activities and events with a virtual technical session on petrophysics titled, "A Multifrequency Array Dielectric Logging Service Validated: What's New?," by Ahmed Abouzaid (Baker Hughes), petrophysics and formation evaluation manager. In this talk, Ahmed reviewed the history of dielectric logging and presented the advantages of the latest multispacing dielectric logging services, with frequencies ranging from tens of MHz up to one GHz. Field examples in both water-based mud and oil-based mud environments were shown to demonstrate the added value of advanced dielectric logging. The event was successful, with more than 90 participants from Saudi Arabia as well as in the region.

UNIVERSIDADE FEDERAL DO RIO DE JANEIRO (UFRJ) STUDENT CHAPTER

General News

SPWLA Student Chapter from the Universidade Federal do Rio de Janeiro is composed of 13 active members on its team, who have been dedicated to building an inspiring Student Chapter.

Student Chapter Members

Marketing Team	Rodrigo Azambuja
	Amanda Bezerra
	Caio Guedes
Logistics and Events Team	Isabelle Freitas
	Bruno Valle
	Vinicius Jorge

Board Members

President	Teresa Mourão
Vice President	Leticia Cardoso
Treasurer	Sofia D'Orsi
Secretary	Maria Eduarda Verbicário

Recent News

Intending to contribute to spreading petrophysics, well log analysis, and correlated knowledge to the public, SPWLA UFRJ Student Chapter has been working on webinars. Since June, we have had five different subjects for our webinars.

25 June 2020—Our first and most seen webinar entitled, "Advanced Techniques to Optimize Seismic Interpretation Processes," was presented by Thiago Perille (Halliburton). There were more than 300 subscribers from five different countries, three continents, 14 Brazilian states, and all regions of the country.

7 July 2020—The following webinar, "Evaluate the Impact of Fracture Modeling on Fluid Flow," was presented by Carlos Eduardo Seabra (Halliburton).

14 July 2020—Another presentation entitled, "Adding Value to Petrophysical Evaluation Through Magnetic Resonance," was presented by Giovana Carneiro (Schlumberger).

18 August 2020—Lecture on career planning by Sabina Augras (CMOV).

26 August 2020—"Underreamer: Well-Widening Tool" by Felipe Oliveira (Halliburton).

In addition, both UFRJ and UIS SPWLA Student Chapters have been meeting at least once a week to familiarize the Latin Student Chapters. We have been teaching each other our languages, Portuguese and Spanish, to facilitate our internal communication. Furthermore, we intend to open the selection process for new members at the end of August.

Upcoming Events

The first week of September 2020—"Life Onboard, Women in Charge" by Micheli Celestino from Women Sharing Excellence (Halliburton)

UNIVERSITY OF HOUSTON STUDENT CHAPTER

Two of UH's finalists in the SPWLA International Student Paper Contest (21 June 2020) placed first in their respective categories (Undergraduate and PhD). Their pictures, mini-bios, and abstracts are below.

(From left to right) First place winners of the SPWLA International Student Paper Contest from UH include Makpal Sariyeva (Undergraduate) and Naveen Krishnaraj (PhD).

Bio: Naveen Krishnaraj is a PhD candidate in the Department of Petroleum Engineering at the University of Houston. He specializes in the fields of machine learning, inverse problems, and oil & gas. His mission is to empower the society with data-driven insights and analytics. His vision is to apply curiosity and empathy to innovate and build products for the future.

Abstract: At the heart of nuclear magnetic resonance log measurement interpretation is the process of inverting for T2 amplitude distribution from measured magnetization. Traditional inversion algorithms have limitations due to the smearing effect induced by the Euclidean norm. We have addressed this problem by developing a machine-learning algorithm that performs a hybrid physics/data-driven approach.

Hybrid NMR Data Processing Using a Novel Blind Source Separation Algorithm
Naveen Krishnaraj, Michael Myers, Alon Arad, Lori Hathon, and Xinmin Ge

At the heart of NMR log measurement interpretation is the process of inverting for T2 amplitude distribution from measured magnetization (echo trains). NMR data inversion is an ill-posed problem. It is strongly influenced by noise in the input data, particularly for unconventional reservoirs. Traditional inversion algorithms use Tikhonov regularization, which restricts the range of possible solutions. There are significant limitations due to the use of the Euclidian norm.

We have developed a novel NMR data processing workflow using the non-negative matrix factorization technique (KINMF), which incorporates an exponential kernel into the algorithm. This new and novel blind-source separation algorithm incorporates magnetization data across multiple depths. The output data consists of T2 amplitude distributions and volume fractions of the different relaxation components.

To test the developed algorithms, we performed forward modeling studies using multiple peaked amplitude distributions with varying levels of Gaussian white noise. Additionally, different separation and positions of the T2 peaks were investigated.

We conclude with the advantages of this algorithm:
- The algorithms generate stable solutions without adding constraints to the solution space (regularization)
- It eliminates the smearing effect induced by Euclidean norm
- Single-step inversion and blind-source separation leads to improved computational efficiency (due to absence of regularization)

Bio: Makpal Sariyeva is a senior undergraduate Petroleum Engineering student at the University of Houston. She is the President of the Energy Coalition for the 2020–2021 year and was the President of the Society of Petroleum Engineers Student Chapter for the 2019–2020 year. Ms. Sariyeva is an undergraduate research scholar with a strong interest in the oil & gas industry and a desire to contribute to developing solutions to its challenging problems. Her research on analyzing the performance between child and parent wells in the Eagle Ford Basin won numerous awards within one semester. She hopes to continue her personal and professional development while giving back to the community and impacting the growth of the University of Houston.

Abstract: One of the complex challenges in the unconventional world is the performance of child and parent wells. This study compares and analyzes the performance of 239 child and parent wells in family units and evaluates the impacts of well completion (fracturing) on well performance. The newly proposed analysis based on fracturing stages helps to categorize key well factors and highlight observed discrepancies of child wells performance against the corresponding parent wells conducted on the traditionally employed evaluation method (per lateral well length). Incorporating this analysis into machine-learning models can assist in the drilling and completion planning of new child wells.

TITLE: Child to Parent Well Performance Analysis in Unconventional Reservoirs
AUTHOR: Makpal Sariyeva **AUTHOR EMAIL:** msariyeva@uh.edu
LEVEL: Bachelor of Science in Petroleum Engineering
FACULTY MENTOR(s): Dimitrios G. Hatzignatiou **FACULTY MENTOR EMAIL:** dghatzig@central.uh.edu

This work presents a study on the child to parent well performance analysis based on existing oil production and well data. The objectives are to compare and analyze the performance of child and parent wells in family units and evaluate well completion (i.e., fracturing) impact on well performance, which can assist in drilling and completion planning of new child wells. The analysis is conducted on 239 Eagle Ford Formation oil wells drilled and completed in 12 different counties with a lag time of at least 6 months for a parent well depletion.
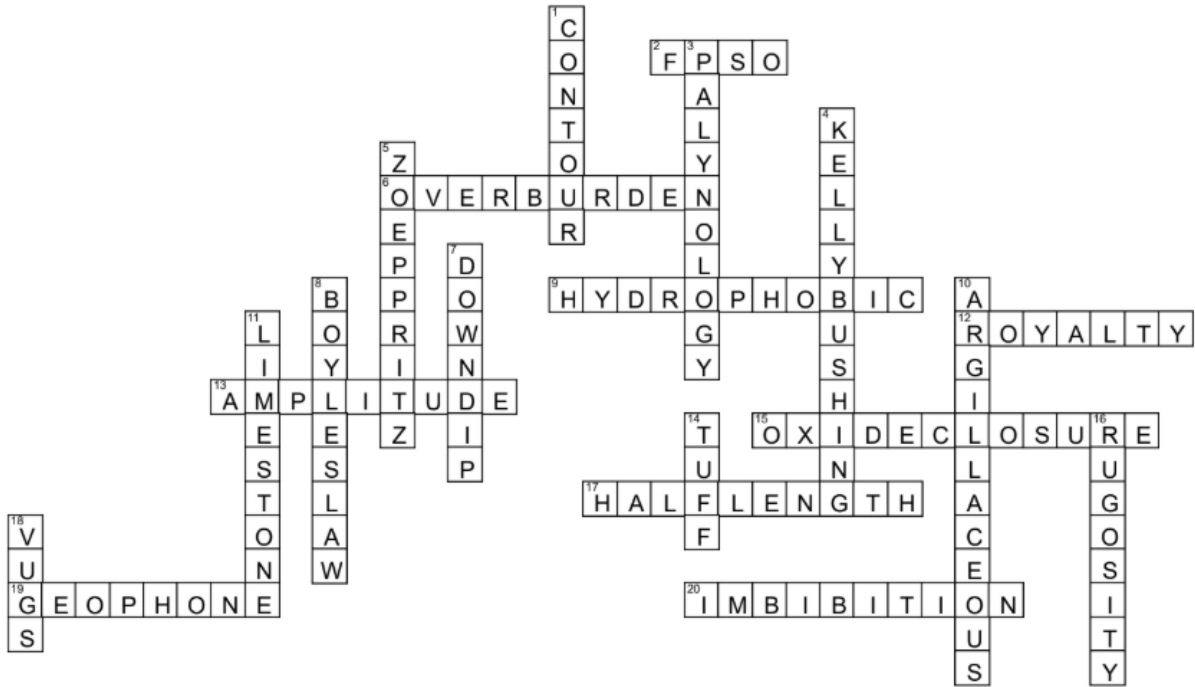
In this study, a child well is defined as an infill well drilled within a 660-ft radius of an existing (parent) well. The performance analysis of child and parent wells is conducted based on two methods. The first method, conventional (traditional) analysis, compares completion data on a well-length basis. Using this method, statistical plots are developed, such as the box plot and the Cumulative Distribution Function (CDF). Primary considerations for the current analysis are the effects of fracture fluid volume and proppant load per well length on the child to parent performance ratio.

A new approach is proposed to analyze the well data based on the well fracturing stages. An analysis is conducted to ascertain well performance and identify key factors that dictate it. Among others, well spacing, number of fracturing stages, well length, proppant load, and fracture fluid volumes are examined.

Our study also reveals that some child wells underperform compared to the parent wells, even though they used more proppant load and fracture fluid volume. Therefore, a further investigation, per frac stage, as mentioned above, is conducted to determine the reasons for underperforming child wells. Factors such as well spacing, number, and quality of fracture stages, well length, etc., are very important parameters, which should be included in the analysis and well performance evaluation. More specifically, for example, child wells drilled on a low-well spacing (40 acres) underperform parent wells, even when drilled on the same well spacing.

The newly proposed analysis helps to categorize these factors and highlight the observed discrepancies of child wells performance against corresponding parent wells conducted on the traditionally employed evaluation method. The results of this study will be valuable in the optimization of future unconventional oil wells and field development/exploitation.

Across and Down solution grid:

- 1 CONTOUR (down)
- 2 FPSO (across)
- 3 PALYNOLOGY (down)
- 4 KELLY (down)
- 5 ZOEPPRITZ (down)
- 6 OVERBURDEN (across)
- 7 DOWNDIP (down)
- 8 BOYESLAW (down)
- 9 HYDROPHOBIC (across)
- 10 ARGILLACEOUS (down)
- 11 LIMESTONE (down)
- 12 ROYALTY (across)
- 13 AMPLITUDE (across)
- 14 TUFF (down)
- 15 OXIDE (across)
- 16 RUGOSITY (down)
- 17 HALFLENGTH (across)
- 18 VUGS (down)
- 19 GEOPHONE (across)
- 20 IMBIBITION (across)

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