

The integrated event for unconventional resource teams

**Optimize Your
Unconventional
Resource Plays**



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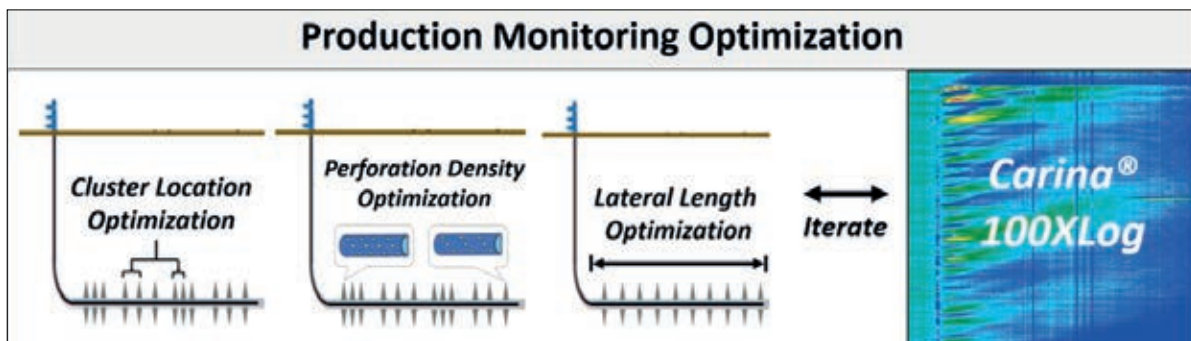


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SPONSORING ORGANIZATIONS:



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WELCOME TO URTeC 2021

LETTER FROM THE CO-CHAIRS

Dear Friends,

Welcome to URTeC 2021. Whether you're reading this letter in the printed program guide or as a PDF online, we're very happy to have you with us. Our hybrid event will mark the first time many of us will be together in-person since the close of URTeC 2019 – nearly two years ago. And while we're thrilled to be delivering great content and networking both in Houston and online, we're particularly excited about getting back to business, greeting old friends, and catching up on our experiences in the session rooms, exhibit hall, hotels, and area restaurants.

The program this year is as diverse and strong as ever. In fact, the hybrid format allowed our theme committees to select and retain the highest scoring talks regardless of a speaker's ability to travel. This means you'll experience and have access to more than 250 presentations focused on collaboration and integration between the subsurface G&G disciplines, geomechanics, formation evaluation, wellhead design, completion design, enhanced recovery, production forecasting and the environmental, social, and corporate governance factors that will help you achieve long-term success.

The exhibition is strong with 140+ companies in the convention center and online – featuring the latest in technology and services to help you safely produce more for less with an eye to environmental stewardship. The new online platform – accessible to all conference registrants – includes enhanced options to request meetings and personal demos whether you're in the exhibit hall or in the office. Be sure to create a personal profile and use the platform for maximum benefit. In addition, a mix of topical breakfast and lunch talks will be available whether you eat at your desk or want to grab a bite between sessions at the Brown.

We should note that URTeC will occupy a new space in the calendar in 2022 – 20–22 June in Houston. As you know, the industry's events schedule has changed significantly post-covid and the new timing will help us avoid conflicts with other important events. Please mark the dates and plan to speak and/or attend.

URTeC is a forum where pros engaged in all aspects of the E&P lifecycle come together to innovate, integrate, and advance understanding to create value. This conference remains the best opportunity you'll have to exchange information, formulate strategic ideas, and solve problems to manage and optimize your unconventional resource plays.

Thank you for attending. We hope you'll enjoy the conference – whether onsite or online.

Sincerely,

Technical Program Co-Chairs



Jay Stratton (SPE)
Ultra Petroleum



Stephanie Perry (AAPG)
GeoMark Research Ltd.



Scott Singleton (SEG)
*Independence Resources
Management*



Johannes Alvarez
(SPE Elect)
Chevron

TECHNICAL PROGRAM COMMITTEE

THEME CHAIRS

Robert Hull, Consultant, Theme 1: Operators' Forum: Case Studies Highlighting the Multidisciplinary Approach to Exploration, Appraisal, Pilot Tests, and Development of Unconventional Resources

Craig Cipolla, Hess Corporation, Theme 1: Operators' Forum: Case Studies Highlighting the Multidisciplinary Approach to Exploration, Appraisal, Pilot Tests, and Development of Unconventional Resources

Alejandro Lerza, Chevron, Theme 1: Operators' Forum: Case Studies Highlighting the Multidisciplinary Approach to Exploration, Appraisal, Pilot Tests, and Development of Unconventional Resources

Kathryn Dianiska, Oxy, Theme 1: Operators' Forum: Case Studies Highlighting the Multidisciplinary Approach to Exploration, Appraisal, Pilot Tests, and Development of Unconventional Resources

Katerina Yared, SM Energy, Theme 2: Advanced Formation Evaluation of Unconventional Reservoirs

Carrie Glaser, Willamette Petrophysics, Theme 2: Advanced Formation Evaluation of Unconventional Reservoirs

Patricia Rodrigues, SeisPetro, Theme 2: Advanced Formation Evaluation of Unconventional Reservoirs

Mathilde Luyckx, ExxonMobil, Theme 2: Advanced Formation Evaluation of Unconventional Reservoirs

Matthew Poole, Shell Exploration and Production Company, Theme 3: Geological Characterization and Evaluation Spanning the E&P Lifecycle

Barbara Hill, Schlumberger, Theme 3: Geological Characterization and Evaluation Spanning the E&P Lifecycle

Don Walker, EP Energy, Theme 3: Geological Characterization and Evaluation Spanning the E&P Lifecycle

Andrew Munoz, Ensign Natural Resources, Theme 4: Geophysical Unconventional Reservoir Analysis

Marianne Rauch, TGS, Theme 4: Geophysical Unconventional Reservoir Analysis

Austin Bailey, Cimarex, Theme 4: Geophysical Unconventional Reservoir Analysis

Robert Hurt, Pioneer Natural Resources, Theme 5: Geomechanics – The Intersection of Geoscience and Engineering

Ahmad Ghassemi, University of Oklahoma, Theme 5: Geomechanics – The Intersection of Geoscience and Engineering

Laurent Louis, NER, Theme 5: Geomechanics – The Intersection of Geoscience and Engineering

Chris Ginn, Oxy, Theme 5: Geomechanics – The Intersection of Geoscience and Engineering

John Curtis, GeoMark Research Ltd., Theme 6: Applied Geochemistry for Unconventionals: From Source Rock to Produced Hydrocarbons

Eric Michael, ConocoPhillips, Theme 6: Applied Geochemistry for Unconventionals: From Source Rock to Produced Hydrocarbons

Jason Jweda, ConocoPhillips, Theme 6: Applied Geochemistry for Unconventionals: From Source Rock to Produced Hydrocarbons

Craig Barrie, GeoMark Research, Theme 6: Applied Geochemistry for Unconventionals: From Source Rock to Produced Hydrocarbons

Birol Dindoruk, University of Houston, Theme 7: Machine Learning, AI and Big Data in the Digital Oilfield

Mariano Gurfinkel, Marathon Oil, Theme 7: Machine Learning, AI, and Big Data in the Digital Oilfield

Michael Ashby, Devon Energy Contracted, Theme 7: Machine Learning, AI, and Big Data in the Digital Oilfield

Sebastien Matringe, Hess Corporation, Theme 7: Machine Learning, AI, and Big Data in the Digital Oilfield

George Koperna, Advanced Resources International, Inc., Theme 8: Unlocking the Production and Recovery Potential of Unconventionals

Autumn Shannon, Marathon Oil, Theme 8: Unlocking the Production and Recovery Potential of Unconventionals

Hosein Kalaei, ConocoPhillips, Theme 8: Unlocking the Production and Recovery Potential of Unconventionals

Didi Ooi, Oxy, Theme 8: Unlocking the Production and Recovery Potential of Unconventionals

Susan Howes, Subsurface Consultants & Associates, LLC, Theme 9: Reserves Estimation and Production Forecasting

Alexsandra Martinez, DeGolyer and MacNaughton, Theme 9: Reserves Estimation and Production Forecasting

Katie Essary, Chevron, Theme 9: Reserves Estimation and Production Forecasting

David Hume, Independent Consultant, Theme 10: New Materials, Innovative Technologies as Applied to Unconventionals

Alice Hildick, FractureID, Theme 10: New Materials, Innovative Technologies as Applied to Unconventionals

Denise Benoit, Halliburton, Theme 10: New Materials, Innovative Technologies as Applied to Unconventionals

Bin Yuan, China University of Petroleum, Theme 11: International and Emerging Challenges of Unconventional Resources: Integrated Geoscience and Engineering

Ali Sloan, Parsley Energy, Theme 11: International and Emerging Challenges of Unconventional Resources: Integrated Geoscience and Engineering

David Livasy, Parsley Energy, Theme 11: International and Emerging Challenges of Unconventional Resources: Integrated Geoscience and Engineering

Luis Baez, Shell Exploration and Production Company, Theme 12: Business of Unconventional Plays

Doug Valteau, Strategia Innovation and Technology Advisors, Theme 12: Business of Unconventional Plays

Kelly Bott, Ultra Petroleum, Theme 13: Sustainability, Rapid Industry Change, and the Social License to Operate

Erika Tokarz, Theme 13: Sustainability, Rapid Industry Change, and the Social License to Operate

Susan Nash, AAPG, Theme 13: Sustainability, Rapid Industry Change, and the Social License to Operate

Walker Dimmig, Darcy Partners, Theme 13: Sustainability, Rapid Industry Change, and the Social License to Operate

SUBCOMMITTEE CHAIRS

Skip Rhodes, Pioneer Natural Resources, Opening Plenary Session

Doug Valteau, Strategia Innovation and Technology Advisors, Opening Plenary Session

Lara Heister, TiPS, Panels and Invited Sessions

Isaac Aviles, Schlumberger, Panels and Invited Sessions

Susan Nash, AAPG, Panels and Invited Sessions

Amit Singh, Chevron, Panels and Invited Sessions

Scott Reeves, Gas Technology Institute, Panels and Invited Sessions

Brian Driskill, Shell, Panels and Invited Sessions

Kanar Jerath, Oxy, Panels and Invited Sessions

Chris Ginn, Oxy, Panels and Invited Sessions

Stephanie Perry, GeoMark Research Ltd., Topical Breakfasts and Luncheons

Diego Molinari, Xecta Digital Labs, Topical Breakfasts and Luncheons

Liang Xu, Evonik, Topical Breakfasts and Luncheons

Rex Griffin, UP Energy, Technology Committee

Alexsandra Martinez, DeGolyer and MacNaughton, Technology Committee

Rick Walker, Retired, Technology Committee

Ali Sloan, Parsley Energy, Core Workshop

David Livasy, Parsley Energy, Core Workshop

Barbara Hill, Schlumberger, Core Workshop

Dawn Hayes, Consulting, Core Workshop

GENERAL INFORMATION

ON-SITE REGISTRATION

Location: Exhibit Hall D (Street Level)

Saturday	12:00 pm–5:00 pm
Sunday	9:00 am–5:00 pm
Monday	6:30 am–5:30 pm
Tuesday	6:30 am–5:30 pm
Wednesday	6:30 am–1:00 pm

EXHIBITION HALL HOURS

Location: Exhibit Hall E

Monday	10:00 am–6:00 pm
Tuesday	9:00 am–6:00 pm
Wednesday	9:00 am–1:00 pm

SPEAKER SERVICE CENTER

Location: Room 350 D/E

Sunday	12:00 pm–5:00 pm
Monday	7:00 am–5:00 pm
Tuesday	7:00 am–5:00 pm
Wednesday	7:00 am–4:00 pm

FIRST AID

Location: Hall E Lobby

Saturday	9:00 am–5:00 pm
Sunday	9:00 am–6:00 pm
Monday	7:00 am–7:00 pm
Tuesday	7:00 am–7:00 pm
Wednesday	7:00 am–1:00 pm

LUGGAGE CHECK

Location: Near Registration in Exhibit Hall D

Wednesday	7:00 am – 5:30 pm
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Items checked will be at \$5.00 per item.

FedEx OFFICE

Location: Mezzanine Level 2
Days: Monday–Friday
Hours: 8:00 am–5:00 pm

From packing and shipping to signage, copying and last-minute office supplies, the FedEx Office Print & Ship Center offers virtually everything you require to meet your needs. For further information, contact 713 658 1899 or usa5000@fedex.com.

LOST AND FOUND

Location: Registration, Exhibit Hall D

Items found during the conference should be turned in to URTEC Show Management personnel, location in Registration. If your lost items have not been turned in, you can leave contact information at Registration.

SOCIAL MEDIA

Make sure to follow URTEC on Facebook, Twitter, and LinkedIn to stay connected and to get the latest updates on what's happening during the event. Use #URTEC2021 to join the discussion online.

Download the URTEC 2021 App

Available for both iOS and Android devices, the URTEC 2021 App provides you with all the vital conference information in the palm of your hand. Download for free today.

NO-ELECTRONIC CAPTURING POLICY

Capturing or photographing contents of Exhibit Displays, Technical Sessions, or Exhibit Hall Technical Sessions is strictly prohibited.

NO SMOKING POLICY

Smoking is prohibited at the George R. Brown Convention Center.

CODE OF CONDUCT

The Unconventional Resources Technology Conference (URTEC) is conducted for the benefit of its members and interested parties to advance the science of geology, geophysics, and engineering, to promote technology, and facilitate networking and collaboration between professionals. URTEC values the participation of its members and guests and wants all URTEC attendees to have an enjoyable and fulfilling experience.

Accordingly, URTEC is dedicated to providing a harassment-free conference experience for everyone, regardless of gender, sexual orientation, disability, physical appearance, body size, race, or religion. We do not tolerate harassment of conference participants in any form. All attendees are expected to show respect and courtesy to other attendees throughout the conference and at all conference events, whether officially sponsored by URTEC or not.

If a participant engages in behavior that violates this code of conduct, URTEC reserves the right to take any action deemed appropriate, including warning the offender(s) or expelling the offender(s) from the convention with no refund. URTEC's complete URTEC anti-harassment policy can be found at URTEC.org/2021/Code-of-Conduct.

Reporting

If you have questions or concerns, please notify a badged URTEC staff member or call +1 800 898 2274. You can communicate with us anonymously at www.urtec.org/carereport

ONLINE DIGITAL PLATFORM INFORMATION

Login Information

URTeC 2021 attendees are welcomed and encouraged to login use the online digital platform to view all sessions, presentations, exhibitor/sponsor information, and to connect with your fellow colleagues and business relationships.

Please note, your unique access link to the online digital platform will be emailed to you three days before the start of the event. You will need to retain this email to access the platform. Take time now to log in using your unique link to ensure you have no issues entering the event and to familiarize yourself with the platform features.

On-Demand Content

As an added benefit to URTeC 2021, all content on the online digital platform will be accessible for 30 days after the event through 27 August 2021.

Connect with Exhibitors and Sponsors

Get in touch with exhibitors and sponsors to connect now.

- View company profiles
- Download brochures, videos, and files from exhibitors/sponsors
- Visit company webpages and social media accounts
- Live video chat with exhibitor and sponsor staff
- Schedule meetings and appointments with company representatives throughout the conference

Play Now – 6 Chances to Win

Attendees collect the codes and win big. By playing this Code Collection Game you'll have the chance to win six \$100 Amazon Gift Cards. We will have two gift card drawings each day of the event. Don't miss this opportunity to grab these great prizes.

Here's How to Play:

- Step 1: Log into the URTeC Online Digital Platform
- Step 2: Navigate to the Lobby and look for Collect Codes & Win a Prize.
- Step 3: Start exploring to uncover the hidden codes. All the codes you're looking for can be found in the Exhibitor Booths of the online platform.
- Step 4: Collect the codes and complete the submission form.
- Step 5: Submit your findings.

Need Help?

If you have any questions, concerns, or issues logging into the online digital platform, please contact: helpdesk@sw-online.com.

Unconventional Resource Technologies to **Optimize** Your Unconventional Plays

We cover the crucial elements for your unconventional plays—digital solutions, sustainability, and technology. Don't miss out!

Booth 4521

slb.com

Schlumberger

CONFERENCE AT A GLANCE (AS OF 15 JULY)

SATURDAY

8:00 am–5:00 pm	Short Course 1: Principles of Energy Storage and Carbon Capture Storage and Utilization (AAPG) *
8:00 am–5:00 pm	Short Course 5 (Day 1): Petrophysics and Geophysics Relevant to CO ₂ Enhanced Oil Recovery (SEG)
8:00 am–5:00 pm	Short Course 6 (Day 1): The Geology of Unconventional Reservoirs (SEG) *
8:00 am–5:00 pm	Short Course 7 (Day 1): Understanding Signals: Basic Waveform Analysis from a Geophysical Perspective (SEG) *
12:00 pm–5:00 pm	Registration

SUNDAY

8:00 am–5:00 pm	Short Course 5 (Day 2): Petrophysics and Geophysics Relevant to CO ₂ Enhanced Oil Recovery (SEG)
8:00 am–5:00 pm	Short Course 6 (Day 2): The Geology of Unconventional Reservoirs (SEG) *
8:00 am–5:00 pm	Short Course 7 (Day 2): Understanding Signals: Basic Waveform Analysis from a Geophysical Perspective (SEG) *
9:00 am–5:00 pm	Registration

MONDAY

6:30 am–5:30 pm	Registration
8:25 am–10:05 am	Opening Plenary Session: Unconventionals in Transition
10:00 am–6:00 pm	Exhibition
10:00 am–11:00 am	Refreshment Break
10:30 am–12:15 pm	Technical Sessions – In-Person
10:45 am–12:05 pm	Panel Session: The Road Ahead for New Technology Now: Funding and Commercialization
10:45 am–12:05 pm	Special Session: Hydraulic Fracturing Test Site-2 Part I
10:45 am–12:05 pm	Special Session: ConocoPhillips Unconventional Reservoirs and Technology Showcase
10:45 am–5:30 pm	Technical Sessions – Online *
12:15 pm–1:30 pm	Topical Luncheon: Chevron Permian Asset Optimization: Overview of Chevron's Strategy of Leading Performance
12:15 pm–1:30 pm	Topical Luncheon: Spacing Ourselves to Death
1:45 pm–3:25 pm	Panel Session: Implementing New Technologies in the Field: How Companies are Approaching it in 2021 and Beyond
1:45 pm–3:30 pm	Special Session: Hydraulic Fracturing Test Site-2 Part II
1:45 pm–5:25 pm	Technical Sessions – In-Person
3:00 pm–4:00 pm	Refreshment Break
4:05 pm–5:25 pm	Panel Session: Data Issues: Management, Integrity, Legacy
4:05 pm–5:25 pm	Special Session: Hydraulic Fracturing Test Site-2 Part III
5:00 pm–6:00 pm	Opening Reception

TUESDAY

6:30 am–5:30 pm	Registration
7:00 am–8:15 am	Topical Breakfast: Practical Aspects of Core/Log Integration in Organic Mudstones
7:00 am–8:15 am	Topical Breakfast: Charting a Course – Oilfield Services, Technologies, Trends, and the Impact on Domestic Producers
7:00 am–8:15 am	Topical Breakfast: PE Opportunity Space in Upstream, Midstream, and Renewables and What Critical Assessments You Look for or Target for Possible Investment and Why
8:25 am–10:05 am	Panel Session: ESG in Action: Flare Reduction, Leak Detection, Logistics, Blended Solar / Geothermal / Wind Electricity Generation Projects, Social License to Operate
8:25 am–10:10 am	Special Session: Hydraulic Fracturing Test Site-2 Part IV
8:25 am–10:10 am	Special Session: Best of ARMA
8:25 am–11:40 am	Technical Sessions – In-Person
8:25 am–5:30 pm	Technical Sessions – Online *
9:00 am–6:00 pm	Exhibition
10:00 am–11:00 am	Refreshment Break
10:45 am–12:05 pm	Panel Session: Sensors, Automation, and Smart Digital Operations: Where We are and the Road Ahead
10:45 am–12:05 pm	Special Session: Hydraulic Fracturing Test Site-2 Part V
12:15 pm–1:30 pm	Topical Luncheon: Future of Unconventionals – Geoscience and Engineering Aspects
12:15 pm–1:30 pm	Topical Luncheon: Energy 4.0: How to Design a Future-Proof Digital Asset that Hits the Financial Bottomline *
12:15 pm–1:30 pm	Topical Luncheon: ESG: A Different Take *
12:15 pm–1:30 pm	Topical Luncheon: Exploration and Inventory Assessment in the Age of Capital Efficiency and Free Cash Flow
1:45 pm–3:25 pm	Panel Session: Learning From Other Industries: A Geothermal Conversation
1:45 pm–3:30 pm	Special Session: EOR: Best of Tulsa – Recovery Improvement of Unconventional/Tight Systems
1:45 pm–3:30 pm	Special Session: ConocoPhillips: Optimizing Through Completion Design and Production Analysis
1:45 pm–5:25 pm	Technical Sessions – In-Person
3:00 pm–4:00 pm	Refreshment Break
4:05 pm–5:25 pm	Panel Session: Supply Chains in Energy: Cost Savings, Quality Assurance, 3-D Printing, Ethical Sourcing
5:00 pm–6:00 pm	Networking Reception

* = Online only

WEDNESDAY

6:30 am–1:00 pm	Registration
7:00 am–8:15 am	Topical Breakfast: Investigation of Multiple Formations in the Midcontinent for CO ₂ Storage Potential Through the Acquisition and Analysis of over 700 ft of Whole Core
7:00 am–8:15 am	Topical Breakfast: The Great Transition? *
7:00 am–8:15 am	Topical Breakfast: Present and Future Technological Challenges in the Formation Evaluation of Unconventional Sources of Subsurface Energy
7:00 am–8:15 am	Topical Breakfast: Hess In The Bakken: Lean and Innovation Driving the Next Stage of Development *
8:25 am–10:05 am	Panel Session: Assessing Risk and Evaluating Opportunities from Different Perspectives
8:25 am–10:10 am	Special Session: DOE Fundamental Shale Research Program I
8:25 am–10:15 am	Special Session: Best of URTeC Latin America I *
8:25 am–12:05 pm	Technical Sessions – In-Person
9:00 am–1:00 pm	Exhibition
10:00 am–11:00 am	Refreshment Break
10:45 am–12:05 pm	Panel Session: Earth's Surface Imaging for Pivoting: Affordable Drones and Satellite Imaging for Geological Exploration and Operations, Environmental Monitoring and Energy Utilization
10:45 am–12:05 pm	Special Session: DOE Fundamental Shale Research Program II
10:45 am–12:15 pm	Special Session: Best of URTeC Latin America II *
10:45 am–12:15 pm	Technical Sessions – Online *
12:15 pm–1:30 pm	Topical Luncheon: Promoting Cased Hole Formation Evaluation (CHFE) as an Alternative to Openhole Logging for Completion Design in Horizontal Wells *
12:15 pm–1:30 pm	Topical Luncheon: Casing Damage and Hydraulic Fracturing: Geomechanical Perspectives
12:15 pm–1:30 pm	Topical Luncheon: B Minus – Must Try Harder: Some Thoughts on the Current State of the Art in Unconventional Play and Reservoir Evaluation
12:15 pm–1:30 pm	Topical Luncheon: BPX Energy: Technical Evolution Through Applied Physical Analytics
1:45 pm–3:25 pm	Panel Session: The New Way to Work: Digital Platforms, Cloud-Based Collaborations, and Ecosystems
1:45 pm–3:30 pm	Special Session: Best of SPWLA
1:45 pm–3:30 pm	Special Session: Carbon Capture, Utilization, and Storage (CCUS) I *
1:45 pm–5:10 pm	Technical Sessions – In-Person
3:30 pm–3:50 pm	Refreshment Break
3:50 pm–5:10 pm	Panel Session: Global Unconventionals
3:50 pm–5:30 pm	Special Session: Carbon Capture, Utilization, and Storage (CCUS) II *

THURSDAY

8:00 am–5:00 pm	Short Course 13: Methane Emission Measurement and Mitigation (MEMM) (SPE) *
8:00 am–5:00 pm	Short Course 16 (Day 1): Gas EOR in Tight Unconventionals (SPE) *
8:00 am–5:00 pm	Short Course 17 (Day 1): Reservoir Engineering Applications of Advanced Data Analytics and Machine Learning Algorithms (SPE) *

FRIDAY

8:00 am–5:00 pm	Short Course 16 (Day 2): Gas EOR in Tight Unconventionals (SPE) *
8:00 am–5:00 pm	Short Course 17 (Day 2): Reservoir Engineering Applications of Advanced Data Analytics and Machine Learning Algorithms (SPE) *



Purchase your Topical Breakfast and Luncheon tickets at registration.
Tickets are limited and required for admission.



CONFERENCE HIGHLIGHTS

• **MONDAY** •

• **TUESDAY** •

• **WEDNESDAY** •

• **NETWORKING OPPORTUNITIES** •

• **SHORT COURSES** •

MONDAY CONFERENCE HIGHLIGHTS



Purchase your Topical Breakfast and Luncheon tickets at registration.
Tickets are limited and required for admission.

OPENING PLENARY SESSION

Unconventionals in Transition

Time: 8:25 am–10:05 am
Location: In-Person – George R. Brown Convention Center, General Assembly
Co-Chairs: Skip Rhodes and Doug Valleau

The 2020 pandemic combined with production quota volatility and demand for free cash flow generation created a perfect storm for the unconventional sector. As the industry recovers, the next five years offers something for both the pessimist and the optimist. This ninth offering of URTEC opens with a distinguished group of plenary speakers to help illuminate the drivers that will affect this era of transition.

The vision for unconvensionals will be about developing technology and a culture to support a sustainable energy future globally. The challenge facing operators is how to keep providing affordable energy at a reasonable return while transitioning their business to meet the demands of a carbon-neutral future. Investors and shareholders are voicing expectations regarding demonstrable commitment to a broad spectrum of Environmental, Social, and Corporate Governance (ESG) issues. For traditional energy companies, the importance of (ESG), combined with implementation of technology and innovation that reduce greenhouse gases are key factors that will shape oil market investment and outcomes in 2021 and beyond. To implement this vision requires engagement by the brightest talent and an adventurous workforce to level the hurdles and deliver at or above expectations. During this URTEC program, you will gain additional insight and even some possible solutions to the challenges of Unconventionals in Transition.



Hollub



Brackett



Tinker



Sweek

Speakers:

- **Occidental's Path to Carbon Neutrality**
Vicki Hollub, President and Chief Executive Officer, Occidental
- **Social Engineering Meets Petroleum Engineering – Goals Versus Realities for Today's Energy Sector**
Bob Brackett, Senior Vice President and Senior Research Analyst, Sanford C. Bernstein
- **The Real Global Energy Transition: From Poverty to Prosperity**
Scott W. Tinker, Director, Bureau of Economic Geology, State Geologists of Texas; Professor, Edwin Allday Endowed Chair in Subsurface Geology, Jackson School
- **Outrun the ESG Bear or Just the Company Next to You?**
Jeremy Sweek, Co-Founder and Managing Partner, Darcy Partners

PANEL SESSIONS

The Road Ahead for New Technology Now: Funding and Commercialization

Time: 10:45 am–12:05 pm
Location: In-Person – George R. Brown Convention Center, General Assembly
Moderator: Susan Nash

How have technology needs changed in response to low price and operating environments? Where are investment, early stage adoption, and commercialization efforts going? What have we learned and where are we going? This panel looks at technology, finance, and strategic factors and case studies.

Panelists:

- **John Thurmond**, Principal Advisor – Geoscience (Emerging Technology), Hess
- **Taha Hussain**, Venture Partner, Delek US
- **Stuart Coleman**, Venture Principal, Chevron
- **Sudhir Pai**, Director, Technology Collaboration Center

Implementing New Technologies in the Field: How Companies are Approaching it in 2021 and Beyond

Time: 1:45 pm–3:30 pm
Location: In-Person – George R. Brown Convention Center, General Assembly
Moderator: Amit Singh

Panelists evaluate the processes by which companies scout, evaluate, and test technologies in operations and the field.

Panelists:

- **Amy Henry**, Chief Executive Officer, Eunike Ventures
- **Scott Neal**, Director / Tight Assets, Chevron
- **Sunil Garg**, Chief Executive Officer, DataVedik
- **Shunhua Liu**, Director, Unconventional Engineering Technology, Oxy

Data Issues: Management, Integrity, Legacy

Time: 4:05 pm–5:25 pm
Location: In-Person - George R. Brown Convention Center, General Assembly (Speakers presenting via Zoom)
Moderator: Isaac Aviles

Panelists review the kinds of data management challenges they have had to work with in the last 24 months, and the strategies that have worked for them. Issues of data standards, integrating legacy information with new data, and challenges associated with the merger of two companies are just some of the topics that will be tackled.

Panelists:

- **Philip Neri**, Director of Marketing, Energistics
- **Eduardo Zavala**, Senior Director of Business Transformation, Delek
- **Kim Padeletti**, OSDU, Amazon
- **Phillip Jong**, OSDU Director, Shell
- **Junxuan Fan**, Secretary General, Deeptime Digital Earth
- **Jamie Cruise**, Digital Subsurface Product Manager, Schlumberger

MONDAY CONFERENCE HIGHLIGHTS



Purchase your Topical Breakfast and Luncheon tickets at registration.
Tickets are limited and required for admission.

SPECIAL SESSIONS

Hydraulic Fracturing Test Site- 2 Part I, II, and III

Time: 10:45 am–5:35 pm

Location: In-Person – George R. Brown Convention Center, Room 360

Co-Chairs: Vinay Sahni and Gary Covatch

The Hydraulic Fracturing Test Site (HFTS) Program is a research and development (R&D) partnership sponsored by the U.S Department of Energy, National Energy Technology Laboratory (DOE-NETL) and major and independent operator and service companies, managed by the Gas Technology Institute (GTI). The objectives of the HFTS program are to diagnose and understand the hydraulic fracturing process for field development optimization in Unconventional Resources, minimize their environmental impacts by reducing the number of new wells required for effective resource recovery, and improve extraction economics to expand the economically viable resource at increasingly lower commodity prices. A unique aspect of the test sites is the drilling of research wells dedicated to coring through the created hydraulic fractures thus directly measuring fracture locations, fracture quantity, proppant concentrations and other data.

There are currently two test sites in the program, both in the Permian Basin. HFTS-1, operated by Laredo Petroleum, is located in the Midland Sub-Basin, and was the subject of an URTEC Invited Session in 2018. HFTS-2, operated by Occidental Petroleum, is in the Delaware Sub-Basin. Since results of the R&D are confidential to the program sponsors for a period of 2 years, early results from HFTS-2 are just now becoming publicly available and will be the subject of the presentations in this session.

Speakers:

- **Overview of the Hydraulic Fracturing Test Site 2 (HFTS-2) in the Permian Delaware Basin**
Jordan Ciezobka, GTI
- **Subsurface Characterization of Hydraulic Fracturing Test Site – 2 (HFTS-2), Delaware Basin**
Fadila Bessa, Occidental
- **Fracture Description of the HFTS-2 Slant Core, Delaware Basin, West Texas**
Julia Gale, The University of Texas at Austin
- **Microseismic at HFTS2: A Story of Three Stimulated Wells**
Bo Howell, Borehole Seismic
- **Mechanism of Microseismic Generation During Hydraulic Fracturing – With Evidence from HFTS 2 Observations**
Yunhui Tan, Chevron
- **HFTS-2 Completions Design and State-of-the-Art Diagnostics Results**
Matt Jones, Occidental
- **An Integrated View of Hydraulic Induced Fracture Geometry in Hydraulic Fracture Test Site 2**
Gustavo Ugueto, Shell Exploration & Production Company
- **Hydraulic fracture characterization by integrating multidisciplinary data from the Hydraulic Fracturing Test Site 2 (HFTS-2)**
Zhishuai Zhang, Chevron Technical Center
- **Analysis of Completion Design Impact on Cluster Efficiency and Pressure-Based Well Communication in HFTS-2 Delaware Basin**
Andrea Vissotski, Chevron

ConocoPhillips: Unconventional Reservoirs and Technology Showcase

Time: 10:45 am–12:05 pm

Location: In-Person – George R. Brown Convention Center, Room 351

Co-Chairs: Evan Lamoreux, David Jones, Robert Hull, and Jim Hnat

In this session ConocoPhillips will provide an overview of their best-in-class Unconventional Portfolio as well as the key technologies and strategies to develop and optimize these assets. ConocoPhillips will also highlight key takeaways and the interrelationships that can be drawn between the various technical papers that will be shared in the technical sessions.

Speakers:

- **Michael Hatfield**, Chief Technology Officer and Senior Vice President, Global Technical Functions, ConocoPhillips
- **Jack Harper**, President Permian, ConocoPhillips
- **David Forbes**, General Manager Global Wells, ConocoPhillips
- **Ed Connelly**, General Manager Global Production, ConocoPhillips
- **Wendy King**, Vice President Gulf Coast, ConocoPhillips

TOPICAL LUNCHEONS

Chevron Permian Asset Optimization: Overview of Chevron's Strategy of Leading Performance



Time: 12:15 pm–1:30 pm

Location: In-Person – George R. Brown Convention Center, Room 342

Fee: \$65

Speaker: **Jennifer Wilding**, Portfolio Development Manager, Midcontinent, Chevron

This topical luncheon will showcase Chevron's strategy of leading performance through behaviors and competitive performance to strive for higher returns and lower carbon. The luncheon will review high-level development strategy including a review of past performance and future predictions within Permian Basins, integrated modeling, data analysis, and continuous learning.

Spacing Ourselves to Death



Time: 12:15 pm–1:30 pm

Location: In-Person – George R. Brown Convention Center, Room 381

Fee: \$65

Speaker: **Justin Hayes**, Vice President Reservoir Engineering and Analytics, Bedrock Energy Partners

Unconventional resources require just as much effort on economics as they do on subsurface understanding. Practices to simplify the corporate financial and subsurface models for the purpose of communicating between teams have led companies to make suboptimal decisions. Those decisions have severely impacted corporate returns. An integrated methodology will better serve unconventional E&Ps and their investors.

TUESDAY CONFERENCE HIGHLIGHTS

TOPICAL BREAKFASTS

Practical Aspects of Core/Log Integration in Organic Mudstones and How it Impacts Business Decisions and Overall Cost of Value of Information



Time: 7:00 am–8:15 am
Location: In-Person – George R. Brown Convention Center, Room 382
Fee: \$40
Speaker: **Joe Comisky**, Senior Technical Advisor for Petrophysics, Devon Energy

This talk will present several workflows and observations I use when reducing all of the various physical and chemical measurements we make in the lab to the properties sensed by the downhole logging tools. This approach also effectively identifies potential conflicts between cores and logs when one series of measurements may be compromised.

Charting a Course – Oilfield Services, Technologies, Trends, and the Impact on Domestic Producers



Time: 7:00 am–8:15 am
Location: In-Person – George R. Brown Convention Center, Room 381
Fee: \$40
Speaker: **Stephen Ingram**, Vice President South Central Area USA, Halliburton

Within this discussion, the presenter will outline major choices Halliburton took during the impacted period of 2019 and 2020. Leveraging technologies to improve service delivery and client solutions. Topics will include but not be limited to simultaneous fracturing techniques, alternative power solutions, smart fracturing methods and the increasing role of digitalization within the sector.

PE Opportunity Space in Upstream, Midstream, and Renewables and What Critical Assessments You Look for or Target for Possible Investment and Why



Time: 7:00 am–8:15 am
Location: In-Person – George R. Brown Convention Center, Room 342
Fee: \$40
Speaker: **Basak Kurtoglu**, Senior Vice President – Technical Reservoir and Technology Quantum EP

See URTeC.org for details.

PANEL SESSIONS

ESG in Action: Flare Reduction, Leak Detection, Logistics, Blended Solar / Geothermal / Wind Electricity Generation Projects, Social License to Operate

Time: 8:25 am–10:15 am
Location: In-Person – George R. Brown Convention Center, General Assembly
Moderator: Katerina Yared

How are ESG guidelines shaping decision-making in companies? The panel will discuss specific examples of the adoption of new technology to eliminate flaring, blend energy sources, and make decarbonization possible and economically viable. Also discussed is RSG – responsibly sourced gas.

Panelists:

- **Steve Dyer**, Wells Production Systems Domain Head, Schlumberger
- **Anna Scott/Charlie Losche**, President, Project Canary
- **Vanessa Ryan**, Manager of Carbon and Climate Policy, Chevron
- **Biröl Dindoruk**, Professor, University of Houston
- **Hamed Soroush**, President, PETROLERN LLC
- **Vanessa Ryan**, Manager of Carbon and Climate Policy, Chevron

Sensors, Automation, and Smart Digital Operations: Where We are and the Road Ahead

Time: 10:45 am–12:05 pm
Location: In-Person – George R. Brown Convention Center, General Assembly
Moderator: David Hume

New uses of sensors and integrated analytics are making it possible to dramatically improve efficiency and to change the way that work is done. The panel will discuss new directions, examples that they have observed, and how they view the road ahead.

Panelists:

- **Alex Nikulin**, Aletair
- **Bear Givhan**, Earthview
- **David Thul**, Founder, Geolumina
- **David Tonner**, President, Diversified Well Logging
- **Aaron Lazarus**, Chief Scientist, Pioneer Natural Resources

Learning from Other Industries: A Geothermal Conversation

Time: 1:45 pm–3:30 pm
Location: In-Person - George R. Brown Convention Center, General Assembly (Speakers presenting via Zoom)
Moderator: Isaac Aviles

Panelists with strong geothermal backgrounds will discuss the synergies and know-how that the oilfield can bring in developing the geothermal industry.

Panelists:

- **Ahmad Ghassemi**, University of Oklahoma
- **Joseph Moore**, Utah FORGE
- **Mukul Sharma**, University of Texas at Austin
- **Tim Latimer**, Chief Executive Officer, Fervo Energy
- **Danny Rehgl**, Partner, Criterion

TUESDAY CONFERENCE HIGHLIGHTS

Supply Chains in Energy: Cost Savings, Quality Assurance, 3-D Printing, Ethical Sourcing

Time: 4:05 pm–5:25 pm
Location: In-Person – George R. Brown Convention Center, General Assembly
Moderator: Carrie Glaser

As workflows are automated and new kinds of energy technologies are implemented, supply chain issues come to the forefront. Panelists will discuss some of the most prominent advances in supply chain practice, including provenance, authenticity assurance, blockchain, automation, multiple sourcing, and 3-D printing.

Panelists:

- **Anna Scott**, President, Project Canary
- **Don Herman**, Director of Business Development, Cordax
- **Jennifer Guo**, General Manager Upstream, Chevron
- **Rani Puranik**, Co-Owner, Worldwide Oilfield Machine
- **Laura Capper**, President, EnergyMakers Advisory Group

SPECIAL SESSIONS

Best of ARMA

Time: 8:25 am–10:10 am
Location: In-Person – George R. Brown Convention Center, Room 370
Co-Chairs: John McLennan and Ahmad Ghassemi

ARMA, the American Rock Mechanics Association, enfranchises specialists in all surface and subsurface rock engineering disciplines – from tunneling to mine design to drilling, hydraulic fracturing, subsidence, and seismicity assessment. Membership is international, with members from 37 nations. The ARMA Special Session provides insights from four senior practitioners. The theme of the session is application of rock mechanics principles, measurements, and simulations to characterize, comprehend, and exploit in situ mechanical properties, discontinuities, stresses, and treatment parameters.

Speakers:

- **Mitigating Hydraulic Fracture Induced Seismicity**
Shawn Maxwell, Geophysical and Geomechanical Advisor, Ovintiv
- **Hydraulic Fracture Design Needs Beyond Achieving Short-Term Production Metrics**
C. Mark Pearson, President & CEO, Liberty Resources LLC
- **Completions-Induced Casing Deformations in Unconventionals: What We Think We Know**
Neal Nagel, Chief Engineer and Principal, OilField Geomechanics LLC
- **Managing Induced Seismicity on Pre-Existing Faults During Hydraulic Fracture Stimulation**
Dale Walters, RS Energy Consultants Ltd

Hydraulic Fracturing Test Site – 2 Part IV and V

Time: 8:25 am–12:15 pm
Location: In-Person – George R. Brown Convention Center, Room 360
Co-Chairs: Gustavo Ugueto and Jordan Ciezobka
(See page 14 (HFTS-2 Part I, II, and III) for description)

Speakers:

- **Observations and Modeling of Fiber-Optics Strain on Hydraulic Fracture Height Growth in HFTS-2**
Jiehao Wang, Chevron
- **A New Fracture Diagnostic Tool for Unconventionals High Resolution Distributed Strain Sensing via Rayleigh Frequency Shift during Production in Hydraulic Fracture Test 2**
Gustavo Ugueto, Shell Exploration & Production Company
- **A Systematic Interpretation of Subsurface Proppant Concentration from Drilling Mud Returns: Case Study from Hydraulic Fracturing Test Site (HFTS-2) in Delaware Basin**
Debotyam Maity, Gas Technology Institute
- **Analysis and Integration of the Hydraulic Fracturing Test Site – 2 (HFTS-2) Comprehensive Dataset Venkateswaran**
Sriram Pudugramam, Occidental
- **Novel Geochemistry Determined From High Pressure, High Temperature Simulation Experiments of Hydraulic Fracture Test Site 2**
Djuna Gulliver, NETL-DOE
- **Inference of Induced Fracture Geometries Using Fiber-Optic Distributed Strain Sensing in Hydraulic Fracture Test Site 2**
Alexei Savitski, Shell Exploration & Production Company
- **Key Learnings from Hydraulic Fracturing Test Site - 2 (HFTS-2), Delaware Basin**
Yu Zhao, Occidental

ConocoPhillips: Optimizing Through Completion Design and Production Analysis

Time: 1:45 pm–3:30 pm
Location: In-Person – George R. Brown Convention Center, Room 351
Co-Chairs: Yongshe Liu and Robert Hull

ConocoPhillips will present four technical papers in this session that will focus on UR characterization workflows and production performance analysis and optimization.

Speakers:

- **To Reduce or Extend? That is the Question: A Tale of Stage Length Optimization in the Delaware Basin**
Karan Dhuldhoya
- **Well Performance Management – Case Study for Montney**
Vishal Bang
- **The Case for Surfactant Lift in Oil Wells**
Stuart Scott
- **Production Diagnostics with Time Lapse Geochemistry**
Yishu Song

TUESDAY CONFERENCE HIGHLIGHTS

EOR: Best of Tulsa-Recovery Improvement for Unconventional/Tight Systems

Time: 1:45 pm–3:30 pm

Location: In-Person – George R. Brown Convention Center, Room 360

Co-Chairs: Birol Dindoruk, Ram Ratnakar, and Ali Rezaei

This section will air a selected set of papers of Tulsa 2020 IOR symposium in the area of unconventional focusing in recovery improvement and concepts that impact the recovery processes. In this session we have a good mix of papers that span from the basics and fundamentals to all the way to implementation aspects of recovery improvement for unconventional and other permeability challenged systems. Some of the presentations will also focus on lessons learned from the project work.

Speakers:

- **Successful Field Implementation of CO₂ Foam Injection for Conformance Enhancement in the EVSAGU Field in the Permian Basin**
Amit Katiyar
- **A Methodological Workflow for Assessment and Design of Huff and Puff – Hydrocarbon Gas Injection Pilot Test as an EOR Technique for Eagle Ford Shale Oil Reservoirs**
Amanda Baldwin
- **Measurement of Minimum Miscibility Pressure: A State-of-the-Art Review**
Birol Dindoruk
- **Evaluation of Eagle Ford Cyclic Gas Injection EOR: Field Results and Economics HTFS**
Chris Barden

TOPICAL LUNCHEONS

Future of Unconventionals – Geoscience and Engineering Aspects



Time: 12:15 pm–1:30 pm

Location: In-Person – George R. Brown Convention Center, Room 342

Fee: \$65

Speaker: **Tom Blasingame**, Professor, Department of Petroleum Engineering, Texas A&M University

This presentation discusses the geoscience and engineering aspects based on the work of a small study group convened for this purpose as well as a large-scale “crowd-source” effort by the presenter. The presentation covers geology, geophysics, petrophysics, PVT, productions/operations, well spacing/placement, reservoir engineering (Diagnostics, RTA/PTA, Modeling), reserves (DCA), and data analytics topics, as well as the integration of these topics.

Energy 4.0: How to Design a Future-Proof Digital Asset that Hits the Financial Bottom Line



Time: 12:15 pm–1:30 pm

Location: Online

Speaker: **Sanjay Paranj**, Chief Executive Officer, Xecta Digital Labs

Concepts & Framework from a combination of experiences of being a CTO of an upstream operator and the CEO of a digital solutions provider with global scale and reach. The talk will use the unconventional resource experience as backdrop for how to utilize emerging trends in digital technology, create groundbreaking advances in operating models, explore the ongoing drive from executive initiatives who want to embrace digital but often encounter obstacles in execution, and successfully implement an enterprise level change management program where technology could be utilized to reshape business workflows and decision frameworks from the old and traditional to the new and agile.

Environmental, Social, and Corporate Governance: A Different Take



Time: 12:15 pm–1:30 pm

Location: Online

Speaker: **Chris Wright**, Chief Executive Officer and Chairman, Liberty Oilfield Services

Environmental, Social, and Corporate Governance (ESG) has been a topic of extremely high interest of late. The broad idea is for companies to report their policies and action on ESG issues. This talk will give a perspective on this topic based on the simple perspective of bettering human lives.

Exploration and Inventory Assessment in the Age of Capital Efficiency and Free Cash Flow



Time: 12:15 pm–1:30 pm

Location: In-Person – George R. Brown Convention Center, Room 381

Fee: \$65

Speaker: **Harris Cander**, Vice President of Resource Capture, Marathon Oil Company

In 2019, Marathon publically announced the discovery of a >50,000 acre Woodford and Meramec stacked oil play on the eastern edge of the Delaware Basin. The discovery occurred as the onshore U.S. industry had transitioned from an age of growth to an age where investors are demanding free cash flow, capital efficiency, and capital discipline. This change has prompted a reckoning where many companies have had to re-assess their inventories of profitable drilling locations. This talk will cover the key exploration principles and methods that resulted in the discovery, as well as philosophies on early well costs, completions, location of appraisal wells, and the difference between a “bench” and a petroleum flow unit. The example will then be used as a launching pad to provide insight on several broader topics: What is inventory and what are the metrics for quantifying undrilled inventory in an existing area or a new play? How can exploration and appraisal projects compete for capital when compared with mature, high-return assets in the age of capital efficiency and free cash flow?

WEDNESDAY CONFERENCE HIGHLIGHTS

TOPICAL BREAKFASTS

The Great Transition?



Time: 7:00 am–8:15 am
Location: Online
Speaker: **Aprill Nelson**, Vice President, Arcadius Capital

Plan now to hear more on investing in the energy sector in the current environment and on energy transition and suitability. This talk will incorporate thoughts on social issues around clean energy and sustainable workforce concerning company culture education, training, and job development.

Present and Future Technological Challenges in the Formation Evaluation of Unconventional Sources of Subsurface Energy



Time: 7:00 am–8:15 am
Location: In-Person – George R. Brown Convention Center, Room 342
Fee: \$40
Speaker: **Carlos Torres-Verdin**, Formation Evaluation Department Chair, University of Texas at Austin

This presentation will summarize the state-of-the-art in the formation evaluation of unconventional subsurface resources, with emphasis on measurement technology and integrated interpretation approaches. Examples of contemporary applications will be complemented with a survey of future technological challenges for low-risk and financially viable exploration and development.

Hess In The Bakken: Lean and Innovation Driving the Next Stage of Development



Time: 7:00 am–8:15 am
Location: Online
Speaker: **Dougie McMichael**, Vice President Onshore, Hess

Hess has a significant acreage position in the Bakken with a substantial future drilling inventory. The presentation will describe how lean thinking and innovation have been applied to streamline execution and drive growth, and how this will continue going forward to optimize activity and maximize asset value.

Investigation of Multiple Formations in the Midcontinent for CO₂ Storage Potential Through the Acquisition and Analysis of over 700 ft of Whole Core



Time: 7:00 am–8:15 am
Location: In-Person – George R. Brown Convention Center, Room 381
Fee: \$40
Speaker: **Bryan Guzman**, Vice-President, HGS

A significant component of the current energy transition is identifying locations for storage of human-generated carbon dioxide (CO₂). The US Department of Energy has sought to encourage this development through its Carbon Storage Assurance Facility Enterprise (CarbonSAFE) program. After a successful CarbonSAFE Phase I project, a Phase II project was undertaken to explore commercial-scale CO₂ storage in the United States midcontinent region across the Patterson site in Kearny County, Kansas and the Sleepy Hollow site in Red Willow County, Nebraska. The Patterson 5-25 well in Kearny County, KS, was drilled, cored, and logged in early 2020 with drilling

operations spanning from before and extending into the early pandemic-related lockdowns. Over 774 ft of 4-inch diameter core was collected across 17 runs that recovered Atoka, Morrow, Meramec, Osage/Kinderhook, Viola, Arbuckle, and Granite Wash/Reagan Formations, as well as the Precambrian basement granite. The core analysis was a vital part of the project to test fluid flow and mechanical properties of potential CO₂ reservoirs and their associated sealing intervals. Investigation into the porosity and permeability for each formation was conducted along with a full program covering rock fabric and properties. In addition, a special core analysis program was designed to investigate mechanical properties and multi-phase fluid flow properties. Initial characterization across all formations is reviewed and will be utilized to drive subsequent detailed analysis of the various seals and reservoirs through the section. The impact of CO₂ injection with the rocks and fluids is discussed in preparation for the last stage of analysis. Reviews of both new and traditional core analysis methods are explored for the application of CO₂ storage and compared with normal protocols used in oil and gas exploration.

PANEL SESSIONS

Assessing Risk and Evaluating Opportunities from Different Perspectives

Time: 8:25 am–10:10 am
Location: In-Person – George R. Brown Convention Center, General Assembly
Moderators: Isaac Aviles and Jim Grant

Panelists discuss how they now approach risk assessment and opportunity evaluation after the dramatic changes due to economic stresses (crises) and a global pandemic. The value of the technology will be discussed which is cost savings, performance improvement and ESG components.

Panelists:

- **Rusty Gilbert**, President, Gilbert Energy
- **Raoul LeBlanc**, Vice President – Energy, IHS Markit
- **Jim Grant**, Vice President – Subsurface, Chesapeake
- **Pushpesh Sharma**, Senior Research Data Scientist, Inveniam Research
- **Nishant Jha**, Well Performance President, Schlumberger

Earth's Surface Imaging for Pivoting: Affordable Drones and Satellite Imaging for Geological Exploration and Operations, Environmental Monitoring, and Energy Utilization

Time: 10:45 am–12:05 pm
Location: In-Person – George R. Brown Convention Center, General Assembly
Moderator: Andres Rivera

Panelists discuss the newest developments and directions in drones, satellite imagery, and other ways to acquire and process images of the Earth's surface. They discuss the technologies and processes they use, and the costs and overall return on investment with respect to new opportunities and business development. Applications include exploration and operations in critical minerals as well as oil and gas, environmental monitoring and intervention, and energy utilization.

Panelists:

- **Victoria Natalie**, Director, Engineering Program, Oklahoma State University
- **Dan Taranik**, Exploration Mapping
- **Fernando Lopez**, Global Business Development Manager, Kairos Aerospace
- **Sunil Garg**, President, DataVedik
- **Ron Bell**, Drone Geoscientist, Drone Geoscience, LLC
- **Shaun Baker**, Senior Manager Solutions Architecture, Amazon Web Services

WEDNESDAY CONFERENCE HIGHLIGHTS

The New Way to Work: Digital Platforms, Cloud-Based Collaborations, and Ecosystems

Time: 1:45 pm–3:30 pm
Location: In-Person – George R. Brown Convention Center, General Assembly
Moderator: Andrew Munoz

This session will probe the way that work is done, both in operations and in supportive roles. Companies will discuss the typical new tasks, and also the professionals they hire to do the task, and how they work. We will also discuss specific examples of technologies being used, and how they are contributing to a safer, more efficient, and profitable endeavor.

Panelists:

- **Jim Grant**, Vice President, Subsurface, Chesapeake
- **Liz Dennett**, Vice President of Data Architecture, Wood Mackenzie
- **Vitaly Meyer**, President, PetroCubic
- **Sathya Namasivayam**, Vice President of Data and Analytics, TGS
- **Philippe Herve**, SparkCognition
- **Jason Fitzgerald**, Director of Business Development, MineralWare

Global Unconventionals

Time: 3:50 pm–5:10 pm
Location: In-Person – George R. Brown Convention Center, General Assembly (Speakers presenting via Zoom)
Moderator: Luis Baez

The description of the plenary is as follows: “Unconventional resource development in North America has seen success in over 20 years of commercial activity with continuous innovation and development activity spanning over multiple geologic basins. Whilst an early surge of international opportunities were observed, we have seen limited success globally in the commercialization of unconventional resources. During this URTeC program, you will gain additional insight and even some possible solutions to the challenges of Unconventionals in international plays from operators that continue to progress these opportunities.”

Panelists:

- **Mohamed Al Zaabi**, ADNOC Abu Dhabi
- **David Close**, Santos
- **Robert Clarke**, Wood Mackenzie

SPECIAL SESSIONS

DOE – Opening Session: Understanding Unconventional Reservoirs: DOE Fundamental Shale Research Program

Time: 8:25 am–9:00 am
Location: In-Person – George R. Brown Convention Center, Room 360 (Speakers presenting via Zoom)
Moderator: Isaac Aviles

Focused insights from fundamental shale research conducted by DOE's National Laboratories. We will explore completed and current research findings related to geophysics, geomechanics, geochemistry and their interplay in the reservoir. Discussions will include answers to cross-cutting research questions and what has been learned that can be immediately applied to current operations such as rock matrix processes from pore to fracture, from fracture to production, and mitigation of current practices that may be affecting the ability to control/manage the reservoir for increased production or carbon storage.

Speaker:

- **Elena Melchert**, Director, Upstream Research Division

Best of URTeC Latin America I & II

Time: 8:25 am–12:15 pm
Location: Online
Moderator: Luis Baez

In November 2020, URTeC were successful in conducting the first Latin America Unconventionals conference under its name. With thanks to my fellow chairs Eduardo Vallejo (AAPG), Gustavo Carstens (SEG) and Luis Baez (SPE) and its committee we were successful in highlighting from first hand experts working in Latin America's most exciting unconventional plays, as well as gain insight into future strategies beyond 2021. The Best of Latin America sessions seeks to share insights into successful methods and best practices currently being undertaken to demonstrate the commercial and technical viability of these Latin American plays.

Speakers:

- **Standardized Workflow For Aquifer Characterization In Neuquén Unconventional Oil And Gas Blocks**
Lisandro Rodriguez, Pluspetrol
- **Real Time Series Analysis for Early Frac-Hit Detection in Vaca Muerta's Natural Flowing Wells**
Lucas Gonzalez Day, YPF
- **Case of Study: Applying Data Analytics to Reveal Most Important Parameters Impacting Well Production Performance in Vaca Muerta Unconventional Formation;** Alejandro Lerza, Chevron
- **Machine Learning and Hydraulic Fracture Simulation to Speed up Well Completion Optimization Understanding in Vaca Muerta Formation, Neuquén Basin, Argentina;** Damian Hryb
- **Geocellular Model for Vaca Muerta Characterization**
Carolina Crovetto, Pan American Energy
- **High Resolution Geomechanical Model and its Impact on Hydraulic Fracture Height Growth. An Example from Vaca Muerta Formation, Argentina**
Damian Hryb
- **Pozo D-129 Formation: The Case of a Recent Shale Oil Discovery in a Lacustrine Source Rock in El Huemul Field, Golfo San Jorge Basin, Southern Argentina;** Pablo Caprioglio, Sinopec Argentina Exploration and Production, Inc.

DOE – Insights on Relationship Between Matrix Geochemistry and Production: From Pores to Fractures

Time: 9:00 am–10:00 am
Location: In-Person – George R. Brown Convention Center, Room 360 (Speakers presenting via Zoom)
Moderator: Isaac Aviles

This panel will focus on fundamental insights on geochemical processes influencing production from shales at multiple spatial scales, from nanopores through the matrix and fractures to the reservoir.

Speakers:

- **Unlock Nanopores: Fundamental Understanding and Engineering Implications;** Yifeng Wang, Sandia National Laboratories
- **Scale Mineralization in Fracture Faces: Impact of Fluid-Rock Interactions on Permeability;** John Bargar, Stanford Linear Accelerator Center
- **Impact of Reactive Flow Pathway on Permeability Changes Along Primary Fractures;** Alexandra Hakala, National Energy Technology Laboratory
- **Incorporating Nanoconfinement Effects Into Reservoir Simulators**
Hari Viswanathan, Los Alamos National Laboratory

WEDNESDAY CONFERENCE HIGHLIGHTS

DOE – Insights on the Relationship Between Geomechanics and Geochemistry and Production: From Fracture (Faces) to Reservoir

Time: 10:15 am–11:15 am
Location: In-Person – George R. Brown Convention Center, Room 360
(Speakers presenting via Zoom)
Moderator: Isaac Aviles

In this panel, recent research topics that are impacted by the interface between the fracture and reservoir rock including fracture network generation and reactivation, long-term fracture behavior affected by mechanical and geochemical processes, proppant/shale behavior, and production simulation will be discussed over appropriate temporal and spatial scales.

Speakers:

- **Engineering Efficient Frac Geometry for More Efficient and Environmentally Friendly Production**
Joe Morris, Lawrence Livermore National Laboratory
- **Optimization of HProduction from Natural Fractures**
Bill Carey, Los Alamos National Laboratory
- **Proppant Behavior in Fractures – Optimizing Fracture Sustainability**
Tim Kneafsey, Lawrence Berkeley National Laboratory
- **The HFTS Project Contribution to Understanding the Multi-Scale Behavior of the Fractured Ultra-Low Permeability Systems: Observations and Practical Implications**
George Moridis, Lawrence Berkeley National Laboratory

DOE - Insights on How to Optimize Production: Take-Home Messages

Time: 11:15 am–12:05 pm
Location: In-Person – George R. Brown Convention Center, Room 360
(Speakers presenting via Zoom)
Moderator: Isaac Aviles

This panel will combine knowledge presented by the national laboratory fundamental shale portfolio to discuss important considerations required when working in unconventional oil/gas shales. This will include stimulation and production practices using the best available knowledge for maximizing production and minimizing environmental impact.

Speakers:

- **The Role of Pressure Management in Maximizing Production and Minimizing Environmental Impact**
Hari Viswanathan, Los Alamos National Laboratory
- **Understanding Geochemical Signatures in Unconventional Reservoirs**
Christina Lopano, National Energy Technology Laboratory
- **The Interplay Between Injection Fluid Chemistry and the Stimulated Rock Volume: Addressing the Roles of Base Fluids, Additives, and Solids**
Adam Jew, Stanford Linear Accelerator Center

Best of SPWLA

Time: 1:45 pm–3:30 pm
Location: In-Person – George R. Brown Convention Center, Room 360
Moderator: Katerina Yared

The Society of Petrophysicists and Well Log Analysts (SPWLA) is a non-profit organization dedicated to the advancement of petrophysics, log and core measurements, formation evaluation techniques, and hydrocarbon, mineral, and water resources. The SPWLA is pleased to showcase a selection of

top-rated unconventional reservoir-focused papers presented at its Annual Symposium May 2021. The papers will highlight new technologies and techniques that are designed for the specific issues faced by operators in tight oil/gas formations and shale-rich formations. We will also examine the impact of near-crisis conditions in the oil industry, and how that has altered the approaches to petrophysics analysis and well logging.

Speakers:

- **Inversion-Based Measurement Interpretation of a New Ultra-Slim Photorealistic Borehole Imager for OBM**
Yong-Hua Chen, Schlumberger
- **Adaptation of Crushed Rock Analysis to Intact Rock Analysis for Improving Water Saturation Assessment and Fast Pressure Decay Permeability Quantification**
Kai Cheng, GeoMark
- **Enhanced Assessment of Fluid Saturation in the Wolfcamp Formation of the Permian Basin**
Sabyasachi Dash, UT at Austin
- **Measuring Kerogen, Solid Organics, and Oil Production Potentials of Unconventional Source Rocks Using Solid-Type 20MHz NMR Techniques**
Harry Xie, Core Laboratories

Carbon Capture, Utilization, and Storage I & II

Time: 1:45 pm–5:30 pm
Location: Online
Moderator: Susan Nash

Session 1: Join us to learn about the current state of Carbon Capture, Useage, and Storage (CCUS), the newest developments in all aspects of CCUS, with a particular emphasis on storage. In addition, presenters will discuss technology vital to making sure CCUS operations are safe, efficient, and cost effective. Session 2: This session provides case studies of CCUS projects that provide insights into the wide range of possibilities for CCUS implementation. Presenters cover projects in locations that include Texas, North Dakota, Kansas, the North Sea, and more.

Speakers:

Session 1

- **CCUS Technical Considerations**
Rahul Grover, CCUS Schlumberger
- **Geomechanics for Safe Carbon Sequestration**
Hamed Soroush, President, PetroLern
- **Focus on Energy Storage**
Hannes Leetaru, Illinois State Geological Survey
- **Derisking Secure CO₂ Storage**
L. Stephen Melzer, Melzer Consulting

Session 2

- **Developments and the Road Ahead**
Tip Meckel, BEG, University of Texas
- **CCS Projects in North Dakota**
James Sorensen, UNDEER
- **On Challenges and Opportunities for CCUS Projects in Kansas**
Eugene Holubnyak, CCUS Lead, Kansas Geological Society
- **Geoscience and Data in Decarbonised Offshore Integrated Energy Systems Including CCUS**
Michael Stephenson, British Geological Survey
- **Threading the Needle: Subsurface Evaluation of the Northern Lights CO₂ Storage Project**
Renata Meneguolo, Equinor

WEDNESDAY CONFERENCE HIGHLIGHTS

TOPICAL LUNCHEONS

Promoting Cased Hole Formation Evaluation (CHFE) as an Alternative to Openhole Logging for Completion Design in Horizontal Wells



Time: 12:15 pm–1:30 pm
Location: Online
Speaker: **James Hemingway**, Vice President Nuclear Interpretation, NoHiddenPay LLC

There are numerous reasons to promote Cased Hole Formation Evaluation in unconventional reservoirs. Basic cased hole measurements have been offered as commercial measurements for over 50 years but their applications have primarily been reservoir monitoring or as a contingency in cases where openhole logs could not be run. This talk will suggest that CHFE be utilized as an alternative to standard openhole formation evaluation logging to alleviate the risks traditionally associated with openhole logging in horizontal wellbores. This information can then be used to scientifically design a more efficient completion.

Casing Damage and Hydraulic Fracturing: Geomechanical Perspectives



Time: 12:15 pm–1:30 pm
Location: In-Person – George R. Brown Convention Center, Room 342
Fee: \$65
Speaker: **Gang Han**, Upstream Technology Coordination, Aramco America

Casing damages have been found in many stimulated wells worldwide. While other mechanisms such as mechanical, thermal, and chemical can be responsible, this talk will focus on and clarify geomechanical contributions during and after hydraulic fracturing. Through case studies, key contributors to casing integrity are evaluated with varying casing properties, pipe eccentricities, cement channels, borehole breakouts, injection pressures, as well as different loading mechanics such as compression, shear, or combined. Dynamic rock changes induced by stimulation are quantified and compared to the threshold triggering casing damage.

B Minus – Must Try Harder: Some Thoughts on the Current State of the Art in Unconventional Play and Reservoir Evaluation



Time: 12:15 pm–1:30 pm
Location: In-Person – George R. Brown Convention Center, Room 382
Fee: \$65
Speaker: **Andy Pepper**, Director, This is Petroleum Systems LLC

Geologists working unconventional plays can often be heard complaining that engineers ‘just don’t want to listen to us’ or that they ‘just want to mow it down’ without consideration of changing geologic factors. Engineers on the other hand are faced with the task of ‘getting it done’ and understandably are looking to find practical and helpful results from geoscience workflows. Geoscience workflows in unconventional play and reservoir evaluation originated almost 2 decades ago in the laboratories - the first point of contact with the rock involving measurements from core. Evaluation ‘checklists’ reflected the measurements made in the laboratory - such as organic carbon content; rather than those important to determining oil in place, recovery, and flow rate - such as viscosity. Assertions that the gas saturation could be derived as (1-water saturation) would later be found to be flawed. The primary role of a commercial geochemical laboratory is not to derive new interpretation methods, and old interpretation schemes from the late 70’s and 80’s were exhumed; and these largely remain the frame of reference that results are presented in today. The result: our ongoing insights of shale geochemistry is through a foggy 40-year-old lens - perhaps the most unfortunate bad habit being the use of vitrinite reflectance as a frame of reference in rocks where vitrinite is scarce or absent. As the liquids plays emerged in the last decade, core laboratories’ protocols scrambled to adapt from the dry gas methods, but without recognizing the importance of processes such as organic absorption on deriving more considered saturations - what is vaporizable or solvent-extractable is not necessarily in the reservoir fluid phase in the rock! Landing zones in mature plays seem to be resistive to challenge, even though new saturation methods can show sweet spots in different parts of the reservoir. Are we just waiting for the oil price to save us again; or are we willing to try further optimization? Some larger OilCo’s leveraged the use of ‘modern’ petrophysical and fluid modeling approaches to provide engineers with maps showing quantitative GOR (considering reservoir storage that drives ‘cumulative’ vs ‘instantaneous’ fluid capture), pressure and viscosity; but public exposition of these workflows has been relatively recent. These workflows allow a relatively small number of expensive well datasets to be rapidly and inexpensively extrapolated and interpolated in the early to mid-stage of development.

BPX Energy: Technical Evolution Through Applied Physical Analytics



Time: 12:15 pm–1:30 pm
Location: In-Person – George R. Brown Convention Center, Room 381
Fee: \$65
Speaker: **Kyle Koontz**, Chief Operating Officer of Development, BPX Energy

BPX Energy is transforming the way we develop assets while generating premier economic returns. Our digital development platform integrates physical analytics with engineering and geoscience principles and subsurface data to make intelligent predictions for well performance. In this keynote, we will showcase several examples of BPX-proprietary technology and demonstrate how we leverage these tools to make data-driven investment decisions.

NETWORKING OPPORTUNITIES



OPENING RECEPTION

Day: Monday
Time: 5:00 pm–6:00 pm
Location: In-Person – George R. Brown Convention Center, Exhibit Hall E

End your first day at URTeC and unwind with a drink and light hors d'oeuvres as you network with exhibitors and industry colleagues in the Exhibit Hall.

NETWORKING RECEPTION

Day: Tuesday
Time: 5:00 pm–6:00 pm
Location: In-Person – George R. Brown Convention Center, Exhibit Hall E

Finish up day two at URTeC with a drink while networking with exhibitors and other colleagues.

REFRESHMENT BREAKS

Days: Monday–Wednesday
Times: 10:00 am–11:00 am (Monday, Tuesday, and Wednesday)
3:00 pm–4:00 pm (Monday and Tuesday)
Location: In-Person – George R. Brown Convention Center, Exhibit Hall E

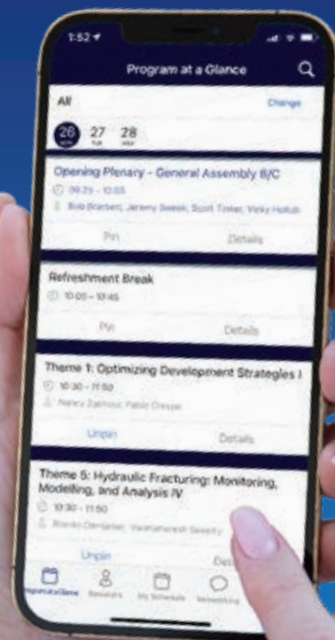
Grab a cup of coffee or tea in-between sessions and check out some of the exhibitor presentations to learn about the latest products and services.

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- Access the full speaker list and bios
- Connect directly with exhibitors
- Set up your profile and schedule
- Network and chat with attendees



SHORT COURSES

	Title	Instructor(s)	Location	Date(s) / Time(s)	Fees
1	Principles of Energy Storage and Carbon Capture Utilization and Storage	Hannes E. Leetaru, Scott Frailey, Sherilyn Williams-Stroud, and Steve Whittaker (Illinois State Geological Survey)	Online	Saturday, 24 July 2021, 8:00 am–5:00 pm	Members \$250 Non-Members \$300 Students \$125
6	The Geology of Unconventional Reservoirs	Bruce Hart (Western University)	Online	Thursday, 22 July–Sunday, 25 July 2021, 9:00 am–1:00 pm	Members \$500, Non-Members \$600 Students \$250
7	Understanding Signals: Basic Waveform Analysis from a Geophysical Perspective	Michael Buriyank (Meta Innovation Technologies)	Online	Thursday, 22 July–Sunday, 25 July 2021, 9:00 am–1:00 pm	Members \$500, Non-Members \$600 Students \$250
13	Methane Emission Measurement & Mitigation (MEMM)	Darcy Spady (Independent Director and Technical Advisor)	Online	Thursday, 29 July 2021, 8:00 am–5:00 pm	Members \$300, Non-Members \$400 Students \$150
16	Gas EOR in Tight Unconventionals	Curtis Hays Whitson (NTNUPE) and Mathias Carlsen (Whitson)	Online	Thursday, 29 July–Friday, 30 July 2021, 8:00 am–5:00 pm	Members \$500, Non-Members \$600 Students \$300
17	Reservoir Engineering Applications of Advanced Data Analytics and Machine Learning Algorithms	Ashwin Venkatraman (ReserMine)	Online	Thursday, 29 July–Friday, 30 July 2021, 8:00 am–5:00 pm	Members \$500, Non-Members \$600 Students \$300

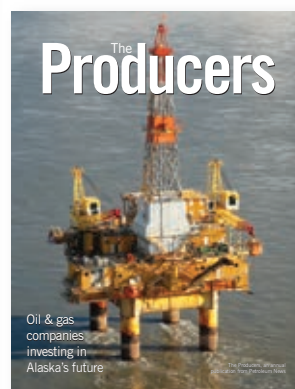
Cancelled Short Courses

- SC-02: Harnessing the Power of the Beast: A Machine Learning Workshop for Geoscientists (Online)
- SC-03: How Engineers Make Money Using Geophysics
- SC-04: Advanced Seismic Techniques: Concepts & Examples
- SC-05: Petrophysics and Geophysics Relevant to CO₂ Enhanced Oil Recovery
- SC-08: DFIT – The Unconventional Well Test: Theory, Design, and Interpretation
- SC-09: Mastering Uncertainty and Risk in Unconventional Reservoir Assessment
- SC-10: Unconventional Reservoir Production (Rate-Transient) Analysis

- SC-11: Forecasting Well Production Data in Unconventional Resources
- SC-12: Critical Geomechanics Concepts and Applications to Unconventionals Completions
- SC-14: An Overview of Multistage Completion Systems for Hydraulic Fracturing
- SC-15: Applied Concepts in Fractured Reservoirs

Visit URTEC.org for detailed information.

TRUSTED UPSTREAM COVERAGE



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TECHNICAL PROGRAM

• TECHNICAL SESSIONS AT A GLANCE •

• TECHNICAL PROGRAM – MONDAY •

• TECHNICAL PROGRAM – TUESDAY •

• TECHNICAL PROGRAM – WEDNESDAY •

• PRESENTER CROSS REFERENCE •

- Theme 1: Operators' Forum: Case Studies Highlighting the Multidisciplinary Approach to Exploration, Appraisal, Pilot Tests, and Development of Unconventional Resources
- Theme 2: Advanced Formation Evaluation of Unconventional Reservoirs
- Theme 3: Geological Characterization and Evaluation Spanning the E&P Lifecycle
- Theme 4: Geophysical Unconventional Reservoir Analysis
- Theme 5: Geomechanics – The Intersection of Geoscience and Engineering
- Theme 6: Applied Geochemistry for Unconventionals: From Source Rock to Produced Hydrocarbons
- Theme 7: Machine Learning, AI, and Big Data in the Digital Oilfield
- Theme 8: Unlocking the Production and Recovery Potential of Unconventionals
- Theme 9: Reserves Estimation and Production Forecasting
- Theme 10: New Materials and Innovative Technologies as Applied to Unconventionals
- Theme 11: International and Emerging Challenges of Unconventional Resources: Integrated Geoscience and Engineering
- Theme 12: Business of Unconventional Plays
- Theme 13: Sustainability, Rapid Industry Change, and the Social License to Operate
- Theme 14: Special Sessions

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Society of Petroleum Engineers

TECHNICAL SESSIONS AT A GLANCE

Sessions are numbered by theme – see page 24 for the full list.

Session Rooms	General Assembly	Room 351	Room 360	Room 361	Room 362
Monday Morning	Opening Plenary Session: Unconventionals in Transition				
	Panel Session: The Road Ahead for New Technology Now: Funding and Commercialization	Special Session: ConocoPhillips Unconventional Reservoirs and Technology Showcase	Special Session: Hydraulic Fracturing Test Site-2 Part I	Theme 13: Produced Water and Induced Seismicity Perspectives	
Monday Afternoon	Panel Session: Implementing New Technologies in the Field: How Companies are Approaching it in 2021 and Beyond	Theme 1: Optimizing Development Strategies II	Special Session: Hydraulic Fracturing Test Site-2 Part II	Theme 2: Advances in Special Core Analysis and Core-Flood Testing	Theme 9: EUR and Performance Prediction - DCA and Beyond II
	Panel Session: Data Issues: Management, Integrity, and Legacy	Theme 10: Innovative Technologies to Reduce Completions Costs	Special Session: Hydraulic Fracturing Test Site-2 Part III	Theme 2: Drivers for Understanding Reservoir Quality and Completion Quality	
Tuesday Morning	Panel Session: ESG in Action: Flare Reduction, Leak Detection, Logistics, Blended Solar/Geothermal/Wind Electricity Generation Projects, and Social License to Operate	Theme 1: Permian Stacked Pay Development Strategies	Special Session: Hydraulic Fracturing Test Site-2 Part IV	Theme 2: High and Low Field NMR Applications	Theme 9: EUR and Performance Prediction and Type Well Profiles
	Panel Session: Sensors, Automation, and Smart Digital Operations: Where We Are and the Road Ahead	Theme 1: Optimizing Completions, Perforations, and Stimulation Strategies	Special Session: Hydraulic Fracturing Test Site-2 Part V	Theme 3: Emerging Geological Evaluations, Tools and Workflows: Data Driven Methods	
Tuesday Afternoon	Panel Session: Learning from Other Industries: A Geothermal Conversation	ConocoPhillips Special Session: Optimizing Through Completion Design and Production Analysis	EOR Special Session: Best of Tulsa-Recovery Improvement for Unconventional/Tight Systems	Theme 2: Rock-Fluid and Fluid-Fluid Interactions - PVT Data Acquisition/Analysis	Theme 9: Future of Production Forecasting and Production Diagnostics
	Panel Session: Supply Chains in Energy: Cost Savings, Quality Assurance, 3-D Printing, and Ethical Sourcing	Theme 1: Navigating Technologies That Deliver Bottom-Line Results	Theme 4: Novel Seismic Inversion and Attribute Applications	Theme 2: Emerging Petrophysical Evaluations	Theme 3: Emerging Geological Evaluations, Tools and Workflows: Examples from the Field and Beyond
Wednesday Morning	Panel Session: Assessing Risk and Evaluating Opportunities from Different Perspectives	Theme 3: Structural Geology as Applied in Unconventionals	Special Session: DOE Fundamental Shale Research Program I	Theme 10: Friction Reducers and Other Completion Fluids	
	Panel Session: Earth's Surface Imaging for Pivoting: Affordable Drones & Satellite Imaging for Geological Exploration and Operations, Environmental Monitoring and Energy Utilization	Theme 3: New Ideas and Workflows for Reservoir Characterization of Unconventional Reservoirs	Special Session: DOE Fundamental Shale Research Program II	Theme 7: Data-Driven Production Forecasting and Optimization	
Wednesday Afternoon	Panel Session: The New Way to Work: Digital Platforms, Cloud-Based Collaborations, and Ecosystems	Theme 10: Workflows to Identify Fracture Geometry/Methods for Subsurface Reservoir Characterization	Special Session: Best of SPWLA	Theme 7: The New Frontier: Combining Physics-Based and Machine-Learning Methods	
	Panel Session: Global Unconventionals	Theme 8: Modeling	Theme 9: Well Spacing and Well Interference Impact	Theme 4: Tools and Techniques for Measuring Fracture Interactions	

Room 370	Room 371	Exhibit Hall, Station A	Exhibit Hall, Station B	Online Only	Online Only
Theme 8: Case Studies		Theme 1: Optimizing Development Strategies I	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis IV	Theme 5: Experimental Rock Mechanics I	Theme 9: EUR and Performance Prediction - DCA and Beyond I
Theme 11: International and Emerging Challenges of Unconventional Resources: Integrated Geoscience and Engineering	Theme 5: Experimental Rock Mechanics II	Theme 13: Focus on Methane: Produced Water and Induced Seismicity	Theme 6: Advances in Applied Petroleum Geochemistry and its Applications	Theme 15: Unlocking the Production and Recovery Potential of Unconventionals	Theme 15: Geoscience Tools and Methods for Understanding the Rock
Theme 8: Eagle Ford	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis I	Theme 4: Reservoir Characterization Using Petrophysics, Geomechanics, and Microseismic		Theme 1: Parent-Child and Well Spacing	
Speical Session: Best of ARMA	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis II	Theme 7: Data-Driven Forecasting and Combining Physics-Based and Machine-Learning Methods	Theme 10: Innovative Technologies: New Materials and Workflows	Theme 15: Evaluating and Applying Advanced Methods to Create Value in Unconventionals	
Theme 8: Facilities and Artificial Lift	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis III			Theme 4: Measuring Stress, Strain, and Pressure	
Theme 6: Proven and Potential Applications of Time-Lapse Geochemistry	Theme 5: Diagnostics and Monitoring with Geomechanical Models	Theme 3: Reservoir Characterization, Geological Evaluations, and Studies of Unconventional Plays		Theme 8: Improving Recovery From Flowback to EOR Potential	Theme 15: Novel Completion Methods to Optimize Costs and Maximize Recovery
Theme 6: Analytical Advances in Applied Petroleum Geochemistry	Theme 8: Northern Shales	Theme 2: Advanced Formation Evaluation and its Impact in Hydrocarbon Recovery	Theme 9: EUR and Performance Prediction	Theme 2: Pore-Network Imaging and Fluid Flow Modeling	Theme 7: Machine-Learning for Subsurface Applications
Theme 12: Maximizing and Delivering Value	Theme 6: Understanding and Predicting Produccible Fluids	Theme 2: Emerging Petrophysical Evaluations and Completion Quality	Theme 5: Geomechanical Models and Experimental Rock Mechanics	Special Session: Best of URTeC Latin America I	
Theme 8: Flow and Phase Behavior				Special Session: Best of URTeC Latin America II	Theme 4: Quantifying Natural Fracture Properties and Reservoir Pressure
Theme 13: Focus on Methane: The Regulatory Challenges and Monitoring for the Future	Theme 3: Regional Geological Evaluations and Studies of Unconventional Plays	Exhibit Hall Closed		Carbon Capture, Utilization, and Storage I	
Theme 10: Novel Proppants, Low Environmental Impact Fluids and Additives				Carbon Capture, Utilization, and Storage II	

MONDAY TECHNICAL PROGRAM

IN PERSON

Opening Plenary Session: Unconventionals in Transition

General Assembly

Chairs: S. Rhodes, D. Valleau

8:25 am–10:05 am (See page 13 for summary)

- **Introductory Remarks**
- **Occidental's Path to Carbon Neutrality**
V. Hollub, OXY
- **Social Engineering Meets Petroleum Engineering - Goals Versus Realities for Today's Energy Sector**
B. Brackett, Bernstein Research
- **The Real Global Energy Transition: From Poverty to Prosperity**
S. Tinker, BEG
- **Outrun the ESG Bear or Just the Company Next to You?**
J. Sweek, Darcy Partners
- **Q&A**

Theme 1: Optimizing Development Strategies I

Exhibit Hall - Station A

Chairs: K. Hartig, A. Lorzongnam

10:30 **Introductory Remarks**

- 10:35 **High Viscosity Friction Reducer Testing, Trialing, and Application Workflow: A Permian Basin Case Study**
N. Zakhour, S. Esmaili, J. Ortiz, J. Deng (Occidental Petroleum)
- 11:00 **Applying State-of-the-Art Completion Techniques in Vaca Muerta Formation**
P. Crespo¹, M. Pellicer¹, H. Jacot² (¹Pan American Energy; ²H-Frac Consulting)

Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis IV

Exhibit Hall - Station B

Chairs: V. Sesetty, S. Rhodes

10:30 **Introductory Remarks**

- 10:35 **Modeling the Effect of Natural Fracture Network and its Properties on Multi-Stage Stimulation**
B. Damjanac, C. Detournay, M. Torres (Itasca Consulting Group, Inc.)
- 11:00 **3-D Digital Mineral Mechanical Modeling of Complex Reservoirs Rocks for Investigation of Fracture Propagation at Microscale**
V. Nachev^{2,1}, A. Kazak³, S. Turuntaev², (¹Moscow Institute of Physics and Technology (National Research University); ²Sadovsky Institute of Geospheres Dynamics of Russian Academy of Sciences; ³Skolkovo Institute of Science and Technology)

Panel Session: The Road Ahead for New Technology Now: Funding and Commercialization

General Assembly

Moderator: S. Nash

10:45 am–12:05 pm (See page 13 for summary)

- J. Thurmond, Hess
- T. Hussain, Delek US
- S. Coleman, Chevron
- S. Pai, Technology Collaboration Center

Special Session: ConocoPhillips Unconventional Reservoirs and Technology Showcase

Room 351

Chairs: E. Lamoreux, D. S. Jones, R. A. Hull, J. Hnat

10:45 am–12:05 pm (See page 14 for summary)

- M. Hatfield, CTO & SVP, Global Technical Functions, ConocoPhillips
- E. Connelly, GM Global Production, ConocoPhillips
- J. Harper, President Permian, ConocoPhillips, Midland
- D. Forbes, GM, Global Wells, ConocoPhillips
- W. King, Vice President of Gulf Coast, ConocoPhillips

Special Session: Hydraulic Fracturing Test SiteS-2 Part I

Room 360

Chairs: V. Sahni, D. Craig, G. Covatch

10:45 am–12:15 pm (See page 14 for summary)

- **Overview of the Hydraulic Fracturing Test Site 2 (HFTS-2) in the Permian Delaware Basin;** J. Ciezobka (GTI)
- **Subsurface Characterization of Hydraulic Fracturing Test Site - 2 (HFTS-2), Delaware Basin;** F. Bessa, K. Jerath, C. Ginn, P. Johnston, Y. Zhao, T. Brown, R. Lopez, J. Kessler, B. Nicklen, V. Sahni (Occidental)

Theme 8: Case Studies

Room 370

Chairs: T. Firincioglu, F. Tovar

10:45 **Introductory Remarks**

- 10:50 **Heavy Oil Polymer EOR in the Challenging Alaskan Arctic - It Works!**
A. Dandekar¹, B. Bai², J. Barnes³, D. Cercone⁴, J. Ciferno⁴, R. Edwards³, S. Ning⁵, W. Schulpen³, R. Seright⁶, B. Sheets¹, D. Wang⁷, Y. Zhang¹ (¹University of Alaska Fairbanks; ²Missouri University of Science and Technology; ³Hilcorp Alaska LLC; ⁴DOE-National Energy Technology Laboratory; ⁵Reservoir Experts, LLC/Hilcorp Alaska, LLC; ⁶New Mexico Institute of Mining and Technology; ⁷University of North Dakota)
- 11:15 **Predicting Oil Recovery Under Uncertainty for Huff-n-Puff Gas Injection: A Field Case Study in Permian**
E. Eltahan¹, R. Ganjdanesh¹, K. Sepehrnoori¹, M. Thuesen², J. Nohavitz² (¹The University of Texas at Austin; ²EP Energy)
- 11:40 **Drawdown Management Strategies: Midland Basin Case Studies**
Y. Pradhan, T. Blasingame, E. Gildin (Texas A&M University)

Theme 13: Produced Water and Induced Seismicity...ESG Perspectives

Room 361

Chairs: S. Nash, E. Tokarz, K. Bott

10:45 **Introductory Remarks**

- 10:50 **ESG Reporting in the Oil and Gas Industry-A Permian Basin Water Management Perspective**
R. G. Bruant, K. Bennett, S. Fox, S. Willard, A. Michel (B3 Insight)
- 11:15 **Application of Electro-Oxidation Technology for Water Treatment and its Impacts on Rock Wettability**
Y. Zhang¹, L. Yuan¹, S. Jakhete², M. Sadrzadeh¹, H. Dehghanpour¹ (¹University of Alberta; ²Aqua Pulsar)
- 11:40 **Managing Induced Seismicity: A System for Mapping the Geospatial Intersection of Saltwater Disposal Formations, Active Injection Intervals, Injection Pressures, and Volumes, Geologic Fault Lines and Seismic Events in the Permian Basin**
J. Adler, J. Cortina, C. Lemons* (Sourcewater, Inc.)

Panel Session: Implementing New Technologies in the Field: How Companies are Approaching it in 2021 and Beyond

General Assembly

Moderator: A. Singh

1:45 pm–3:30 pm (See page 13 for summary)

- A. Henry; Eunike Ventures
- S. Neal; Chevron
- S. Garg; DataVedik
- S. Liu; Oxy

MONDAY ONLINE TECHNICAL PROGRAM

ONLINE ONLY

Theme 5: Experimental Rock Mechanics I

Online Only

Chairs: L. Louis, J. Kessler, D. N. Espinoza

10:45 **Introductory Remarks**

10:50 **Connecting Geomechanical Properties with Potential for Proppant Embedment and Production Decline for the Emerging Caney Shale, Oklahoma**

M. Benge¹, Y. Lu¹, A. Katende², J. Rutqvist³, D. Crandall⁴, A. Haecker⁵, G. King⁶, J. Renk⁴, M. Radonjic², A. Bunger^{*1} (¹University of Pittsburgh; ²Oklahoma State University; ³Lawrence Berkeley National Laboratory; ⁴National Energy Technology Laboratory; ⁵Continental Resources, Inc.; ⁶GEK Engineering)

11:10 **Experimental Study on Expansion Law of Micro-Fractures Induced by Shale Hydration**

Y. Zhao¹, L. Tao², X. Zhang² (¹Southwest Petroleum University, China; ²Oil and Gas Technology Research Institute Changqing Oilfield Company, Petrochina Company Limited)

11:30 **The Effect of Capillary Condensation on the Geomechanical Properties of Tight Formations: An Experimental Investigation**

A. Albannay^{1,2}, B. Bui², D. Katsuki², (¹ADNOC; ²Colorado School of Mines)

Theme 9: EUR and Performance Prediction – DCA and Beyond I

Online Only

Chairs: L. Deng, C. Virues, D. Vo

10:45 **Introductory Remarks**

10:50 **Establishing the Basis for a Multi-Segment Arps Decline Model**

J. Lee (Texas A&M)

11:10 **Transfer Learning with Recurrent Neural Networks for Long-term Production Forecasting in Unconventional Reservoirs**

S. Mohd Razak¹, J. Cornelio¹, Y. Cho¹, H-H. Liu², R. Vaidya², B. Jafarpour¹ (¹University of Southern California; ²Aramco Americas)

11:30 **Understanding the Effect of Nanopores on Flow Behavior and Production Performance of Liquid-Rich Shale Reservoirs**

A. Khanal¹, M. Khoshghadam², H. S. Jha³, W. J. Lee³ (¹University of Texas at Tyler; ²New Dawn LLC.; ³Texas A&M University)

ALT **Shale Gas Development Potentials of the Jurassic Weald and Wessex Basins, South-East England: A Techno-Economic Evaluation**

B. O. Bassey¹, E. A. Ana² (¹Cranfield University; ²University of Calabar)

ALT **Fluid Characterization and Volumetric Assessment in the Montney...One Tricky Fluid System**

A. J. White¹, W. Feick², F. B. Thomas³, J. Marin⁴, N. Prefontaine², J. Ponto¹, R. Apil⁴, C. Clarkson⁴ (¹Pipestone Energy Corp; ²McDaniel & Associates; ³Resopstrategies; ⁴Stratum Reservoir)

ALT **Rate-Transient Analysis of Communicating Wells Using the Dynamic Drainage Area (DDA) Concept**

H. Ahmadi, H. Hamdi, C. R. Clarkson (University of Calgary)

Theme 15: Geoscience Tools and Methods for Understanding the Rock

Online Only

Chairs: J. Cockbill, A. Sloan

1:45 **Introductory Remarks**

1:50 **Permeability From NMR in the Unconventional Point Pleasant Formation**

X. Wang¹, P. M. Singer¹, Y. Liu¹, Z. Chen¹, G. J. Hirasaki¹, Z. Yang², S. J. Seltzer², B. Sun², M. O. Wigand² (¹Rice University; ²Chevron)

2:10 **Hydraulic Fracturing Geochemical Impact on Fluid Chemistry: Comparing Wolfcamp Shale and Marcellus Shale**

W. Xiong^{2,1}, J. Moore^{2,3}, D. Crandall², C. Lopano², A. Hakala², (¹Leidos Research Support Team; ²National Energy Technology Laboratory; ³Battelle Research Support Services)

2:30 **A Novel Method to Develop Chemostratigraphy Using X-Ray Fluorescence Spectra Raw Data**

M. Hussain¹, A. Amao², K. Al-Ramadan², L. Babalola², J. Humphrey² (¹Baker Hughes; ²KFUPM)

2:50 **Brittleness and Geomechanical Properties Estimation Using Wireline and Seismic Data in the Duvernay Shale Basin, Canada**

C. C. Dumitrescu (Terra-IQ Ltd.)

3:10 **Linking Depositional Environment Interpretations and Stratal Architecture to Source Rock Richness and Mechanical Property Distribution in the Delaware Basin, Southeast New Mexico and West Texas**

B. Price¹, R. Dommissie², X. Janson² (¹University of Texas at Austin; ²Bureau of Economic Geology)

Theme 15: Unlocking the Production and Recovery Potential of Unconventionals

Online Only

Chairs: S. Yi, F. Nath

1:45 **Introductory Remarks**

1:50 **Impact of Huff n Puff EOR on Shale Microstructure**

S. Mamoudou, A. Tinni, C. Sondergeld, C. Rai, M. Curtis (University of Oklahoma)

2:10 **CO₂-Soluble Surfactants for Enhanced Oil Recovery From Shale**

L. C. Burrows^{1,2}, F. Haeri^{1,3}, D. Tapriyal^{1,3}, P. G. Shah⁴, P. Lemaire⁴, A. Alenzi⁵, D. Crandall¹, R. M. Enick⁴, A. Goodman¹, (¹National Energy Technology Laboratory; ²Oak Ridge Institute for Science and Education; ³Leidos Research Support Team; ⁴Dept. of Chemical and Petroleum Eng., University of Pittsburgh; ⁵Chem. Eng. Tech., College of Technological Studies)

2:30 **Water-Oil Displacement in Shale: New Insights From Integrated Imbibition Test and Multi-Scale Imaging**

S. Peng, P. Periwal, R. Reed (University of Texas at Austin)

2:50 **Effect of Pore Geometry and Heterogeneous Surface Wettability on the Nanoconfined Phase Behavior in Nanopore Networks of Shale Rocks**

S. Chen¹, J. Jiang², B. Guo¹ (¹University of Arizona; ²Chevron Energy Technology Co.)

Theme 1: Parent-Child and Well Spacing

Online Only

Chairs: A. L. Lerza, T. Watson

4:05 **Introductory Remarks**

4:10 **Understanding the Interaction Between Parent and Child Using Analytical and Numerical Approaches in Permian Basin - An Operator Perspective**

S. Esmaili, J. Deng, E. Wolfram, V. Muralidharan, I. Harmawan, J. Cassanelli (Occidental)

4:30 **Multi-Disciplinary Fracture and Spacing Study in the DJ Basin**

J. Brand¹, J. Barhaug¹, R. Reinmiller², R. Parker², B. Cherian³ (¹Great Western Petroleum; ²Borehole Image Specialists; ³Premier Oilfield Group)

ALT **The Unconventional Reservoir Development Performance Reviews - The Northern Midland Basin Case Study**

H. Xiong, A. Thompson, J. Tackett, M. Schellstede (University Lands)

ALT = Alternate speaker

MONDAY TECHNICAL PROGRAM

IN PERSON

Special Session: Hydraulic Fracturing Test Site-2 Part II

Room 360

Chairs: V. Sahni, D. Craig, G. Covatch

1:45 pm–3:40 pm (See page 14 for summary)

- **Fracture Description of the HFTS-2 Slant Core, Delaware Basin, West Texas;** J. F. W. Gale¹, S. J. Elliott¹, B. G. Rysak¹, C. L. Ginn², N. Zhang³, R. D. Myers⁴, S. E. Laubach¹ (¹The University of Texas at Austin; ²Occidental Petroleum Corporation; ³Devon Energy; ⁴ExxonMobil Upstream Research Company)
- **Microseismic at HFTS2: A Story of Three Stimulated Wells** V. Grechka, C. Straus, B. Howell*, D. Furtado, Z. Li (Borehole Seismic)
- **Mechanism of Microseismic Generation During Hydraulic Fracturing - With Evidence from HFTS 2 Observations;** Y. Tan, J. Wang, P. Rijken, Z. Zhang, Z. Fang, R. Wu, I. Lim Chen Ning, X. Liu (Chevron)
- **HFTS-2 Completions Design and State-of-the-Art Diagnostics Results** N. Zakhour, M. Jones*, Y. Zhao, K. Orsini, V. Sahni (Occidental)

Theme 1: Optimizing Development Strategies II

Room 351

Chairs: C. Cipolla, J. Alvarez

1:45 **Introductory Remarks**

1:50 **Maximizing Project Value in Vaca Muerta Shale Formation, Part 2: Simultaneous Optimization of Well Spacing and Completion Design- Case of Study**

A. Lerza, S. Cuervo, S. Malhotra (Chevron Corporation)

2:40 **Simul-Frac Journey in the Permian Basin**

A. S. Kim, S. Han, K. Belcourt, A. Ruhl, R. Cazenave (Chevron)

Theme 2: Advances in Special Core Analysis and Core-Flood Testing

Room 361

Chairs: L. Jin, V. Montoya

1:45 **Introductory Remarks**

1:50 **Live Oil and Methane Production From Fractured Shale Cores**

N. J. Welch¹, M. Meng¹, W. Li¹, L. P. Frash¹, A. Menefee¹, S. Peterson¹, M. Wigand², J. W. Carey¹ (¹Los Alamos National Lab; ²Chevron Energy Technology Company)

2:15 **Investigation of Diffusion and Sorption in Shale Under Variable Net Stress;** Y. Lyu, D. Dasani, T. Tsotsis, K. Jessen (University of Southern California)

2:40 **Using NMR and Steady State Permeability Measurements to Study Drilling Fluid Invasion Into the Tight Mississippian Ratcliffe Carbonate and Its Impact on Oil Production**

A. Mathur¹, S. Ali², C. Woodland³, K. Hudson³, C. Barnes¹, W. D. Von Gonten, Jr.², C. Belanger¹ (¹WDVG Laboratories; ²WDVG Petroleum Engineering; ³Mercury Resources LLC)

3:05 **Workflow for Determining Relative Permeability Behavior in Low Permeability Media Using MICP Drainage-Imbibition Measurements**

J. T. Greene¹, K. Newsham², M. Pavlovic², K. Jerath², C. Cox¹, M. McAllen¹ (¹NUTECH Energy; ²Occidental Petroleum)

Theme 5: Experimental Rock Mechanics II

Room 371

Chairs: L. Louis, J. Kessler, D. N. Espinoza

1:45 **Introductory Remarks**

1:50 **Investigation Into the Fabric and Textural Controls Over Effective Grain Stiffness for Accurate Biot Coefficient and Pore Compressibility Predictions**

L. Louis¹, G. Boitnott¹, E. Hutto², G. Carpio², M. Foster² (¹New England Research; ²Halliburton)

2:15 **Laboratory Study Shows How Real Perforations Affect Unconventional Fracture Initiation**

F. H. C. Doornbosch, Q. Guo, C. E. Felicio Guedes, C. E. Baumann, B. D. Clark (Schlumberger)

2:40 **Triaxial Direct-Shear Reveals the True Magnitude of Fracture Roughness Effects on Flow;** M. MENG, L. Frash, J. W. Carey, N. J. Welch, W. Li, S. K. Peterson (Los Alamos National Laboratory)

3:05 **Mitigating the Effect of Ash Layers on Hydraulic Fracture Connectivity** B. Abell¹, R. Suarez-Rivera¹, J. T. Mayo² (¹W.D. Von Gonten Laboratories; ²Intrepid Resources)

Theme 6: Advances in Applied Petroleum Geochemistry and its Applications

Exhibit Hall - Station B

Chairs: J. Jweda, C. Barrie

1:45 **Introductory Remarks**

1:50 **Produced Gas and Condensate Geochemistry of the Marcellus Formation: Insights into Petroleum Maturity, Migration, and Alteration in an Unconventional Shale Reservoir**

C. D. Laughrey (Stratum Reservoir)

1:50 **Raman Microscopy Analysis of Wyoming CarbonSAFE Pilot Well Thin Sections for Mineralogy and Organic Matter Characterization;** G. A. Myers¹, T. Brown¹, S. Fernando¹, E. Phillips², F. McLaughlin² (¹WellDog Gas Sensing Technology Corp; ²University of Wyoming)

2:15 **Adsorption Capacity of Hydrocarbon and Kerogen: A Molecular Dynamics Simulation Investigation**

Z. Cao¹, Z. Q. Feng¹, C. W. Wu¹, Z. M. Zhang¹, J. R. Guo¹, X. Y. Lyu¹, H. Jiang² (¹SINOPEC E&P Research Institute; ²Strategic Research Center of Oil and Gas Resources, Ministry of Natural Resources)

Theme 9: EUR and Performance Prediction - DCA and Beyond II

Room 362

Chairs: A. Ramkhelawan, T. Oluokun, S. Matringe

1:45 **Introductory Remarks**

1:50 **Continuous Lookback, Calibration, and Adjustment Reduces Biases and Improves Reliability of Production Forecasts** M. K. Alarfaj¹, D. A. McVay² (¹Saudi Aramco; ²Texas A&M University)

2:15 **Deconvolution of Time-Varying Bottomhole Pressure Improves Rate-Time Models History Matches and Forecasts of Tight-Oil Wells Production;** L. M. Ruiz Maraggi, L. W. Lake, M. P. Walsh (The University of Texas at Austin)

2:40 **The Utilization of the "Rate-Integral" to Assist with Decline Curve Analysis of Poor-Quality Unconventional Time-Rate Data** E. W. Bryan¹, D. Symmons², D. Ilk², T. A. Blasingame³ (¹Texas A&M University – Now DeGolyer and MacNaughton; ²DeGolyer and MacNaughton; ³Texas A&M University)

3:05 **Evaluation of "Tight Oil" Well Performance and Completion Practices in the Powder River Basin - "Time Slice" Analysis** B. Murray¹, R. Ness¹, G. Koperna¹, S. Carpenter² (¹Advanced Resources International, Inc.; ²University of Wyoming, Enhanced Oil Recovery Institute)

Theme 11: International and Emerging Challenges of Unconventional Resources: Integrated Geoscience and Engineering

Room 370

Chairs: D. J. Livasy, T. Mallinson

1:45 **Introductory Remarks**

1:50 **Subsurface Technology Sharing from Oil and G as to Geothermal Resources**

B. Dindoruk¹, S. Livescu² (¹University of Houston; ²Baker Hughes)

2:15 **Efficient Modeling of Enhanced Geothermal System with 3-D Complex Hydraulic and Natural Fractures**

W. Yu (UT-Austin and Sim Tech LLC)

2:40 **Stacked Completion and Production of Lacustrine Shale Oil Deposit Lateral Wells in the Kongdian Formation, China**

P. Zhao¹, G. Wen¹, T. Ni¹, H. Shen¹, H. Yuan¹, L. Yang², S. Wu³ (¹PetroChina Dagang Oilfield Company; ²Solid Services; ³Power Energy and Environmental Research Institute)

MONDAY TECHNICAL PROGRAM

Theme 13: Focus on Methane: Produced Water and Induced Seismicity

Exhibit Hall - Station A

Chairs: D. Valteau

- 1:45 **Introductory Remarks**
- 1:50 **Well Development, Production, & Challenges in the Lewis Shale, Wyoming**
L. C. Mayorga-Gonzalez, S. A. Sonnenberg (Colorado School of Mines)
- 2:15 **Managing Climate Related Risk Through Continuous Methane Monitoring**
A. J. Morris, K. Soofi, D. Camille (ConocoPhillips)
- 2:40 **Completion Design Evolution for Saltwater Disposal Injection Wells in the Bakken Play**
D. Schmidt¹, J. W. Bader², A. Day², M. Bohrer² (¹Energy & Environmental Research Center; ²Department of Mineral Resources)
- 3:05 **New Technology Closes Micro-Annular Flow Paths in the Wellbore, Stopping Downhole Gas from Escaping to the Surface**
C. Green, R. Evans, B. Fry, W. S. Wruck (Renegade Services)

Theme 4: Reservoir Characterization Using Petrophysics, Geomechanics, and Microseismic

Exhibit Hall - Station A

Chairs: M. Rauch, A. Munoz

- 3:40 **Introductory Remarks**
- 3:45 **Improving Microseismic Denoising Using 4-D (Temporal) Tensors and High-Order Singular Value Decomposition**
K. Gonzalez¹, E. Gildin¹, R. Gibson² (¹Texas A&M University; ²NanoSeis)
- 4:10 **An Integrated Analytics and Machine Learning Solution for Predicting the Anisotropic Static Geomechanical Properties of the Tuscaloosa Marine Shale**
C. M. Ruse, J. Ahmadov, N. Liu, M. Mokhtari (University of Louisiana at Lafayette)

Panel Session: Data Issues: Management, Integrity, and Legacy

General Assembly

Moderator: I. Aviles

4:05 pm–5:25 pm (See page 13 for summary)

- P. Neri, Energistics
- E. Zavala, Delek
- K. Padeletti, Amazon Web Services, Houston
- P. Jong, Shell Global Solutions Inc.
- J. Fan, Deeptime Digital Earth
- J. Cruise, Schlumberger

Special Session: Hydraulic Fracturing Test Site-2 Part III

Room 360

Chairs: V. Sahni, D. Craig, G. Covatch

4:05 pm–5:35 pm (See page 14 for summary)

- **An Integrated View of Hydraulic Induced Fracture Geometry in Hydraulic Fracture Test Site 2**
G. A. Ugueto¹, M. Wojtaszek², P. T. Huckabee¹, A. A. Savitski¹, A. Gzusk³, G. Jin⁴, J. A. Chavarria⁵, K. Haustveit⁶ (¹Shell Exploration & Production Company; ²BSP; ³Neubrex; ⁴Neubrex Consultant and Colorado School of Mines; ⁵OptaSense; ⁶Devon Energy)
- **Hydraulic Fracture Characterization by Integrating Multidisciplinary Data From the Hydraulic Fracturing Test Site 2 (HFTS-2);** Z. Zhang, J. DiSiena, D. Bevc, I. Lim Chen Ning, Y. Tan, L. Swafford, M. Craven, K. Hughes, A. Vissotski (Chevron Technical Center)
- **Analysis of Completion Design Impact on Cluster Efficiency and Pressure-Based Well Communication in HFTS-2 Delaware Basin**
A. Vissotski, A. Singh, P. Rijken, R. Reverol (Chevron)

Theme 2: Drivers for Understanding Reservoir Quality and Completion Quality

Room 361

Chairs: C. Glaser, M. Luyckx

- 4:05 **Introductory Remarks**
- 4:10 **Direct Measurement of Permeability and Its Evolution With Stress**
D. Gokaraju¹, O. Djordjevic², D. Gokaraju¹, L. Hathon³, A. Guede⁴, R. Patterson¹, A. Simone¹, M. Aldin¹, S. Aldin¹, A. Thombare¹, S. Govindarajan¹ (¹MetaRock Laboratories; ²Ovintiv; ³University of Houston; ⁴Independent, previously with MetaRock Laboratories)
- 4:35 **Wettability Alteration and Improved Oil Recovery in Unconventional Resources;** F. Bordeaux Rego, E. Eltahan, K. Sepehrnoori (The University of Texas at Austin)
- 5:00 **Not All Shales Play the Same Game: Comparative Analysis of US Shale Oil Formations by Reverse Engineering and Petroleum Systems;** R. Sorkhabi, P. Panja* (University of Utah)

Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis I

Room 371

Chairs: K. Wu, A. Singh

- 4:05 **Introductory Remarks**
- 4:10 **Mechanical Stratigraphy Modeling, the Foundation of Unconventional Geomechanical Analysis**
R. Bradley, V. Mostafavi (ConocoPhillips)
- 4:35 **A Geomechanical Analysis of Shale Hydraulic Fracturing Containment;** A. Kamali, A. Ghassemi (University of Oklahoma)
- 5:00 **Quasi-Static Fracture Height Growth in Laminated Reservoirs: Impacts of Stress and Toughness Barriers, Horizontal Well Landing Depth, and Fracturing Fluid Density;** M. Mehrabi, Y. Pei, M. Haddad, F. Javadpour, K. Sepehrnoori (The University of Texas at Austin)

Theme 8: Eagle Ford

Room 370

Chairs: H. Kalaei, H. Evans

- 4:05 **Introductory Remarks**
- 4:10 **Multi-Well Modeling in the Eagle Ford: An Investigation of Redevelopment, Infill, and Refrac Opportunities;** C. Karacaer¹, E. Agartan¹, P. Chapman², J. Roberts², D. Glazier², C. Ozgen¹ (¹NITEC LLC; ²Devon Energy)
- 4:35 **Experimental Study of Hydrocarbon Vaporization for EOR Applications in Shales;** J. Odiachi, F. Cruz*, A. Tinnni, C. Sondergeld, C. Rai (University of Oklahoma)
- 5:00 **A Simulation Study to Evaluate Operational Parameter Ranges for a Successful Cyclic Gas Injection in Different Areas of Eagle Ford;** M. Gaddipati, B. Basbug, T. Firincioglu (NITEC LLC)
- 5:25 **Extending the Effective Fracture Lengths Through Mitigation of Water Trapping to Improve Eagle Ford Gas Production**
L. Jin¹, B. Spies², S. Rahagopalan¹ (¹Alchemy Sciences Inc.; ²Ageron Energy LLC)

Theme 10: Innovative Technologies to Reduce Completions Costs

Room 351

Chairs: A. Recio, I. W. R. Saputra

- 4:05 **Introductory Remarks**
- 4:10 **Investigating Effects of Adding Surfactant to Cement Spacer on Mud Removal Performance and Cement Bond with Formation - An Experimental Study;** A. Mansour¹, T. Gamadi¹, H. Emadibaladehi¹, O. Algadi², S. Kakadjian² (¹Texas Tech University; ²NexTier Oilfield Solutions)
- 4:35 **Case Study of a Wireline Deployable Spearhead Acid in the Denver-Julesburg Basin;** K. Yocham¹, D. Allison¹, M. Schwartz² (¹Fluid Energy Group Ltd.; ²Highpoint Resources Corporation)
- 5:00 **Efficient Prediction of Proppant Placement Along a Horizontal Fracturing Stage for Perforation Design Optimization**
J. Wang, A. K. Singh, X. Liu, M. C. Rijken, Y. Tan, S. Naik (Chevron Technical Center)

TUESDAY TECHNICAL PROGRAM

IN PERSON

Panel Session: ESG in Action: Flare Reduction, Leak Detection, Logistics, Blended Solar/Geothermal/Wind Electricity Generation Projects, and Social License to Operate

General Assembly

Moderator: K. Yared

8:25 am–10:10 am (See page 15 for summary)

- S. Dyer, Schlumberger
- A. Scott, Project Canary
- V. Ryan, Chevron
- B. Dindoruk, University of Houston
- H. Soroush, PETROLERN LLC

Special Session: Hydraulic Fracturing Test Site-2 Part IV

Room 360

Chairs: G. Ugueto, J. Ciezobka

8:25 am–10:20 am (See page 16 for summary)

- **Observations and Modeling of Fiber-Optics Strain on Hydraulic Fracture Height Growth in HFTS-2**
J. Wang, Y. Tan, P. Rijken, X. Liu, A. Singh, Y. Li (Chevron)
- **A New Fracture Diagnostic Tool for Unconventionals High Resolution Distributed Strain Sensing via Rayleigh Frequency Shift during Production in Hydraulic Fracture Test 2**
G. Ugueto¹, M. Wojtaszek², S. Mondal¹, A. Gzuk³, D. Jurick³, G. Jin⁴ (¹Shell Exploration & Production Company; ²BSP; ³Neubrex; ⁴Colorado School of Mines)
- **A Systematic Interpretation of Subsurface Proppant Concentration from Drilling Mud Returns: Case Study from Hydraulic Fracturing Test Site (HFTS-2) in Delaware Basin**
D. Maity, J. Ciezobka (Gas Technology Institute)
- **Analysis and Integration of the Hydraulic Fracturing Test Site -2 (HFTS-2) Comprehensive Dataset**
V. S. Pudugramam, Y. Zhao, F. Bessa, J. Li, N. Zakhour, T. Brown, J. Han, I. Harmawan, V. Sahni (Occidental)

Special Session: Best of ARMA

Room 370

Chairs: A. Ghassemi, J. McLennan

8:25 am–10:10 am (See page 16 for summary)

- **Mitigating Hydraulic Fracture Induced Seismicity**; S. Maxwell, Ovitiv
- **Hydraulic Fracture Design Needs Beyond Achieving Short-Term Production Metrics**; M. Pearson, Liberty Resources
- **Completions-Induced Casing Deformations in Unconventionals: What We Think We Know**; N. N. Nagel, OilField Geomechanics LLC
- **Managing Induced Seismicity on Pre-Existing Faults During Hydraulic Fracture Stimulation**; D. Walters, B. Yang, TRS Energy Consultants Ltd

Theme 1: Permian Stacked Pay Development Strategies

Room 351

Chairs: R. A. Hull, S. Szlendak

8:25 **Introductory Remarks**

8:30 **New Insights Into Hydraulic Fracture Dynamics: Learnings from a Pressure Monitoring Well in the Permian Basin**



V. Muralidharan, S. Esmaili (Occidental Petroleum Corporation)

9:20 **Impact of Completion Design on Various Infill Scenarios: A Data Driven Permian Case Study**



C. Darneal, K. Frieauf, K. McLin, H. Zhou, P. Hoang, B. Rajappa, J. Hammond, H. Swan (ConocoPhillips)

Theme 2: High and Low Field NMR Applications

Room 361

Chairs: H. Wang, H. Xie

8:25 **Introductory Remarks**

8:30 **Log and Core NMR T1T2 and T2D Mapping of the Bakken Reservoir Complex**; R. Merkel¹, M. Stephens², C. Thompson², K. McLean³ (¹Denver Petrophysics LLC; ²Crescent Point Energy; ³Emerson Paradigm)

8:55 **Measurement of Effective Tortuosity in Unconventional Tight Rock Using Nuclear Magnetic Resonance**; S. Dang, S. Mukherjee, C. Sondergeld, C. Rai (University of Oklahoma)

9:20 **NMR Quantification of Wettability and Water Uptake in Unconventionals**; D. Veselinovic¹, M. Dick¹, R. Bonnie², S. Kelly² (¹Green Imaging Technologies; ²ConocoPhillips)

9:45 **T1-T2 NMR on Shale Cuttings**; M. Dick¹, D. Veselinovic¹, T. Kenney¹, D. Green¹, A. Haecker², M. Boyce³ (¹Green Imaging Technology; ²Continental Resources; ³Epoch Consulting LLC)

Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis II

Room 371

Chairs: K. Wu, O. Beltran, K. Ramurthy

8:25 **Introductory Remarks**

8:30 **Physics-Based and Data-Driven Models to Predict Production Drivers in the Vaca Muerta Formation**; L. Cruz, J. Ochoa (Equinor)

8:55 **Valuating the Effect of Formation Properties and Completion Design Parameters on Cluster Efficiency Using Advanced Modeling**; V. Sestetty, A. Ghassemi (University of Oklahoma)

9:20 **Modeling and Optimization of Proppant Distributions in Multi-Cluster Hydraulic Fracture-Natural Fracture (HF-NF) Networks**
Y. Wu, G. J. Moridis, T. A. Blasingame (Texas A&M University)

9:45 **Numerical Simulation of Proppant Transport and Deposition in Complex Hydraulic-Natural Fracture Networks**
D. Kumar, B. Liu, A. Ghassemi (University of Oklahoma)

Theme 9: EUR and Performance Prediction and Type Well Profiles

Room 362

Chairs: M. W. Rahman, S. Ketineni

8:25 **Introductory Remarks**

8:30 **A Proposed Methodology to Assess Production Performance for Shale Oil and Gas Wells**; E. L. Dougherty¹, T. Blasingame^{*2} (¹University of Southern California; ²Texas A & M University)

8:55 **A Physically Consistent Decline Analysis Method for Unconventional Wells**; J. A. Acuna (Chevron)

9:20 **Using Bayesian Leave-One-Out and Leave-Future-Out Cross-Validation to Evaluate the Performance of Rate-Time Models to Forecast Production of Tight-Oil Wells**; L. M. Ruiz Maraggi, L. W. Lake, M. P. Walsh (The University of Texas at Austin)

9:45 **Type Wells—A Physics-Blind Statistical Myth? Our RTA-Driven Construction Methodology Proves Otherwise!**
S. Sukumar, J. W. Lee (Texas A&M University)

Theme 7: Data-Driven Forecasting and Combining Physics-Based and Machine-Learning Methods

Exhibit Hall - Station A

Chairs: A. Bailey, N. Nizamidin

9:40 **Introductory Remarks**

9:45 **Are Unconventional Well Performance Gains Exhausted? Investigating the Drivers of Year-Over-Year Production Improvements Across the Major United States Unconventional Plays Using Machine Learning**; T. Cross, J. Chaplin, K. Sathaye, A. Cui (Novi Labs)

Tuesday In Person continued on page 34

*Denotes presenter other than first author | Green icon denotes a team presentation

TUESDAY ONLINE TECHNICAL PROGRAM

ONLINE ONLY

Theme 15: Evaluating and Applying Advanced Methods to Create Value in Unconventionals

Online Only

Chairs: D. Walker, X. Hu

- 8:25 **Introductory Remarks**
- 8:30 **Ordovician Source Rock Potential on the Broome Platform of the Onshore Canning Basin in the Far North of Western Australia**
J. L. van Hattum (Theia Energy Pty Ltd)
- 8:50 **Credible Inventory Characterizations: Earning Back Trust in an Abandoned Market Sector**
D. P. B. Allen (Consultant)
- 9:10 **Experimental Controls on the Transition Between Planar and Branched Hydraulic Fractures**
W. Li, L. Frash, J. W. Carey, M. Meng, N. Welch, H. Viswanathan (Los Alamos National Laboratory)
- 9:30 **Controlling Strontium Scaling in the Permian Basin Through Manipulation of Base Fluid Chemistry and Additives**
E. Spielman-Sun¹, A. D. Jew¹, J. L. Druhan², J. R. Bargar¹ (¹SLAC National Accelerator Laboratory; ²University of Illinois at Urbana-Champaign)
- 9:50 **An Analytical Rate-Transient Analysis Model in Unconventional Light Oil Reservoirs Exhibiting Reservoir Heterogeneity and Multiphase Flow**
J. Li¹, B. Yuan¹, C. R. Clarkson², X. Zhu¹, Y. Li¹ (¹China University of Petroleum; ²The University of Calgary)

Theme 4: Measuring Stress, Strain, and Pressure

Online Only

Chairs: M. Rauch, A. Munoz

- 10:45 **Introductory Remarks**
- 10:50 **A New Pore Pressure Prediction Model for Naturally Fractured Shales and Stacked Plays: The Effect of Active Hydrocarbon Generation - A Powder River Basin Case Study**
D. Orozco, R. Aguilera (University of Calgary)
- 11:10 **Relating Microseismicity to Geomechanical Strain**
A. M. Baig, B. Witten, A. Booterbaugh (Nanometrics)

Topical Luncheon: Energy 4.0: How to Design a Future-Proof Digital Asset that Hits the Financial Bottom Line

Online Only

- 12:15 pm–1:30 pm (See page 17 for summary)
- S. Paranj; Xecta Labs

Topical Luncheon: Environmental, Social and Corporate Governance: A Different Take

Online Only

- 12:15 pm–1:30 pm (See page 17 for summary)
- C. Wright; Liberty Frac

Theme 8: Improving Recovery From Flowback to EOR Potential

Online Only

Chairs: J. Jalali, A. Shannon

- 1:45 **Introductory Remarks**
- 1:50 **Flowback Strategy Optimization for Permian Unconventional Bone Spring Sands and Wolfcamp Wells**
X. Xie, S. Amadi, C. Leiker, S. Liu, E. Kinzler, M. Han, M. Melendez Castillo, S. P. Rivera (Occidental)
- 2:10 **Comparison of CO₂ and Lean Gas Cyclic Injection ('Huff-n-Puff') in Artificially-Fractured Shale Core Samples**
C. Song, C. R. Clarkson, H. Hamdi, A. Ghanizadeh (University of Calgary)
- 2:30 **Fracturing Fluid Loss in Unconventional Reservoirs: Evaluating the Impact of Osmotic Pressure and Surfactant and Methods to Upscale Results**
B. Pan, C. R. Clarkson, A. Younis, C. Song, C. Debuhr, A. Ghanizadeh, V. I. Birss (University of Calgary)

2:50 Innovative Modeling to Quantify the Impact of Natural Fractures, Optimize Well Spacing, and Increase Productivity in the Marcellus Shale

F. Mohamed¹, D. Otulana¹, I. Salazar¹, H. Xue¹, L. Fan², D. Shan², J. Bennett², K. Abubakar², K. Barrie³, B. Yeager³, M. Simpson³, C. Jenkins⁴ (¹Schlumberger; ²Independent; ³Chief Oil and Gas; ⁴Rose and Associates)

Theme 15: Novel Completion Methods to Optimize Costs and Maximize Recovery

Online Only

Chairs: D. L. Loughheed, F. Male

- 1:45 **Introductory Remarks**
- 1:50 **Optimizing The Selection and Application of Chemical Additives in Shale Reservoirs**
J. Yan¹, W. Wang¹, W. Wei¹, G. Winslow² (¹Chevron; ²Chevron, Houston)
- 2:10 **Systematic Comparison of Proppant Placement in SRV Along Two Fractured Wells at the Hydraulic Fracturing Test Site: A Case Study from Midland Basin**
D. Maity, J. Ciezobka (Gas Technology Institute)
- 2:30 **Predicting Estimated Ultimate Recovery from Flowing Material Balance Analysis Considering Rock and Connate Water Expansion for Unconventional Gas Reservoirs**
A. Atadeger¹, M. Onur¹, L. G. Thompson², B. A. Ruddick² (¹The University of Tulsa; ²Cimarex Energy Company)
- 2:50 **Predictive Analysis of Well Interference in Tight Oil Reservoirs**
S. Tavassoli¹, E. Eltahan², K. Smye¹, G. McDaid¹, E. Goodman¹ (¹Bureau of Economic Geology; ²The University of Texas at Austin)

Theme 2: Pore-Network Imaging and Fluid Flow Modeling

Online Only

Chairs: J. Schembre-McCabe, B. Sarmah

- 4:05 **Introductory Remarks**
- 4:30 **Evolution of Gas Transport Mechanisms in Micro/mesopores of Organic-Rich Shales During Hydrocarbon Recovery**
Z. Yang, C. Clarkson, A. Ghanizadeh (University of Calgary)
- 4:50 **Evaluation of Electron Tomography Reconstruction Methods for a Barnett Shale**
L. Frouté, E. Boigné, M. Ihme, A. R. Kovscek (Stanford University)

Theme 7: Machine-Learning for Subsurface Applications

Online Only

Chairs: M. Ashby, S. Matringe, B. Dindoruk

- 4:05 **Introductory Remarks**
- 4:10 **Statistical Analysis of Fractures From the Hydraulic Fracture Test Site 1**
F. Male¹, B. Rysak², R. Dommissie³ (¹UT Austin Center for Subsurface Energy and the Environment; ²The University of Texas at Austin; ³UT Austin Bureau of Economic Geology)
- 4:30 **Vision-Based Sedimentary Structure Identification of Core Images Using Transfer Learning and Convolutional Neural Network Approach**
B. Zhang¹, S. Chen¹, Y. Xiao¹, L. Zhang², C. Wang² (¹Petroleum Exploration and Production Research Institute, SINOPEC; ²China University of Geosciences)
- 4:50 **Machine Learning Applications for a Quantitative Evaluation of the Fracture Network in the Wolfcamp Shale Using Tracer and Completion Data**
A. Kumar, C. Shih, G. Liu, R. Hammack, J. Ilconich, G. Bromhal (National Energy Technology Laboratory)
- ALT **Deep Learning for Quantitative Hydraulic Fracture Profiling From Fiber Optic Measurements**
W. Li¹, H. Lu², Y. Jing², F. Hveding³ (¹Aramco Houston Research Center; ²University of Houston; ³Saudi Aramco)
- ALT **Do We Really Need Deep Learning? A Study on Play Identification Using SEM Images**
H. Zhang, M. T. Kasumov, D. Devegowda*, M. E. Curtis (University of Oklahoma)

TUESDAY TECHNICAL PROGRAM

IN PERSON

- 10:10 **A Novel Probabilistic Approach for GOR Forecast in Unconventional Oil Reservoirs**; Y. Pan¹, G. Li¹, J. Qin², J. Zhang², L. Deng³, R. Bi⁴ (¹PetroChina Exploration and Production Company; ²Xinjiang Oil Field Company; ³Independent Researcher; ⁴Research Institute of Petroleum Exploration & Development)
- 10:35 **Machine Learning and Artificial Intelligence Provides Wolfcamp Completion Design Insight**; R. Shelley¹, H. Melcher², O. Oduba² (¹RF SHELLEY LLC, Well Performance Evaluation; ²Liberty Oilfield Services)
- 11:00 **A Physics-Guided Deep Learning Predictive Model for Robust Production Forecasting and Diagnostics in Unconventional Wells** S. Mohd Razak¹, J. Cornelio¹, B. Jafarpour¹, Y. Cho¹, H-H. Liu², R. Vaidya² (¹University of Southern California; ²Aramco Americas)
- 11:25 **Characterization of Hydraulic Fracture Properties in Eagle Ford Shale Oil Reservoir Using EDFM-AI with Two Fracture Design Scenarios**; C. Liu¹, A. Gupta², W. Yu³, R. Vaidya², N. Li⁴, K. Sepehrmoori¹ (¹UT-Austin; ²Aramco Americas; ³UT-Austin and Sim Tech LLC; ⁴Sim Tech LLC)

Theme 10: Innovative Technologies: New Materials and Workflows

Exhibit Hall - Station B

Chairs: Z. Wang, S. Rhodes

Introductory Remarks

- 9:40 **High Resolution Acoustic Imaging for Geometric Quantification of Eroded Perforations in Hydraulically Fractured Wells** T. Littleford, K. Wardynski, A. Battistel, G. Simpson (DarkVision Technologies Inc.)
- 10:10 **The Effect of Chemical Partition Behavior on Oil Recovery by Wettability Alteration in Fractured Tight Reservoirs**; T. Lawal¹, M. Wang², G. A. Abeykoon², F. J. Argüelles-Vivas², R. OKUNO² (¹The University of Texas; ²The University of Texas at Austin)

Panel Session: Sensors, Automation, and Smart Digital Operations: Where We Are and the Road Ahead

General Assembly

Moderator: D. Hume

10:45 am–12:05 pm (See page 15 for summary)

- A. Nikulin, Aletair
- B. Givhan, Earthview
- D. Thul, Geolumina
- D. Tonner, Diversified Well Logging
- A. Lazarus, Pioneer Natural Resources

Special Session: Hydraulic Fracturing Test Site-2 Part V

Room 360

Chairs: J. Ciezobka, G. Ugueto

8:25 am–12:15 pm (See page 16 for summary)

- **Novel Geochemistry Determined From High Pressure, High Temperature Simulation Experiments of Hydraulic Fracture Test Site 2** D. Gulliver¹, P. Sarkar¹, K. Tinker¹, N. Means¹, J. Fazio¹, W. Xiong¹, A. Hakala¹, C. Lopano¹, S. Leleika², A. Harmon², J. Ciezobka² (¹NETL-DOE; ²Gas Technology Institute)
- **Inference of Induced Fracture Geometries Using Fiber-Optic Distributed Strain Sensing in Hydraulic Fracture Test Site 2** S. J. Bourne¹, K. Hendriks¹, A. Savitski², G. Ugueto², M. Wojtaszek¹ (¹Shell Global Solutions International; ²Shell Exploration & Production Company)
- **Key Learnings from Hydraulic Fracturing Test Site - 2 (HFTS-2), Delaware Basin** Y. Zhao, F. Bessa, V. Sahni, S. Pudugramam, S. Liu (Occidental)

Theme 1: Optimizing Completions, Perforations, and Stimulation Strategies

Room 351

Chairs: K. Dianiska, L. Baez, W. Wu

Introductory Remarks

- 10:45 **Constant Concentration Proppant Schedules for Slickwater Frac Design in Unconventional Resources**; A. Singh, S. Malhotra, D. Wehunt, S. Han, C. Lannen, X. Liu, J. Cooper, A. Kim (Chevron)
- 11:15 **Simple Yet Practical Production Data Characteristics of Cluster Spacing and Stage Length Configurations: A Permian Case Study**; S. Esmaili, N. Zakhour, J. Deng (Occidental)
- 11:40 **Integration of Geology, Geomechanics, and Completion Data in Modeling for Future Well and Completion Optimization: An Unconventional Diyab Case Study** H. Pourpak¹, W. Newby¹, S. Taubert¹, H. Al Marzooqi², M. Z. Baig², A. Lefebvre-Prudencio¹, Y. Wu¹, C. Pointer¹, F. Cafardi³, V. De Gennaro³, L. Nistor³ (¹TotalEnergies; ²ADNOC; ³Schlumberger)

Theme 3: Emerging Geological Evaluations, Tools and Workflows: Data Driven Methods

Room 361

Chairs: E. I. Velez, B. Hill, S. I. Geetan

Introductory Remarks

- 10:45 **Unlocking the Human Factor: Geosteering Decision Making as a Component of Drilling Operational Efficacy**; A. Tadjer¹, S. Alyaev², D. Miner³, I. Kuvaev³, R. B. Bratvold¹ (¹University of Stavanger; ²NORCE Norwegian Research Centre; ³ROGII)
- 11:15 **Use of Machine Learning Production Driver Cross-Sections for Regional Geologic Insights in the Bakken-Three Forks Play** T. Cross, K. Sathaye, J. Chaplin (Novi Labs)
- 11:40 **Real-Time Analysis of Rig-Site Drilling Data Using Automated System to Assist Geosteering and Completion Decision Making** M. Ghazizadeh¹, A. Khodabakhshnejad¹, D. Lowrie² (¹DrillApp Technologies; ²Core Geologic, Inc.)

Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis III

Room 371

Chairs: A. Ghassemi, O. Beltran, K. Ramurthy

Introductory Remarks

- 10:45 **Propagating of Hydraulic Fractures from Horizontal Wellbores: Effects of In-Situ Stress and Near Wellbore Stress Redistribution** Q. Gao¹, D. Zhou¹, A. Ghassemi², X. Liu¹, Y. Liu¹, M. Guo³ (¹Xi'an Shiyou University; ²The University of Oklahoma; ³Northwest University)
- 11:15 **Optimizing Completion Designs for the East Texas Haynesville Utilizing Production Flow Allocations From Lower-Cost Fiber Optic Sensing DAS/DTS Systems** M. Weber¹, D. Weatherly¹, V. Mahue², R. A. Hull², K. Trujillo², R. Bohn², E. Jimenez² (¹RockCliff Energy; ²Silixa)
- 11:40 **A Novel Workflow from StimPlan to EDFM for Complex Hydraulic Fracture Modeling and Production Simulation** Y. Yan¹, J. Deng², D. Guerra², W. Yu^{1,3}, J. Miao¹, (¹Sim Tech LLC; ²NSI Technologies LLC; ³The University of Texas at Austin)

Theme 8: Facilities and Artificial Lift

Room 370

Chairs: R. Kou, D. Ooi, A. Ramkhelawan

Introductory Remarks

- 10:45 **Automating Chemical Injection: A Pilot Field Trial in the Delaware**; S. L. Scott, N. Lehman, J. Harris, M. Garcia, T. Lackey (ConocoPhillips)
- 11:15 **Coupling Physics-Based Full Field Hydraulic Model with Advanced Data Analytics: Evolution of Surface Pipeline Operations**; L. Donnelly¹, M. Albers¹, J. Cameron¹, K. Frame¹, K. Zhang², H. Lu², S. Atmaca², N. Rodriguez² (¹ConocoPhillips; ²Schlumberger)

TUESDAY TECHNICAL PROGRAM

Panel Session: Learning from Other Industries:

A Geothermal Conversation

General Assembly

Moderator: I. Aviles

1:45 pm–3:30 pm (See page 15 for summary)

- A. Ghassemi, University of Oklahoma
- J. Moore, University of Utah
- M. Sharma, University of Texas at Austin
- T. Latimer, Fervo Energy
- D. Rehg, Criterion

Special Session: ConocoPhillips Optimizing Through Completion Design and Production Analysis

Room 351

Chairs: Y. Liu, R. A. Hull

1:45 pm–3:30 pm (See page 16 for summary)

- **To Reduce or Extend? That is the Question: A Tale of Stage Length Optimization in the Delaware Basin**
K. Dhuldhoya, ConocoPhillips
- **Well Performance Management - Case Study for Montney**
V. Bang, K. Yeboa, R. Javadi, C. Robinson (ConocoPhillips)
- **The Case for Surfactant Lift in Oil Wells**
S. L. Scott, N. Lehman, J. Harris, S. Appleyard (ConocoPhillips)
- **Production Diagnostics with Time Lapse Geochemistry**
Y. Song, E. Michael (ConocoPhillips)

Special Session: EOR – Best of Tulsa-Recovery Improvement for Unconventional/Tight Systems

Room 360

Chairs: B. Dindoruk, R. Ratnakar, A. R. Rezaei

1:45 pm–3:30 pm (See page 17 for summary)

- **Successful Field Implementation of CO₂ Foam Injection for Conformance Enhancement in the EVSAGU Field in the Permian Basin**
A. Katiyar, The Dow Chemical Company
- **A Methodological Workflow for Assessment and Design of Huff and Puff - Hydrocarbon Gas Injection Pilot Test as an EOR Technique for Eagle Ford Shale Oil Reservoirs**
A. Baldwin
- **Measurement of Minimum Miscibility Pressure: A State of the Art Review**
B. Dindoruk
- **Evaluation of Eagle Ford Cyclic Gas Injection EOR: Field Results and Economics HTFS**
C. Barden

Theme 2: Rock-Fluid and Fluid-Fluid Interactions - PVT Data Acquisition/Analysis

Room 361

Chairs: L. Baez, K. Jerath

1:45 **Introductory Remarks**

1:50 **Core-Flood Effluent and Shale Surface Chemistries in Predicting Interaction Between Shale, Brine, and Reactive Fluid**

A. S. Gundogar^{2,1}, J. L. Druhan³, C. M. Ross², A. D. Jew¹, J. R. Bargar¹, A. R. Kovscek², (¹SLAC National Accelerator Laboratory; ²Stanford University; ³University of Illinois at Urbana-Champaign)

2:15 **Comprehensive Laboratory Testing for Screening Completion Fluids to Maximize Productivity of Hydraulically Fractured Reservoirs**
E. Kias¹, R. Kumar¹, B. Abell¹, A. Mathur¹, C. Barnes¹, B. Chin¹, S. Ali² (¹WDVG Laboratories; ²WDVG Petroleum Engineering)

2:40 **Rethinking Mineral Scaling: What, Where, and Why is it occurring in the Stimulated Rock Volume**
A. Jew¹, J. R. Bargar¹, J. Brownlow², M. Laughland³ (¹SLAC National Accelerator Laboratory; ²Pioneer Natural Resources; ³Stratum Reservoir)

3:05 **Molecular Simulation of Multi-Scale Multi-Component Hydrocarbon Phase Behavior in Liquid-Rich Shale Reservoirs**
F. Chen, R. Bi, H. Nasrabadi (Texas A&M University)

Theme 3: Reservoir Characterization, Geological Evaluations, and Studies of Unconventional Plays

Exhibit Hall - Station A

Chairs: S. Rudolph, A. Viswanathan

1:45 **Introductory Remarks**

1:50 **Geostatistical Simulation of Facies and Petrophysical Properties for Heterogeneity Modeling in A Tidal Depositional Environment: A Case Study From Upper Shale Member in A Southern Iraqi Oil Field**
W. J. Al-Mudhafar (Basrah Oil Company)

2:15 **A Principal Component Analysis Approach to Understanding Relationships Between Elemental Geochemistry Data and Deposition, Niobrara Formation, Denver Basin, CO**
R. S. ElGhonimy^{2,1}, (¹bp; ²Colorado School of Mines)

Theme 5: Diagnostics and Monitoring with Geomechanical Models

Room 371

Chairs: C. L. Ginn, A. Thombare

1:45 **Introductory Remarks**

1:50 **Evaluation and Insights from Instantaneous Shut-In Pressures**
N. P. Roussel, H. W. Swan, J. R. Snyder, D. H. Nguyen, D. D. Cramer, A. Ouk (ConocoPhillips Company)

2:40 **Quantification of Thermal Effects on Cross-Well Low-Frequency Distributed Acoustic Sensing Measurements**
Y. Liu¹, K. Wu¹, G. Jin², G. Moridis^{1,3}, (¹Texas A&M University; ²Colorado School of Mines; ³Lawrence Berkeley National Laboratory)

3:05 **Quantitative Assessment of Induced Seismicity from Hydrocarbon Production and Produced Water Disposal in Azle Area, North Texas**
J. Park¹, R. Chen¹, A. Datta-Gupta¹, S. Lele², T. Tyrrell³ (¹Texas A&M University; ²ExxonMobil; ³XTO Energy)

2:15 **Earth Model Building in Real-Time with an Automated Machine Learning Framework - A Midland Basin Example**
G. Taylor¹, M. Unaldi¹, A. Sansal², E. Tian³ (¹Quantico Energy Solutions; ²TGS; ³LifeBell AI)

Theme 6: Proven and Potential Applications of Time-Lapse Geochemistry

Room 370

Chairs: C. Donohue, M. Formolo, S. Macalello

1:45 **Introductory Remarks**

1:50 **Applications of Time-Lapse Geochemistry to Delaware Basin Field Development**
Y. Wang¹, F. Esson¹, H. Zhou¹, I. Perez¹, B. Byurchieva¹, P. Hoang¹, E. Michael², K. McLin¹ (¹ConocoPhillips; ²Independent)

2:15 **A Novel Approach to Understanding Multi-Horizon Fluid Flow in Unconventional Wells Using Produced Water Time-Lapse Geochemistry: Powder River Basin, Wyoming**
P. Jones¹, D. Dressler², T. Conner², J. O'Brien², T. Klaassen³, S. Bingham⁴ (¹Consulting Geochemist, Devon Energy; ²Devon Energy; ³Devon Energy (former); ⁴Department of Geology and Geography, Auburn University)

2:40 **Produced Water Chemistry Surveillance and Application in the Permian Basin**
W. Wang, W. Wei, M. Saneifar, B. Liang, J. Parizek, H. Nguyen, M. Menconi, F. Yang, C. Khalili (Chevron Corporation)

3:05 **Machine-Learning Assisted Production Allocation Using A 3-Dimensional Full Field Geochemical Model of Produced Oils in the Eagle Ford and Austin Chalk of South Texas**
J. Jweda, E. Michael (ConocoPhillips)

TUESDAY TECHNICAL PROGRAM

IN PERSON

Theme 9: Future of Production Forecasting and Production Diagnostics

Room 362

Chairs: X. Xue, V. Jayaram, S. Szlendak

1:45 Introductory Remarks

1:50 **Well Performance and Completion Efficiency Assessment in the Delaware Basin Using Diffusive Time of Flight**; J. Park¹, Y. Ben², V. Muralidharan² (¹Texas A&M University; ²Occidental Petroleum)

2:15 **Impact of Fracture Conductivity on Production - How Much Proppant Do We Really Need in Unconventional Reservoirs?** S. Naik, A. Singh (Chevron CTC)

2:40 **Fast Probabilistic Forecasting of Oil Production Using Monte Carlo Simulations on Data Driven Acquisition of Decline-Curve Parameter Distributions**

V. B. K. Chavali, W. J. Lee (Texas A&M University)

3:05 **Application of Bayesian Optimized Deep Bi-LSTM Neural Networks for Production Forecasting of Gas Wells in Unconventional Shale Gas Reservoirs**

Y. Kocoglu, S. Gorell, P. McElroy (Texas Tech University)

Theme 2: Advanced Formation Evaluation and its Impact in Hydrocarbon Recovery

Exhibit Hall - Station A

Chairs: N. Chakraborty, A. Posenato Garcia

3:40 Introductory Remarks

4:10 **Porosity Measurement of Shale Core Plugs Without Chemical Cleaning**; J. Chen¹, S. Althaus¹, M. Boudjatit² (¹Aramco Americas; ²Saudi Aramco)

Theme 9: EUR and Performance Prediction

Exhibit Hall - Station B

Chairs: K. Schwartz, Z. Wang, J. Pearson

3:40 Introductory Remarks

3:45 **Integration of Gas-to-Oil Ratio into Production Decline Analysis to Predict Critical Flow Regime Transitions**

S. Lapierre (Shale Specialists LLC)

4:10 **Understanding Well Performance of Unconventional Extended Laterals in New Mexico, Delaware Basin**

m. han, S. McKone, M. Harty, X. Xie (Occidental Oil and Gas)

4:35 **Implementing the K-Means Clustering Algorithm for the Type Well Generation Workflow in the Eagle Ford Shale**

S. Kryvenko¹, M. Gorditsa², G. Siegel³ (¹Texas A&M University;

²Stronghold Resource Partners; ³Matador Resources Company)

Panel Session: Supply Chains in Energy: Cost Savings, Quality Assurance, 3-D Printing, and Ethical Sourcing

General Assembly

Moderator: C. Glaser

4:05 pm-5:25 pm (See page 16 for summary)

- A. Scott, Project Canary
- D. Herman, Cordax
- J. Guo, Chevron
- R. Puranik, Worldwide Oilfield Machine
- L. Capper, Energy Makers Advisory Group

Theme 1: Navigating Technologies That Deliver Bottom-Line Results

Room 351

Chairs: K. Scott, H. Sun

4:05 Introductory Remarks

4:10 **DAS Recorded Body and Tube Wave Generated by Perforation Shots: Analysis and Numerical Modeling for Completion Monitoring and Reservoir Characterization**

S. Zhang¹, A. Titov², V. Jayaram¹, H. Bello¹, R. Hurt¹, G. Jin² (¹Pioneer Natural Resources; ²Colorado School of Mines)

5:00 **Child Well Fracture Sequencing for Improved Production** R. Suarez-Rivera¹, B. Clark², D. Sassen¹, C. Quinn¹ (¹W.D. Von Gonten Laboratories; ²Sabalo Energy LLC)

Theme 2: Emerging Petrophysical Evaluations

Room 361

Chairs: A. Tinni, J. Salazar

4:05 Introductory Remarks

4:10 **Determination of Pore Fluid Salinity in Tight Rocks Without Fluid Extraction**

J. Odiachi, A. Tinni (University of Oklahoma)

4:35 **Determining Organic Kerogen Maturity, Wettability, and Productivity From Induction Dielectric, Resistivity, and Spectroscopy Measurements**

J. C. Rasmus¹, D. Homan², G. L. Wang² (¹Retired; ²Schlumberger)

5:00 **Impact of Kerogen Geochemistry on Methane and Water Adsorption Using Molecular Simulations**

A. Jagadisan, I. Silveira de Araujo, Z. Heidari (University of Texas at Austin)

Theme 3: Emerging Geological Evaluations, Tools and Workflows: Examples from the Field and Beyond

Room 362

Chairs: T. Watson, M. Poole, K. McLin

4:05 Introductory Remarks

4:10 **Mesoscopic Characterization of the Heterogeneity Within Tight Carbonate Gas Reservoir, Outcrop Study, Saudi Arabia**

M. S. Osman, O. Abdullatif (King Fahd University of Petroleum & Minerals)

4:35 **Regional Comparison of the First Depositional Cycle of the Vaca Muerta in the Northern and Central Portions of the Neuquén Basin.**

J. M. Proctor¹, D. Acebal², G. Davalos¹, S. Olmos², J. d'Hiriart² (¹Halliburton; ²Tecpetrol)

5:00 **Eagle Ford and Bakken Productivity Prediction Using Soil Microbial Fingerprinting and Machine Learning**

M. H. A. A. Zijp¹, T. Mallinson², J. Zwaan¹, A. G. Chitu¹, P. David³ (¹Biodentify; ²Aramco Americas; ³Wintershall Dea)

Theme 4: Novel Seismic Inversion and Attribute Applications

Room 360

Chairs: M. Rauch, A. Bailey

4:05 Introductory Remarks

4:10 **Seismic Investigation of Lithological Controls on Effective Stress**

B. N. Goodway (Qeye)

4:35 **Illuminating Fine-Scale Geology and Creating Robust Seismic Attributes Using High Trace Density Seismic Data in the Midland Basin**

A. Lewis¹, B. Karr¹, R. Bianco², S. Pollock² (¹Fairfield Geotechnologies; ²Fasken Oil and Ranch)

5:00 **Total Organic Carbon Content Estimation of Bakken Formation, Kevin-Sunburst Dome, Montana Using Post-Stack Inversion, Passey Method and Multi-Attribute Analysis**

S. A. Samuel, R. Zhang (University of Louisiana at Lafayette)

TUESDAY TECHNICAL PROGRAM

Theme 6: Analytical Advances in Applied Petroleum Geochemistry

Room 370

Chairs: H. Carvajal-Ortiz, E. Michael, Y. Wang

4:05 Introductory Remarks

4:10 **Stratigraphic Distributions of Volatile Compounds in Samples of the Cretaceous Mowry Shale, Wind River, and Bighorn Basins, Determined by Vacuum Extraction and Cryotrap Mass Spectrometry**

C. Smith, M. Smith (Advanced Hydrocarbon Stratigraphy)

4:35 **Produced Gas and Condensate Geochemistry of the Marcellus Formation: Insights into Petroleum Maturity, Migration, and Alteration in an Unconventional Shale Reservoir**

C. D. Laughrey (Stratum Reservoir)

5:00 **Application of Geochemistry to Assessing Refrac Jobs in the Bakken/Three Forks Hybrid Play;** H. Long¹, E. Michael², Y. Liu¹, N. McMahan¹, A. Farthing³ (¹ ConocoPhillips; ² ConocoPhillips (retired); ³ ConocoPhillips Company)

Theme 8: Northern Shales

Room 371

Chairs: W. Wang, W. Rahman

4:05 Introductory Remarks

4:10 **Bakken Unconventional Well Gas-Oil Ratio (GOR) Behavior Characterization**

Y. Liu, B. Coffman, N. McMahan, A. Farthing (ConocoPhillips)

4:35 **Effects of Molecular Level Forces on the Diffusivity Characteristics of Hydrocarbons in Shale Reservoirs**

Y. Coskuner, X. Yin, E. Ozkan (Colorado School of Mines)

5:00 **Quantifying the Diminishing Impact of Completions Over Time Across the Bakken, Eagle Ford, and Wolfcamp Using a Multi-Target Machine Learning Model and SHAP Values**

T. Cross, D. Niederhut, A. Cui, K. Sathaye, J. Chaplin (Novi Labs)

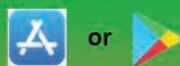
**Denotes presenter other than first author | Green icon denotes a team presentation*



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Automation with Innovation

WEDNESDAY TECHNICAL PROGRAM

IN PERSON

Panel Session: Assessing Risk and Evaluating Opportunities from Different Perspectives

General Assembly

Moderators: I. Aviles and J. Grant

8:25 am–10:10 am (See page 18 for summary)

- R. Gilbert, Gilbert Energy
- R. LeBlanc, IHS Markit
- J. Grant, Chesapeake
- P. Sharma, Inveniam
- N. Jah, Schlumberger

Special Session: DOE Fundamental Shale Research Program I

Room 360 (Speakers presenting via Zoom)

Chair: I. Aviles

8:25 am–10:10 am (See pages 19 and 20 for summary)

Panel 1: Understanding Unconventional Reservoirs: DOE Fundamental Shale Research Program

- **Understanding Unconventional Reservoirs: DOE Fundamental Shale Research Program**, E. Melchert, Department of Energy
- **Unlock Nanopores: Fundamental Understanding and Engineering Implications**, Y. Wang, Sandia National Laboratories
- **Scale Mineralization in Fracture Faces: Impact of Fluid-Rock Interactions on Permeability**, J. Bargar
- **Impact of Reactive Flow Pathway on Permeability Changes Along Primary Fractures**, A. Hakala
- **Incorporating Nanoconfinement Effects into Reservoir Simulators**, H. Viswanathan
- Q&A

Panel 2: Insights on Relationship Between Matrix Geochemistry and Production: From Pores to Fractures

- **Engineering Efficient Frac Geometry for More Efficient and Environmentally Friendly Production**, J. Morris
- **Optimization of HProduction from Natural Fractures**, B. Carey
- **Proppant Behavior in Fractures - Optimizing Fracture Sustainability**, T. Kneafsey
- **The HFTS Project Contribution to Understanding the Multi-Scale Behavior of the Fractured Ultra-Low Permeability Systems: Observations and Practical Implications**, G. Moridis
- Q&A

Theme 3: Structural Geology as Applied in Unconventionals

Room 351

Chairs: H. Watkins, B. Hill, J. Hnat

- 8:25 **Introductory Remarks**
- 8:30 **Delaware Basin Wolfcamp Fm. Maturation and Post-Permian Basin Evolution Based on 2D Restorations and Basin Modeling**
R. Hoar, M. Becker, A. Yu (Texas A&M University)
- 8:55 **A Streamlined Approach to Fault Stress Analysis and Natural Fracture Prediction**
S. Busetti (Aramco Services Company)
- 9:20 **Anisotropy in Fracture Networks: Scale-Dependent Clustering and Flow Behavior**
A. Roy, A. K. Sahu (Indian Institute of Technology Kharagpur)
- 9:45 **Application of Artificial Intelligence Tools for Fault Imaging in an Unconventional Reservoir: A Case Study from the Permian Basin**
H. Garcia, L. Plant (Geoteric)

Theme 6: Understanding and Predicting Producing Fluids

Room 371

Chairs: W. Wang, O. Woodruff, A. Jew

- 8:25 **Introductory Remarks**
- 8:30 **Identifying the Origin of Large Variations in Gas-Oil Ratios at Horizontal Wells Landed in Upper Wolfcamp Reservoirs in the Delaware Sub-Basin Using Gas Isotope, SARA, and HRGC Data**
J. Adams, A. S. Kornacki (Stratum Reservoir)
- 8:55 **Left Behind: A Thrilling Post-Expulsion Adventure of Producing Hydrocarbons Remaining in Source Rocks**
S. Wright¹, N. J. Hogancamp^{1,2}, J. G. Guthrie³, J. Wolters¹, (1Hess Corporation; 2University of Houston; 3Stratum Reservoirs)
- 9:20 **Determining the Proportions of Producing Oil, Non-Producing Sorbed Petroleum, and Immobile Bitumen in Upper Wolfcamp Core Samples, Delaware Sub-Basin**
A. S. Kornacki (Stratum Reservoir)
- 9:45 **Hydrocarbon Drainage Index Optimizes Lateral Placement**
R. Schrynemeeckers (Amplified Geochemical Imaging, LLC)

Theme 10: Friction Reducers and Other Completion Fluids

Room 361

Chairs: K. Hoeman, D. N. Benoit, D. Singh

- 8:25 **Introductory Remarks**
- 8:30 **Experimental Investigation of Proppant Placement in Multiple Perforation Clusters for Horizontal Fracturing Applications**
F. Ahmad¹, J. Miskimins¹, X. Liu², A. Singh², J. Wang² (1Colorado School of Mines; 2Chevron Corporation)
- 8:55 **Universal Behavior of Polyacrylamide-Based Friction Reducers: Achieving Quantitative Lab Evaluation to Analytical Scale-Up Model Development for Field Performance Prediction**
N. Nizamidin, G. Matovic, D. H. Kim, T. Theriot, H. Linnemeyer, S. Han, T. Malik (Chevron Corporation)
- 9:20 **Case Study: Boosting Friction Reduction with Surfactant Solutions**
B. Seymour¹, A. Phatak¹, V. Gupta², V. Gupta² (1Stepan Oilfield Solutions; 2APEX Resources)
- 9:45 **Innovative Cationic Viscoelastic Friction Reducer For Hydraulic Fracturing Application**
F. Malekhamadi¹, N. Moringo¹, L. Adams¹, B. Price¹, Y. Li¹, S. Kakadjian², J. Kitchen², K. Trego² (1Rockwater Energy Solutions; 2NexTier Oilfield Solutions)

Theme 12: Maximizing and Delivering Value

Room 370

Chairs: D. Valteau, L. Baez

- 8:25 **Introductory Remarks**
- 8:30 **Characterization and Remediation of Scale in Three Horizontal Wells in the Point Pleasant Formation, Appalachia, Pennsylvania**
A. Roberts, E. Fonseca, T. Tekavec (Shell Exploration & Production)
- 8:55 **A Retrospective Look at Completion Design Optimization Based on Market Conditions**
K. Ferguson¹, N. Johnson², B. Rowley¹ (1Universal Pressure Pumping, Inc; 2Pennsylvania General Energy Co., LLC)
- 9:20 **Machine Learning Methods in the Williston: A Case Study in Productivity Decay and the Implications For Inventory Exhaustion**
B. L. Myers¹, R. Duman¹, T. Cross², B. Shattuck¹, B. Davis¹ (1Wood Mackenzie; 2Novi Labs)
- 9:45 **Data to Decision: A Unified and Rapid Workflow for Unconventional Reservoirs Blending Data Analytics, Physics-Based Completion Optimization, and Investor-Oriented Economics**
G. Voneiff, P. Bastian (Datagration Solutions Inc.)

Wednesday In Person continued on page 40

WEDNESDAY ONLINE TECHNICAL PROGRAM

ONLINE ONLY

Topical Breakfast: The Great Transition?

Online Only

7:00 am–8:15 am (See page 18 for summary)

- A. Nelson, Arcadius Capital

Topical Breakfast: Hess In The Bakken: Lean and Innovation Driving the Next Stage of Development

Online Only

7:00 am–8:15 am (See page 18 for summary)

- D. McMichael, Hess

Special Session: Best of URTeC Latin America I

Online Only

Chair: L. Baez

(See pages 19 and 20 for summary)

- 8:25 **Introductory Remarks**
- 8:30 **Standardized Workflow For Aquifer Characterization In Neuquén Unconventional Oil And Gas Blocks**
L. Rodriguez, La Calera, Pluspetrol
- 8:50 **Real Time Series Analysis for Early Frac-Hit Detection in Vaca Muerta's Natural Flowing Wells**
L. Gonzalez Day, Data Science, YPF
- 9:10 **Case of Study: Applying Data Analytics to Reveal Most Important Parameters Impacting Well Production Performance in Vaca Muerta Unconventional Formation**
A.L. Lerza, Chevron Corporation
- 9:30 **Machine Learning and Hydraulic Fracture Simulation to Speed up Well Completion Optimization Understanding in Vaca Muerta Formation, Neuquén Basin, Argentina**
D. Hryb

Special Session: Best of URTeC Latin America II

Online Only

Chairs: L. Bae

(See pages 19 and 20 for summary)

- 10:45 **Introductory Remarks**
- 10:50 **Geocellular Model for Vaca Muerta Characterization**
J.S. Gait, C. B. Crovetto*, Pan American Energy
- 11:10 **High Resolution Geomechanical Model and its Impact on Hydraulic Fracture Height Growth. An Example from Vaca Muerta Formation, Argentina**
D. Hryb
- 11:30 **Pozo D-129 Formation: The Case of a Recent Shale Oil Discovery in a Lacustrine Source Rock in El Huemul Field, Golfo San Jorge Basin, Southern Argentina**
P. Caprioglio¹, G. Jarque¹, M. Irigoyen¹, G. Maiztegui¹, N. Luz¹, A. D'Agostino¹, M. Casal¹, D. Villalba², H. Villar²; ¹Sinopec Argentina Exploration and Production, Inc., ²GeoLab Sur S.A.

Theme 4: Quantifying Natural Fracture Properties and Reservoir Pressure

Online Only

Chairs: A. Munoz, A. Bailey

- 10:45 **Introductory Remarks**
- 10:50 **Underpressure Distribution and Origin of the Tight Gas Reservoirs in Middle Jurassic J₂ sh Formation of the Central Sichuan Basin, Southwestern China**
Q. Wang, D. Chen, X. Gao, Y. Zou (China University of Petroleum(Beijing))
- 11:10 **Quantifying Crack Properties of Source Rocks from Elastic Stress Sensitivity**
J. Ding¹, A. C. Clark¹, T. Vanorio¹, A. D. Jew², J. R. Bargar² (¹Stanford University; ²SLAC National Accelerator Laboratory)
- 11:30 **Automated Reconstruction of Fracture Networks**
J. O. Guerrero, B. Chang, D. Hachem, M. Prodanovic, D. N. Espinoza (The University of Texas at Austin)
- ALT **Applications of Machine Learning for Estimating the Stimulated Reservoir Volume (SRV)**
A. Rezaei^{2,1}, F. Aminzadeh^{2,1}, E. VonLunen¹, (¹FACT Inc; ²University of Houston)

Topical Luncheon: Promoting Cased Hole Formation Evaluation (CHFE) as an Alternative to Openhole Logging for Completion Design in Horizontal Wells

Online Only

12:15 pm–1:30 pm (See page 21 for summary)

- J. Hemingway; SPWLA President

Special Session: Carbon Capture, Utilization, and Storage I

Online Only

Chair: S. Nash

- 1:45 **Introductory Remarks**
- 1:50 **CCUS Technical Considerations**
R. Grover, Schlumberger
- 2:05 **Geomechanics for Safe Carbon Sequestration**
H. Soroush, Petrolern
- 2:20 **Methane Detection with Remote Sensing Modalities in Conjunction with CCUS**
A. O'Conner, L3Harris
- 2:35 **Focus on Energy Storage**
H. Leetaru, Illinois Geological Survey
- 2:50 **Derisking Secure CO₂ Storage**
S. Melzer, Melzer Consulting

Special Session: Carbon Capture, Utilization, and Storage II

Online Only

Chairs: S. Nash

- 3:50 **Introductory Remarks**
- 3:55 **Developments and the Road Ahead**
T. Meckel, Bureau of Economic Geology
- 4:10 **CCS Projects in North Dakota**
J. Sorensen, University of North Dakota Energy & Environmental Research Center
- 4:25 **On Challenges and Opportunities for CCUS Projects in Kansas**
E. Holubnyak, Kansas Geological Society
- 4:40 **Geoscience and Data in Decarbonised Offshore Integrated Energy Systems Including CCUS**
M. Stephenson, British Geological Survey
- 4:55 **Threading the Needle: Subsurface Evaluation of the Northern Lights CO₂ Storage Project**
R. Meneguolo, Equinor

ALT = Alternate speaker

WEDNESDAY TECHNICAL PROGRAM

IN PERSON

Theme 2: Emerging Petrophysical Evaluations and Completion Quality

Exhibit Hall - Station A

Chairs: B. Liang, K. Yared

9:40 Introductory Remarks

9:45 Semi-Automated Lateral Landing Advisor For On Time Decisions Utilizing Digital Borehole Sonic Services and Next Generation Cloud Based Frac Design

E. I. Velez, J. D. Estrada, A. Donald, R. Prioul, T. Lei, E. Wielemaker, V. Lujan (Schlumberger)

10:10 Improved Nanoscale Image-Based Reservoir Characterization Using Supervised Machine Learning

S. L. Eichmann¹, P. Srinivasan¹, K. Kenga¹, M. Khan¹, F. Duque², F. Oyarzabal², J. Howard³, S. Zhang³ (¹Aramco Services Company: Aramco Research Center - Houston; ²Saudi Arabian Oil Company; ³DigiM Solution, LLC)

10:35 A Study of Graphite Water Mixtures and Their Direct Current Conductivity as a Function of Frequency and Petrophysical Properties

J. C. Rasmus¹, D. Homan², G. L. Wang² (¹Retired; ²Schlumberger)

11:00 Evaluating the STACK and SCOOP Rock and Petroleum System History: Combined Rock Volatiles and Petrophysics Data of Cored Wells Across the Anadarko

M. P. Smith¹, A. Leavitt², O. Djordjevic², J. Sinclair², R. Brito², C. M. Smith¹, P. S. Gordon¹, T. M. Smith¹, J. Hustedt³ (¹Advanced Hydrocarbon Stratigraphy; ²Ovintiv; ³Baker Hughes)

Theme 5: Geomechanical Models and Experimental Rock Mechanics

Exhibit Hall - Station B

Chairs: L. Louis, S. Rhodes

9:40 Introductory Remarks

9:45 Well Interference Testing Using Fiber Optics Production Analysis

M. A. Grubert (OptaSense Inc.)

Panel Session: Earth's Surface Imaging for Pivoting: Affordable Drones & Satellite Imaging Geological Exploration and Operations, Environmental Monitoring and Energy Utilization

General Assembly

Moderator: A. Rivera

10:45 am–12:05 pm (See page 18 for summary)

- Introductory Remarks
- V. Natalie, Oklahoma State University
- D. Taranik, Exploration Mapping
- F. Lopez, Kairos Aerospace
- S. Garg, DataVedik
- R. Bell, Drone Geoscience, LLC
- S. Baker, Amazon Web Services

Special Session: DOE Fundamental Shale Research Program II

Room 360 (Speakers presenting via Zoom)

Chairs: I. Aviles

10:45 am – 12:05 pm

Panel 3: Insights on How to Optimize Production: Take-Home Messages

- **The Role of Pressure Management in Maximizing Production and Minimizing Environmental Impact;** H. Viswanathan
- **Understanding Geochemical Signatures in Unconventional Reservoirs;** C. Lopano
- **The Interplay Between Injection Fluid Chemistry and the Stimulated Rock Volume: Addressing the Roles of Base Fluids, Additives, and Solids**
A. Jew; SLAC National Accelerator Laboratory
- **Q&A**
- **Integrated Q&A and Discussion**

Theme 3: New Ideas and Workflows for Reservoir Characterization of Unconventional Reservoirs

Room 351

Chairs: D. Hume, R. Laronga, E. Haddad

10:45 Introductory Remarks

10:50 Quartz Fabric in Shales: Quantification and Assessing its Influence on Geomechanical Properties

M. R. Stokes¹, A. P. Rathbun², P. C. Montgomery², M. C. Cheshire², E. R. Peacher² (¹U.S. Geological Survey; ²Chevron)

11:15 Horizontal Well Evaluation to Determine Geological Facies, Mechanical Properties, and Natural Fracture Changes Using Slim Through-the-Bit Dipole Sonic and Oil-Based Microimaging Tools

E. I. Haddad¹, E. Velez¹, F. Al Shaikh¹, C. Schrader¹, K. Barrie² (¹Schlumberger; ²Chief Oil and Gas)

11:40 The Giant, Continuous Three Forks Play, Williston Basin

S. Sonnenberg (Colorado School of Mines)

Theme 7: Data-Driven Production Forecasting and Optimization

Room 361

Chairs: M. Gurfinkel, R. Kou, M. Ashby

10:45 Introductory Remarks

10:50 Autoregressive and Machine Learning Driven Production Forecasting - Midland Basin Case Study

I. Gupta¹, O. Samandarli¹, A. Burks¹, V. Jayaram¹, D. McMaster¹, D. Niederhut², T. Cross² (¹Pioneer Natural Resources; ²Novi Labs)

11:15 Technical Resource Potential Estimation Using Machine Learning and Optimization for the Delaware Basin

H. Zalavadia, Y. Ben, R. Gordillo, S. Lauver (Occidental)

11:40 Machine Learning Approach to Improve Calculated Bottom-Hole Pressure

E. Eltahan¹, R. Ganjanesh¹, W. Yu^{1,2}, K. Sepehrnoori¹, R. Williams³, J. Nohavitz³, (¹The University of Texas at Austin; ²Simtech LLC; ³EP Energy)

Theme 8: Flow and Phase Behavior

Room 370

Chairs: G. Norton, H. Nasrabadi

10:45 Introductory Remarks

10:50 Comparison of Hydrocarbon Gas and CO₂ for Shale Oil Huff-n-Puff EOR

T. Zeng, Y. Guo*, K. Mohanty (The University of Texas at Austin)

11:15 The Gas Huff-n-Puff PVT Experiment

M. L. Carlsen¹, S. Mydland^{1,2}, C. H. Whitson^{1,2}, (¹Whitson AS; ²NTNU)

11:40 Discovery Science of Hydraulic Fracturing and Shale Fundamentals

M. Mehana¹, J. Santos², C. Neil¹, M. Sweeney¹, J. Hyman¹, S. Karra¹, H. Xu¹, Q. Kang¹, J. Carey¹, G. Guthrie¹, H. Viswanathan^{1,3}, (¹Los Alamos National Lab; ²University Of Texas At Austin; ³University of Texas)

Panel Session: The New Way to Work: Digital Platforms, Cloud-Based Collaborations, and Ecosystems

General Assembly

Moderator: A. Munoz

1:45 pm–3:30 pm (See page 19 for summary)

- Introductory Remarks
- J. Grant, Chesapeake
- L. Dennett, Wood Mackenzie
- V. Meyer, PetroCubic
- S. Namasivayam, TGS
- P. Herve, SparkCognition
- J. Fitzgerald, Energy Freelancer/Mineralware

WEDNESDAY TECHNICAL PROGRAM

Special Session: Best of SPWLA

Room 360

Chair: K. Yared

(See page 20 for summary)

- 1:45 **Introductory Remarks**
- 1:50 **Inversion-Based Measurement Interpretation of a New Ultra-Slim Photorealistic Borehole Imager for OBM**
Y. Chen
- 2:15 **Adaptation of Crushed Rock Analysis to Intact Rock Analysis for Improving Water Saturation Assessment and Fast Pressure Decay Permeability Quantification**
K. Cheng
- 2:40 **Enhanced Assessment of Fluid Saturation in the Wolfcamp Formation of the Permian Basin**
S. Dash, Petroleum Engineering, UT Austin
- 3:05 **Measuring Kerogen, Solid Organics, and Oil Production Potentials of Unconventional Source Rocks Using Solid-Type 20MHz NMR Techniques**
H. Xie

Theme 3: Regional Geological Evaluations and Studies of Unconventional Plays

Room 371

Chairs: A. Castaldo, M. Poole, M. Belobraydic

- 1:45 **Introductory Remarks**
- 1:50 **Examining the Origins and Yield Impact of a Stratified Oil Column in the Montney Formation, Northeast British Columbia**
D. P. Laycock, E. A. Watt, R. C. Tobin, S. A. Kelly, E. Michael, M. N. Johnston (ConocoPhillips)
- 2:15 **Evaluating the Liquids Potential and Distribution of West Virginia's Marcellus Liquids Fairway**
C. Smith¹, S. Pool², P. Dinterman², J. Moore², T. Vance², T. Smith¹, P. Gordon¹, M. Smith¹ (¹Advanced Hydrocarbon Stratigraphy; ²West Virginia Geological and Economic Survey)
- 2:40 **Paleoredox Conditions of Early Carboniferous Upper Bakken Shale, Williston Basin**
D. Nandy^{2,1}, S. Kumar^{2,1}, S. A. Sonnenberg¹, (¹Colorado School of Mines; ²Shell)
- 3:05 **High Resolution Reservoir Characterization; the Lewis Shale, Greater Green River Basin, Wyoming**
L. C. Mayorga-Gonzalez, S. A. Sonnenberg (Colorado School of Mines)

Theme 7: The New Frontier: Combining Physics-Based and Machine-Learning Methods

Room 361

Chairs: B. Dindoruk, M. Gurfinkel, S. Matringe

- 1:45 **Introductory Remarks**
- 1:50 **A Physics-Informed Machine Learning Workflow to Forecast Production in a Fractured Marcellus Shale Reservoir**
M. R. Gross¹, J. Hyman¹, D. O'Malley¹, S. Karra¹, M. Mudunuru², M. Sweeney¹, L. Frash¹, B. Carey¹, G. Guthrie¹, T. Carr³, H. Viswanathan¹ (¹Los Alamos National Laboratory; ²Pacific Northwest National Laboratory; ³West Virginia University)
- 2:15 **Using the Adaptive Variable Structure Regression Approach in Data Selection and Data Preparation for Improving Machine Learning Based Performance Prediction in Unconventional Plays**
C. Ashayeri, M. Korjani, I. Ershaghi (University of Southern California)
- 2:40 **Physics-Assisted Transfer Learning for Production Prediction in Unconventional Reservoirs**
J. Cornelio¹, S. Mohd Razak¹, A. Jahandideh¹, B. Jafarpour¹, Y. Cho¹, H-H. Liu², R. Vaidya² (¹University of Southern California; ²Aramco Americas)
- 3:05 **Merging Physics and Data-Driven Methods for Field-Wide Bottomhole Pressure Estimation in Unconventional Wells**
D. Molinari, S. Sankaran (Xecta Digital Labs)

Theme 10: Workflows to Identify Fracture Geometry/Methods for Subsurface Reservoir Characterization

Room 351

Chairs: D. Hume, C. Neale

- 1:45 **Introductory Remarks**
- 1:50 **Defining Hydraulic Fracture Geometry Using Image Logs Recorded in the Laterals of Horizontal Infill Wells**
D. P. Craig¹, T. Hoang¹, H. Li¹, J. Magness¹, C. Ginn¹, V. Auzias² (¹Occidental Oil & Gas; ²Consultant)
- 2:15 **New Insights on Near-Wellbore Fracture Characteristics from High-Resolution Distributed Strain Sensing Measurements**
Y. Liu¹, G. Jin², K. Wu¹ (¹Texas A&M University; ²Colorado School of Mines)
- 2:40 **Analytical Tracer Interpretation Model for Fracture Flow Characterization and Swept Volume Estimation in Unconventional Wells**
L. Jain, S. Doorwar, D. Emery (Chevron Corporation)
- 3:05 **New Approach to Reveal Compartmentalization in Montney Horizontal Wells for Completion Design Optimization**
J-Y. D. Chatellier¹, T. Euzen² (¹Tecto Sedi Integrated Inc; ²IFP Technologies (Canada) Inc.)

Theme 13: Focus on Methane: The Regulatory Challenges and Monitoring for the Future

Room 370

Chairs: A. Fetch, E. Tokarz

- 1:45 **Introductory Remarks**
- 1:50 **Unconventional Regulations: How the Development of Unconventional Resources Has Impacted Oil and Gas Regulations in the United States**
D. Ryan, J. Benton, E. Halpern (SPE)
- 2:15 **Carbon Neutral Fuel from Light Tight Oil -A Value Proposition**
C. A. Ehlig-Economides (University of Houston)
- 2:40 **Strategy Optimization and Technology Evaluation for Oil and Gas Methane Emission Detection**
R. Kou, A. Lararus, S. Sridharan, V. Jayaram (Pioneer Natural Resources)
- 3:05 **Monitoring Methane Leaks at Oil and Gas Facilities Using the Same Sensor on Satellite and Airborne Platforms**
Á. Esparza, J-F. Gauthier (GHGSat)

WEDNESDAY TECHNICAL PROGRAM

IN PERSON

Panel Session: Global Unconventionals

General Assembly

Moderator: L. Baez

3:50 pm–5:10 pm (See page 19 for summary)

- Introductory Remarks
- M. Al Zaabi, ADNOC
- D. Close, Santos
- R. Clarke, Wood Mackenzie
- Q&A

Theme 4: Tools and Techniques for Measuring Fracture Interactions

Room 361

Chairs: A. Bailey, M. Rauch

3:50 **Introductory Remarks**

3:55 **Measurement Environment's Effect on DTS Surveys: A Case Study on Fiber Cable-Wellbore Coupling**

K. Kutun, G. Jin, J. L. Miskimins (Colorado School of Mines)

4:20 **Combining Fracture Depletion Mapping with Image Logs to Better Understand Fracture Driven Interactions**

K. Wutherich, W. Katon, B. Sinosis, J. Glascock (Drill2Frac)

4:45 **Modeling of Distributed Strain Sensing (DSS) and Distributed Acoustic Sensing (DAS) Incorporating Hydraulic and Natural Fractures Interaction**

K. G. Ramos Gurjao¹, E. Gildin¹, R. Gibson², M. Everett¹ (¹Texas A&M University; ²NanoSeis)

Theme 8: Modeling

Room 351

Chairs: Y. Pei, J. Wang

3:50 **Introductory Remarks**

3:55 **A Reduced Physics Modeling Approach to Understand Multiphase Well Production Performance for Unconventional Reservoirs**

D. Molinari, S. Sankaran (Xecta Digital Labs)

4:20 **A Multi-Factor Approach to Optimize Horizontal Shale Wells Flowback and Production Operation**

Y. Liu¹, R. M. Jones¹, H. Lu^{*2}, K. Putri², S. Atmaca², N. J. R. Gonzalez² (¹Shell Exploration and Production Company; ²Schlumberger)

4:45 **An Experimental Investigation of Oil Recovery in Tight Rocks Using Mixtures of Gases and Nanoparticles**

Z. Quintanilla¹, W. Ozowe¹, R. Russell¹, M. Sharma¹, R. Watts², F. Fitch², Y. K. Ahmad³ (¹The University of Texas at Austin; ²Messer Americas; ³Nissan Chemical America Corporation)

Theme 9: Well Spacing and Well Interference Impact

Room 360

Chairs: D. S. Jones, A. Betancourt, Y. Pradhan

3:50 **Introductory Remarks**

3:55 **Analysis of Well Interference in Delaware Basin: A Physics-Based and Data-Driven Approach**

E. Eltahan¹, S. Tavassoli², B. Casey², G. McDaid², E. Goodman² (¹The University of Texas at Austin; ²Bureau of Economic Geology at the University of Texas at Austin)

4:20 **Evaluation of Parent Well Production Changes Caused by Child Well Frac Hits Using A Pressure Integration Approach**

Y. Guo¹, P. Ashok^{*1}, E. van Oort¹, M. Isbell², E. Butler², A. Riopelle³ (¹The University of Texas at Austin; ²Hess Corporation; ³Marathon Oil Corporation)

4:45 **Spacing Classification System Delivers Enhanced Confidence in Modeling Unconventional Resource Plays**

S. Valdez¹, R. Quigley¹, T. Najvar¹, A. Beckendorf¹, A. Taberner¹, L. Skrobarczyk¹, G. Olsen¹, J. Lee² (¹VSO Petroleum Consultants; ²Texas A&M University)

Theme 10: Novel Proppants, Low Environmental Impact Fluids and Additives

Room 370

Chairs: R. Powell, T. Mallinson

3:50 **Introductory Remarks**

3:55 **Proppant Delivered Scale Inhibition – Unconventional Case Histories**

T. Palisch, J. Leasure^{*} (CARBO Ceramics)

4:20 **Newest State of the Art Neutrally Buoyant Proppant Facilitates Placement Throughout Created Vertical Fractures to Provide Substantial Production Uplift in Unconventional Wells**

H. D. Brannon, N. Hoffman (Sun Specialty Products)

4:45 **Experimental Investigation of Foam Rheology in Rough Fractures**
A. Radhakrishnan, K. Johnston, M. Prodanovic, D. DiCarlo (The University of Texas at Austin)

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PRESENTER CROSS REFERENCE

	Name	Day	Time	Location	Session Title
A	Abell, Bradley	Mon	3:05 pm	Room 371	Theme 5: Experimental Rock Mechanics II
	Acuna, Jorge	Tue	8:55 am	Room 362	Theme 9: EUR and Performance Prediction and Type Well Profiles
	Adams, Jennifer	Wed	8:30 am	Room 371	Theme 6: Understanding and Predicting Producing Fluids
	Ahmad, Faraj	Wed	8:30 am	Room 361	Theme 10: Friction Reducers and Other Completion Fluids
	Al Zaabi, Mohamed	Wed	3:55 pm	General Assembly	Panel: Global Unconventionals
	Alarfaj, Malik	Mon	1:50 pm	Room 362	Theme 9: EUR and Performance Prediction - DCA and Beyond II
	Albannay, Aamer	Mon	11:30 am	Online Only	Theme 5: Experimental Rock Mechanics I
	Ali, Safdar	Tue	4:10 pm	Room 370	Theme 6: Analytical Advances in Applied Petroleum Geochemistry
	Allen, David	Tue	8:50 am	Online Only	Theme 15: Evaluating and Applying Advanced Methods to Create Value in Unconventionals
	Al-Mudhafar, Watheq	Tue	1:50 pm	Exhibit Hall - Station A	Theme 3: Reservoir Characterization, Geological Evaluations, and Studies of Unconventional Plays
B	Ashayeri, Cyrus	Wed	2:15 pm	Room 361	Theme 7: The New Frontier: Combining Physics-Based and Machine-Learning Methods
	Ashok, Pradeepkumar	Wed	4:20 pm	Room 360	Theme 9: Well Spacing and Well Interference Impact
	Atadeher, Aykut	Tue	2:30 pm	Online Only	Theme 15: Novel Completion Methods to Optimize Costs and Maximize Recovery
	Baig, Adam	Tue	11:10 am	Online Only	Theme 4: Measuring Stress, Strain, and Pressure
	Baker, Shaun	Wed	10:45 am	General Assembly	Panel: Earth's Surface Imaging for Pivoting: Affordable Drones & Satellite Imaging Geological Exploration and Operations, Environmental Monitoring and Energy Utilization
	Baldwin, Amanda	Tue	2:15 pm	Room 360	EOR Special Session: Best of Tulsa-Recovery Improvement for Unconventional/Tight Systems
	Bang, Vishal	Tue	2:15 pm	Room 351	ConocoPhillips Special Session: Optimizing Through Completion Design and Production Analysis
	Barden, Chris	Tue	3:05 pm	Room 360	EOR Special Session: Best of Tulsa-Recovery Improvement for Unconventional/Tight Systems
	Bargar, John	Wed	8:40 am	Room 360	Special Session: DOE Fundamental Shale Research Program I
	Bell, Ron	Wed	10:45 am	General Assembly	Panel: Earth's Surface Imaging for Pivoting: Affordable Drones & Satellite Imaging Geological Exploration and Operations, Environmental Monitoring and Energy Utilization
C	Bessa, Fadila	Mon	10:45 am	Room 360	Special Session: HFTS-2 Part I
	Blasingame, Tom	Tue	8:30 am	Room 362	Theme 9: EUR and Performance Prediction and Type Well Profiles
	Bohn, Rob	Tue	11:15 am	Room 371	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis III
	Bordeaux Rego, Fabio	Mon	4:35 pm	Room 361	Theme 2: Drivers for Understanding Reservoir Quality and Completion Quality
	Brackett, Bob	Mon	8:25 am	General Assembly	Opening Plenary Session: Unconventionals in Transition
	Bradley, Roda	Mon	4:10 pm	Room 371	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis I
	Brand, Jason	Mon	4:30 pm	Online Only	Theme 1: Parent-Child and Well Spacing
	Brannon, Harold	Wed	4:20 pm	Room 370	Theme 10: Novel Proppants, Low Environmental Impact Fluids and Additives
	Bruant, Robert	Mon	10:50 am	Room 361	Theme 13: Produced Water and Induced Seismicity...ESG Perspectives
	Bryan, Eric	Mon	2:40 pm	Room 362	Theme 9: EUR and Performance Prediction - DCA and Beyond II
C	Bunger, Andrew	Mon	10:50 am	Online Only	Theme 5: Experimental Rock Mechanics I
	Burrows, Lauren	Mon	2:10 pm	Online Only	Theme 15: Unlocking the Production and Recovery Potential of Unconventionals
	Busetti, Seth	Wed	8:55 am	Room 351	Theme 3: Structural Geology as Applied in Unconventionals
	Cao, Zhe	Mon	2:15 pm	Exhibit Hall - Station B	Theme 6: Advances in Applied Petroleum Geochemistry and its Applications
	Capper, Laura	Tue	3:05 pm	General Assembly	Panel: Supply Chains in Energy: Cost Savings, Quality Assurance, 3-D Printing, and Ethical Sourcing
	Caprioglio, Pablo	Wed	11:30 am	Online Only	Special Session: Best of URTeC Latin America II
	Carey, Bill	Wed	9:30 am	Room 360	Special Session: DOE Fundamental Shale Research Program I
	Carlsen, Mathias	Wed	11:15 am	Room 370	Theme 8: Flow and Phase Behavior
	Chatellier, Jean-Yves	Wed	3:05 pm	Room 351	Theme 10: Workflows to Identify Fracture Geometry/Methods for Subsurface Reservoir Characterization
	Chavali, Venkata Bala Krishnateja	Tue	2:40 pm	Room 362	Theme 9: Future of Production Forecasting and Production Diagnostics
C	Chen, Fangxuan	Tue	3:05 pm	Room 361	Theme 2: Rock-Fluid and Fluid-Fluid Interactions - PVT Data Acquisition/Analysis
	Chen, Jinhong	Tue	4:10 pm	Exhibit Hall - Station A	Theme 2: Advanced Formation Evaluation and its Impact in Hydrocarbon Recovery
	Chen, Sidian	Mon	2:50 pm	Online Only	Theme 15: Unlocking the Production and Recovery Potential of Unconventionals
	Chen, Yong-Hua	Wed	1:50 pm	Room 360	Special Session: Best of SPWLA
	Cheng, Kai	Wed	2:15 pm	Room 360	Special Session: Best of SPWLA
	Ciezobka, Jordan	Mon	10:50 am	Room 360	Special Session: HFTS-2 Part I
	Clarke, Robert	Wed	4:25 pm	General Assembly	Panel: Global Unconventionals
	Close, David	Wed	4:10 pm	General Assembly	Panel: Global Unconventionals
	Coleman, Stuart	Mon	10:45 am	General Assembly	Panel: The Road Ahead for New Technology Now: Funding and Commercialization
	Connelly, Ed	Mon	10:45 am	Room 351	Special Session: ConocoPhillips Unconventional Reservoirs and Technology Showcase
C	Cornelio, Jodel	Wed	2:40 pm	Room 361	Theme 7: The New Frontier: Combining Physics-Based and Machine-

	Coskuner, Yakup	Tue	4:35 pm	Room 371	Learning Methods
	Craig, David	Wed	1:50 pm	Room 351	Theme 8: Northern Shales
	Crespo, Pablo	Mon	11:00 am	Exhibit Hall - Station A	Theme 10: Workflows to Identify Fracture Geometry/Methods for Subsurface Reservoir Characterization
	Cross, Ted	Tue	9:45 am	Exhibit Hall - Station A	Theme 1: Optimizing Development Strategies I
	Cross, Ted	Tue	11:15 am	Room 361	Theme 7: Data-Driven Forecasting and Combining Physics-Based and Machine-Learning Methods
	Cross, Ted	Tue	5:00 pm	Room 371	Theme 3: Emerging Geological Evaluations, Tools and Workflows: Data Driven Methods
	Crovetto, Carolina	Wed	10:50 am	Online Only	Theme 8: Northern Shales
	Cruise, Jamie	Mon	3:05 pm	General Assembly	Special Session: Best of URTeC Latin America II
	Cruz, Felipe	Mon	4:35 pm	Room 370	Panel: Data Issues: Management, Integrity, and Legacy
	Cruz, Leonardo	Tue	8:30 am	Room 371	Theme 8: Eagle Ford
					Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis II
D	Damjanac, Branko	Mon	10:35 am	Exhibit Hall - Station B	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis IV
	Dandekar, Abhijit	Mon	10:50 am	Room 370	Theme 8: Case Studies
	Dang, Son	Tue	8:55 am	Room 361	Theme 2: High and Low Field NMR Applications
	Darneal, Chad	Tue	9:20 am	Room 351	Theme 1: Permian Stacked Pay Development Strategies
	Dash, Sabyasachi	Wed	2:40 pm	Room 360	Special Session: Best of SPWLA
	Dennett, Liz	Wed	1:45 pm	General Assembly	Panel: The New Way to Work: Digital Platforms, Cloud-Based Collaborations, and Ecosystems
	Dhuldhoya, Karan	Tue	1:45 pm	Room 351	ConocoPhillips Special Session: Optimizing Through Completion Design and Production Analysis
	Dick, Michael	Tue	9:45 am	Room 361	Theme 2: High and Low Field NMR Applications
	Dindoruk, Birol	Mon	1:50 pm	Room 370	Theme 11: International and Emerging Challenges of Unconventional Resources: Integrated Geoscience and Engineering
	Dindoruk, Birol	Tue	8:25 am	General Assembly	Panel: ESG in Action: Flare Reduction, Leak Detection, Logistics, Blended Solar/Geothermal/Wind Electricity Generation Projects, and Social License to Operate
	Dindoruk, Birol	Tue	2:40 pm	Room 360	EOR Special Session: Best of Tulsa-Recovery Improvement for Unconventional/Tight Systems
	Ding, Jihui	Wed	11:10 am	Online Only	Theme 4: Quantifying Natural Fracture Properties and Reservoir Pressure
	Doornbosch, Fokko	Mon	2:15 pm	Room 371	Theme 5: Experimental Rock Mechanics II
	Dumitrescu, Carmen	Mon	2:50 pm	Online Only	Theme 15: Geoscience Tools and Methods for Understanding the Rock
	Dyer, Steve	Tue	8:25 am	General Assembly	Panel: ESG in Action: Flare Reduction, Leak Detection, Logistics, Blended Solar/Geothermal/Wind Electricity Generation Projects, and Social License to Operate
E	Ehlig-Economides, Christine	Wed	2:15 pm	Room 370	Theme 13: Focus on Methane: The Regulatory Challenges and Monitoring for the Future
	Eichmann, Shannon	Wed	10:10 am	Exhibit Hall - Station A	Theme 2: Emerging Petrophysical Evaluations and Completion Quality
	ElGhonimy, Rana	Tue	2:15 pm	Exhibit Hall - Station A	Theme 3: Reservoir Characterization, Geological Evaluations, and Studies of Unconventional Plays
	Eltahan, Esmail	Mon	11:15 am	Room 370	Theme 8: Case Studies
	Eltahan, Esmail	Wed	11:40 am	Room 361	Theme 7: Data-Driven Production Forecasting and Optimization
	Eltahan, Esmail	Wed	3:55 pm	Room 360	Theme 9: Well Spacing and Well Interference Impact
	Esmaili, Soodabeh	Mon	4:10 pm	Online Only	Theme 1: Parent-Child and Well Spacing
	Esmaili, Soodabeh	Tue	11:15 am	Room 351	Theme 1: Optimizing Completions, Perforations, and Stimulation Strategies
	Esparza, Ángel	Wed	3:05 pm	Room 370	Theme 13: Focus on Methane: The Regulatory Challenges and Monitoring for the Future
F	Fan, Junxuan	Mon	3:05 pm	General Assembly	Panel: Data Issues: Management, Integrity, and Legacy
	Ferguson, Kasey	Wed	8:55 am	Room 370	Theme 12: Maximizing and Delivering Value
	Fitzgerald, Jason	Mon	10:45 am	General Assembly	Panel: The New Way to Work: Digital Platforms, Cloud-Based Collaborations, and Ecosystems
	Forbes, David	Mon	10:45 am	Room 351	Special Session: ConocoPhillips Unconventional Reservoirs and Technology Showcase
	Frouté, Laura	Tue	4:50 pm	Online Only	Theme 2: Pore-Network Imaging and Fluid Flow Modeling
G	Gaddipati, Manohar	Mon	5:00 pm	Room 370	Theme 8: Eagle Ford
	Gale, Julia	Mon	1:50 pm	Room 360	Special Session: HFTS-2 Part II
	Gao, Qian	Tue	10:50 am	Room 371	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis III
	Garcia, Hugo	Wed	9:45 am	Room 351	Theme 3: Structural Geology as Applied in Unconventionals
	Garg, Sunil	Mon	1:45 pm	General Assembly	Panel: Implementing New Technologies in the Field: How Companies are Approaching it in 2021 and Beyond
	Garg, Sunil	Wed	10:45 am	General Assembly	Panel: Earth's Surface Imaging for Pivoting: Affordable Drones & Satellite Imaging Geological Exploration and Operations, Environmental Monitoring and Energy Utilization
	Ghassemi, Ahmad	Tue	1:45 pm	General Assembly	Panel: Learning from Other Industries: A Geothermal Conversation
	Ghazizadeh, Michael	Tue	11:40 am	Room 361	Theme 3: Emerging Geological Evaluations, Tools and Workflows: Data Driven Methods
	Gilbert, Rusty	Wed	8:25 am	General Assembly	Panel: Assessing Risk and Evaluating Opportunities from Different Perspectives
	Givhan, Bear	Tue	10:45 am	General Assembly	Panel: Sensors, Automation, and Smart Digital Operations: Where We Are and the Road Ahead
	Gokaraju, Deepak	Mon	4:10 pm	Room 361	Theme 2: Drivers for Understanding Reservoir Quality and Completion Quality
	Gonzalez, Keyla	Mon	3:45 pm	Exhibit Hall - Station A	Theme 4: Reservoir Characterization Using Petrophysics, Geomechanics,

PRESENTER CROSS REFERENCE

Gonzalez Day, Lucas	Wed	8:50 am	Online Only	and Microseismic
Goodway, Bill	Tue	4:10 pm	Room 360	Special Session: Best of URTEC Latin America I
Grant, Jim	Wed	8:25 am	General Assembly	Theme 4: Novel Seismic Inversion and Attribute Applications
Grant, Jim	Wed	1:45 pm	General Assembly	Panel: Assessing Risk and Evaluating Opportunities from Different Perspectives
Green, Charles	Mon	3:05 pm	Exhibit Hall - Station A	Panel: The New Way to Work: Digital Platforms, Cloud-Based Collaborations, and Ecosystems
Greene, James	Mon	3:05 pm	Room 361	Theme 13: Focus on Methane: Produced Water and Induced Seismicity
Gross, Michael	Wed	1:50 pm	Room 361	Theme 2: Advances in Special Core Analysis and Core-Flood Testing
Grover, Rahul	Wed	1:50 pm	Online Only	Theme 7: The New Frontier: Combining Physics-Based and Machine-Learning Methods
Grubert, Marcel	Wed	9:45 am	Exhibit Hall - Station B	Carbon Capture, Utilization, and Storage I
Guerrero, Javier	Wed	11:30 am	Online Only	Theme 5: Geomechanical Models and Experimental Rock Mechanics
Gulliver, Djuna	Tue	10:50 am	Room 360	Theme 4: Quantifying Natural Fracture Properties and Reservoir Pressure
Gundogar, Asli	Tue	1:50 pm	Room 361	Special Session: HFTS-2 Part V
Guo, Jennifer	Tue	3:05 pm	General Assembly	Theme 2: Rock-Fluid and Fluid-Fluid Interactions - PVT Data Acquisition/Analysis
Guo, Yujia	Wed	10:50 am	Room 370	Panel: Supply Chains in Energy: Cost Savings, Quality Assurance, 3-D Printing, and Ethical Sourcing
Gupta, Ishank	Wed	10:50 am	Room 361	Theme 8: Flow and Phase Behavior
Haddad, Elia	Wed	11:15 am	Room 351	Theme 7: Data-Driven Production Forecasting and Optimization
Hakala, Alexandra	Wed	8:50 am	Room 360	Theme 3: New Ideas and Workflows for Reservoir Characterization of Unconventional Reservoirs
Han, Mei	Tue	4:10 pm	Exhibit Hall - Station B	Special Session: DOE Fundamental Shale Research Program I
Harper, Jack	Mon	10:45 am	Room 351	Theme 9: EUR and Performance Prediction
Hatfield, Michael	Mon	10:45 am	Room 351	Special Session: ConocoPhillips Unconventional Reservoirs and Technology Showcase
Henry, Amy	Mon	1:45 pm	General Assembly	Special Session: ConocoPhillips Unconventional Reservoirs and Technology Showcase
Herman, Don	Tue	3:05 pm	General Assembly	Panel: Implementing New Technologies in the Field: How Companies are Approaching it in 2021 and Beyond
Herve, Philippe	Wed	1:45 pm	General Assembly	Panel: Supply Chains in Energy: Cost Savings, Quality Assurance, 3-D Printing, and Ethical Sourcing
Hoar, Rachel	Wed	8:30 am	Room 351	Panel: The New Way to Work: Digital Platforms, Cloud-Based Collaborations, and Ecosystems
Hollub, Vicky	Mon	8:25 am	General Assembly	Theme 3: Structural Geology as Applied in Unconventionals
Holubnyak, Eugene	Wed	4:25 pm	Online Only	Opening Plenary Session: Unconventionals in Transition
Howell, Bo	Mon	2:15 pm	Room 360	Carbon Capture, Utilization, and Storage II
Hryb, Damian	Wed	9:30 am	Online Only	Special Session: HFTS-2 Part II
Hryb, Damian	Wed	11:10 am	Online Only	Special Session: Best of URTEC Latin America I
Hussain, Taha	Mon	10:45 am	General Assembly	Special Session: Best of URTEC Latin America II
Hussain, Maaruf	Mon	2:30 pm	Online Only	Panel: The Road Ahead for New Technology Now: Funding and Commercialization
Jagadisan, Archana	Tue	5:00 pm	Room 361	Theme 15: Geoscience Tools and Methods for Understanding the Rock
Jah, Nishant	Wed	8:25 am	General Assembly	Theme 2: Emerging Petrophysical Evaluations
Jain, Lokendra	Wed	2:40 pm	Room 351	Panel: Assessing Risk and Evaluating Opportunities from Different Perspectives
Jew, Adam	Tue	2:40 pm	Room 361	Theme 10: Workflows to Identify Fracture Geometry/Methods for Subsurface Reservoir Characterization
Jew, Adam	Wed	11:05 am	Room 360	Theme 2: Rock-Fluid and Fluid-Fluid Interactions - PVT Data Acquisition/Analysis
Jones, Matt	Mon	3:05 pm	Room 360	Special Session: DOE Fundamental Shale Research Program II
Jones, Peter	Tue	2:15 pm	Room 370	Special Session: HFTS-2 Part II
Jong, Phillip	Mon	3:05 pm	General Assembly	Theme 6: Proven and Potential Applications of Time-Lapse Geochemistry
Jweda, Jason	Tue	3:05 pm	Room 370	Panel: Data Issues: Management, Integrity, and Legacy
Kamali, Amirhossein	Mon	4:35 pm	Room 371	Theme 6: Proven and Potential Applications of Time-Lapse Geochemistry
Karacaer, Caner	Mon	4:10 pm	Room 370	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis I
Katiyar, Amit	Tue	1:50 pm	Room 360	Theme 8: Eagle Ford
Khanal, Aaditya	Mon	11:30 am	Online Only	EOR Special Session: Best of Tulsa-Recovery Improvement for Unconventional/Tight Systems
Kias, Evan	Tue	2:15 pm	Room 361	Theme 9: EUR and Performance Prediction - DCA and Beyond I
Kim, Amos	Mon	2:40 pm	Room 351	Theme 2: Rock-Fluid and Fluid-Fluid Interactions - PVT Data Acquisition/Analysis
King, Wendy	Mon	10:45 am	Room 351	Theme 1: Optimizing Development Strategies II
Kneafsey, Tim	Wed	9:40 am	Room 360	Special Session: ConocoPhillips Unconventional Reservoirs and Technology Showcase
Kocoglu, Yildirim	Tue	3:05 pm	Room 362	Special Session: DOE Fundamental Shale Research Program I
Kornacki, Alan	Wed	9:20 am	Room 371	Theme 9: Future of Production Forecasting and Production Diagnostics
Kou, Rui	Wed	2:40 pm	Room 370	Theme 6: Understanding and Predicting Producing Fluids
Kumar, Abhash	Tue	4:50 pm	Online Only	Theme 13: Focus on Methane: The Regulatory Challenges and Monitoring for the Future
Kumar, Dharmendra	Tue	9:45 am	Room 371	Theme 7: Machine-Learning for Subsurface Applications
Kutun, Kagan	Wed	3:55 pm	Room 361	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis II
				Theme 4: Tools and Techniques for Measuring Fracture Interactions

Lapierre, Scott	Tue	3:45 pm	Exhibit Hall - Station B	Theme 9: EUR and Performance Prediction
Latimer, Tim	Tue	1:45 pm	General Assembly	Panel: Learning from Other Industries: A Geothermal Conversation
Laughrey, Christopher	Tue	4:10 pm	Room 370	Theme 6: Analytical Advances in Applied Petroleum Geochemistry
Laycock, Dallin	Wed	1:50 pm	Room 371	Theme 3: Regional Geological Evaluations and Studies of Unconventional Plays
Lazarus, Aaron	Tue	10:45 am	General Assembly	Panel: Sensors, Automation, and Smart Digital Operations: Where We Are and the Road Ahead
Leasure, Joshua	Wed	3:55 pm	Room 370	Theme 10: Novel Proppants, Low Environmental Impact Fluids and Additives
LeBlanc, Raoul	Wed	8:25 am	General Assembly	Panel: Assessing Risk and Evaluating Opportunities from Different Perspectives
Lee, John	Mon	10:50 am	Online Only	Theme 9: EUR and Performance Prediction - DCA and Beyond I
Leetaru, Hannes	Wed	2:35 pm	Online Only	Carbon Capture, Utilization, and Storage I
Lemons, Casee	Mon	11:40 am	Room 361	Theme 13: Produced Water and Induced Seismicity...ESG Perspectives
Jerza, Alejandro	Mon	1:50 pm	Room 351	Theme 1: Optimizing Development Strategies II
Jerza, Alejandro	Wed	9:10 am	Online Only	Special Session: Best of URTeC Latin America I
Lewis, Andrew	Tue	4:35 pm	Room 360	Theme 4: Novel Seismic Inversion and Attribute Applications
Li, Jinchang	Tue	9:50 am	Online Only	Theme 15: Evaluating and Applying Advanced Methods to Create Value in Unconventionals
Li, Wenfeng	Tue	9:10 am	Online Only	Theme 15: Evaluating and Applying Advanced Methods to Create Value in Unconventionals
Littleford, Thomas	Tue	9:45 am	Exhibit Hall - Station B	Theme 10: Innovative Technologies: New Materials and Workflows
Liu, Shunhua	Mon	1:45 pm	General Assembly	Panel: Implementing New Technologies in the Field: How Companies are Approaching it in 2021 and Beyond
Liu, Yongshe	Tue	4:10 pm	Room 371	Theme 8: Northern Shales
Liu, Yongzan	Tue	2:40 pm	Room 371	Theme 5: Diagnostics and Monitoring with Geomechanical Models
Liu, Yongzan	Wed	2:15 pm	Room 351	Theme 10: Workflows to Identify Fracture Geometry/Methods for Subsurface Reservoir Characterization
Long, Hui	Tue	5:00 pm	Room 370	Theme 6: Analytical Advances in Applied Petroleum Geochemistry
Lopano, Christina	Wed	10:55 am	Room 360	Special Session: DOE Fundamental Shale Research Program II
Lopez, Fernando	Wed	10:45 am	General Assembly	Panel: Earth's Surface Imaging for Pivoting: Affordable Drones & Satellite Imaging Geological Exploration and Operations, Environmental Monitoring and Energy Utilization
Louis, Laurent	Mon	1:50 pm	Room 371	Theme 5: Experimental Rock Mechanics II
Lu, Haidan	Wed	4:20 pm	Room 351	Theme 8: Modeling
Lyu, Ye	Mon	2:15 pm	Room 361	Theme 2: Advances in Special Core Analysis and Core-Flood Testing



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[AAPG.org/events](https://www.aapg.org/events)

AAPG Geosciences Technology Workshop – Structural Styles and Hydrocarbon Prospectivity in Thrust Belt Settings Around Europe and North Africa

Barcelona, Spain | 7–8 Sept. 2021

The Workshop aims at bringing together experts from academia and industry on different disciplines to share experiences, new approaches, new data and new ways of integrating information that can help in reducing the uncertainties related to the exploration activities in Europe and North Africa Thrust Belt Systems.

SEG | AAPG IMAGE 2021

Denver, Colorado and Online | 26 Sept.–1 Oct. 2021

Introducing IMAGE – the International Meeting for Applied Geoscience & Energy. IMAGE '21 is an integrated annual event of the Society of Exploration Geophysicists (SEG) and the American Association of Petroleum Geologists (AAPG) and in conjunction with the Society for Sedimentary Geology (SEPM). These global leaders have joined forces to create one powerhouse event to bring together multiple disciplines of the geosciences sector. IMAGE '21 combines all the great elements from each society's previous meetings to offer a better experience and increased value for the industry. IMAGE '21 is the ultimate learning and networking event for geoscience. One registration will provide access to a comprehensive technical program and an expansive exhibition showcasing the latest products and technologies.

AAPG Eastern Section's 50th Anniversary Annual Meeting

Pittsburgh, Pennsylvania | 2–6 Oct. 2021

The Eastern Section of the AAPG represents 12 member societies in the eastern United States. The society holds their annual meeting every year

in different locations across the region. These annual meetings cover topics in conventional hydrocarbon exploration and production, unconventional resources such as shale gas, carbon sequestration, and environmental solutions.

AAPG Mid-Continent Biannual Meeting

Tulsa, Oklahoma | 3–5 Oct. 2021

The Energy Evolution: Learning from the Past Century, Powering the Future Venue: Hyatt Regency Downtown, Tulsa, Oklahoma Hosted by: Tulsa Geological Society For more information please contact Tara Benda - General Chair.

GEO: 14th Middle East Geosciences Conference & Exhibition

Manama, Bahrain | 4–7 Oct. 2021

For 26 years, the GEO exhibition and conference has been at the forefront of petroleum geoscience. GEO has fast become a next generation energy event, hosting major NOCs, IOCs, manufacturers, technology providers and service companies – all of whom play an active role in the global energy value chain.

AAPG Geosciences Technology Workshop – Evaporite Processes and Systems: Integrating Perspectives

Salzburg, Austria | 19–20 Oct. 2021

The aim of this workshop is to improve our understanding and predictive ability by addressing evaporite systems in an integrated manner, all the way from precipitation to structuration, and exploring the multiple properties of evaporite sequences.

AAPG Gulf Coast Section / GCAGS GeoGulf Annual Meeting

Austin, Texas | 27–29 Oct. 2021

Join us for the GCAGS GeoGulf Annual Meeting. Date: October 27–29, 2021 Location: Austin, Texas Hosted By: Austin Geological Society General Chair: Dallas Dunlap.

AAPG Geosciences Technology Workshop – 4th Edition: AAPG/EAGE Siliciclastic Reservoirs of the Middle East

Al-Khobar, Saudi Arabia | 6–8 Dec. 2021

The Fourth AAPG/EAGE Siliciclastic Reservoirs of the Middle East Workshop provides a unique opportunity for industry experts and academic researchers to share their findings on any subjects related to the reservoir characteristics and geoModeling of the Middle Eastern siliciclastic reservoirs or other areas across the globe that could serve as analog to the Middle Eastern reservoirs.

AAPG Geosciences Technology Workshop – Source Rocks of the Middle East

Manama, Bahrain | 17–19 Jan. 2022

Save the date for this Geosciences Technology Workshop. More information to follow soon.

AAPG Geosciences Technology Workshop – Remaining Hydrocarbon Potential in Southern African Offshore Basins

Cape Town, South Africa | 31 Jan.–2 Feb. 2022

Save the date for this Geosciences Technology Workshop. More information to follow soon.

AAPG Geosciences Technology Workshop – Exploration in Mature Basins

Muscat, Oman | 7–9 Feb. 2022

Save the date for this Geosciences Technology Workshop. More information to follow soon.

AAPG Geosciences Technology Workshop – Well Planning and Delivery in Unprecedented Times

Geneva, Switzerland | 8–9 Feb. 2022

This workshop will bring together specialists from across the disciplines from IOCs, NOCs and service providers as well as academic and independent researchers involved in early well planning through to delivery to identify key factors that play a role delivering wells in a safe, timely and cost effective manner.

International Petroleum Technology Conference (IPTC) 2022

Dhahran, Saudi Arabia | 21–23 Feb. 2022

The International Petroleum Technology Conference (IPTC) will be returning to Saudi Arabia for its fourteenth edition. It is scheduled to be held in Dhahran Expo in Dhahran on 21–23 February 2022. Save the date!

AAPG/EAGE MEDINA Technical Conference and Exhibition

Tunis, Tunisia | 14–16 Mar. 2022

The MEDINA Conference and Exhibition will deliver technical resources, programs, workshops and field trips in support of the Mediterranean and North African oil and gas industry. The conference program will encompass topical panel discussions and technical sessions comprised of research-based presentations with the objective of exchanging knowledge, best practices, and experience among participants as well as networking with colleagues. The event will be regionally focused, and we invite proposals from across the North African and Mediterranean region, as well as globally.

PRESENTER CROSS REFERENCE

M	Maity, Debetyam	Tue	9:20 am	Room 360	Special Session: HFTS-2 Part IV
	Maity, Debetyam	Tue	2:10 pm	Online Only	Theme 15: Novel Completion Methods to Optimize Costs and Maximize Recovery
	Mamoudou, Sidi	Mon	1:50 pm	Online Only	Theme 15: Unlocking the Production and Recovery Potential of Unconventionals
	Mansour, Ahmed	Mon	4:10 pm	Room 351	Theme 10: Innovative Technologies to Reduce Completions Costs
	Mathur, Ashish	Mon	2:40 pm	Room 361	Theme 2: Advances in Special Core Analysis and Core-Flood Testing
	Maxwell, Shawn	Tue	8:30 am	Room 370	Special Session: Best of ARMA
	Mayorga-Gonzalez, Ligia Carolina	Mon	1:50 pm	Exhibit Hall - Station A	Theme 13: Focus on Methane: Produced Water and Induced Seismicity
	Mayorga-Gonzalez, Ligia Carolina	Wed	3:05 pm	Room 371	Theme 3: Regional Geological Evaluations and Studies of Unconventional Plays
	Meckel, Tip	Wed	3:55 pm	Online Only	Carbon Capture, Utilization, and Storage II
	Mehana, Mohamed	Wed	11:40 am	Room 370	Theme 8: Flow and Phase Behavior
	Mehrabi, Mehran	Mon	5:00 pm	Room 371	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis I
	Melchert, Elena	Wed	8:25 am	Room 360	Special Session: DOE Fundamental Shale Research Program I
	Melzer, Stephen	Wed	2:50 pm	Online Only	Carbon Capture, Utilization, and Storage I
	Meneguolo, Renata	Wed	4:55 pm	Online Only	Carbon Capture, Utilization, and Storage II
	Meng, Meng	Mon	2:40 pm	Room 371	Theme 5: Experimental Rock Mechanics II
	Merkel, Richard	Tue	8:30 am	Room 361	Theme 2: High and Low Field NMR Applications
	Meyer, Vitaly	Wed	1:45 pm	General Assembly	Panel: The New Way to Work: Digital Platforms, Cloud-Based Collaborations, and Ecosystems
	Miner, Dylan	Tue	10:50 am	Room 361	Theme 3: Emerging Geological Evaluations, Tools and Workflows: Data Driven Methods
	Mohamed, Farid	Tue	2:50 pm	Online Only	Theme 8: Improving Recovery From Flowback to EOR Potential
	Mohd Razak, Syamil	Mon	11:10 am	Online Only	Theme 9: EUR and Performance Prediction - DCA and Beyond I
	Mohd Razak, Syamil	Tue	11:00 am	Exhibit Hall - Station A	Theme 7: Data-Driven Forecasting and Combining Physics-Based and Machine-Learning Methods
	Molinari, Diego	Wed	3:05 pm	Room 361	Theme 7: The New Frontier: Combining Physics-Based and Machine-Learning Methods
	Molinari, Diego	Wed	3:55 pm	Room 351	Theme 8: Modeling
	Moore, Joseph	Tue	1:45 pm	General Assembly	Panel: Learning from Other Industries: A Geothermal Conversation
	Moridis, George	Wed	9:50 am	Room 360	Special Session: DOE Fundamental Shale Research Program I
	Moringo, Nicole	Wed	9:45 am	Room 361	Theme 10: Friction Reducers and Other Completion Fluids
	Morris, Amanda	Mon	2:15 pm	Exhibit Hall - Station A	Theme 13: Focus on Methane: Produced Water and Induced Seismicity
	Morris, Joseph	Wed	9:20 am	Room 360	Special Session: DOE Fundamental Shale Research Program I
	Muralidharan, Vivek	Tue	8:30 am	Room 351	Theme 1: Permian Stacked Pay Development Strategies
	Murray, Brett	Mon	3:05 pm	Room 362	Theme 9: EUR and Performance Prediction - DCA and Beyond II
	Myers, Grant	Mon	1:50 pm	Exhibit Hall - Station B	Theme 6: Advances in Applied Petroleum Geochemistry and its Applications
N	Nachev, Victor	Mon	11:00 am	Exhibit Hall - Station B	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis IV
	Nagel, Neal	Tue	9:20 am	Room 370	Special Session: Best of ARMA
	Naik, Sarvesh	Tue	2:15 pm	Room 362	Theme 9: Future of Production Forecasting and Production Diagnostics
	Namasivayam, Sathiy	Wed	1:45 pm	General Assembly	Panel: The New Way to Work: Digital Platforms, Cloud-Based Collaborations, and Ecosystems
	Nandy, Dipanwita	Wed	2:40 pm	Room 371	Theme 3: Regional Geological Evaluations and Studies of Unconventional Plays
	Natalie, Victoria	Wed	10:45 am	General Assembly	Panel: Earth's Surface Imaging for Pivoting: Affordable Drones & Satellite Imaging Geological Exploration and Operations, Environmental Monitoring and Energy Utilization
	Neal, Scott	Mon	1:45 pm	General Assembly	Panel: Implementing New Technologies in the Field: How Companies are Approaching it in 2021 and Beyond
	Neri, Philip	Mon	3:05 pm	General Assembly	Panel: Data Issues: Management, Integrity, and Legacy
	Nikulin, Alex	Tue	10:45 am	General Assembly	Panel: Sensors, Automation, and Smart Digital Operations: Where We Are and the Road Ahead
	Nizamidin, Nabijan	Wed	8:55 am	Room 361	Theme 10: Friction Reducers and Other Completion Fluids
O	O'Conner, Amanda	Wed	2:20 pm	Online Only	Carbon Capture, Utilization, and Storage I
	Odiachi, Judah	Tue	4:10 pm	Room 361	Theme 2: Emerging Petrophysical Evaluations
	Okuno, Ryosuke	Tue	10:10 am	Exhibit Hall - Station B	Theme 10: Innovative Technologies: New Materials and Workflows
	Orozco, Daniel	Tue	10:50 am	Online Only	Theme 4: Measuring Stress, Strain, and Pressure
	Osman, Mutasim	Tue	4:10 pm	Room 362	Theme 3: Emerging Geological Evaluations, Tools and Workflows: Examples from the Field and Beyond
P	Padeletti, Kim	Mon	3:05 pm	General Assembly	Panel: Data Issues: Management, Integrity, and Legacy
	Pai, Sudhir	Mon	10:45 am	General Assembly	Panel: The Road Ahead for New Technology Now: Funding and Commercialization
	Pan, Bin	Tue	2:30 pm	Online Only	Theme 8: Improving Recovery From Flowback to EOR Potential
	Pan, Yuewei	Tue	10:10 am	Exhibit Hall - Station A	Theme 7: Data-Driven Forecasting and Combining Physics-Based and Machine-Learning Methods
	Panja, Palash	Mon	5:00 pm	Room 361	Theme 2: Drivers for Understanding Reservoir Quality and Completion Quality
	Park, Jaeyoung	Tue	1:50 pm	Room 362	Theme 9: Future of Production Forecasting and Production Diagnostics
	Park, Jaeyoung	Tue	3:05 pm	Room 371	Theme 5: Diagnostics and Monitoring with Geomechanical Models
	Pearson, Mark	Tue	8:55 am	Room 370	Special Session: Best of ARMA
	Peng, Sheng	Mon	2:30 pm	Online Only	Theme 15: Unlocking the Production and Recovery Potential of Unconventionals
	Pourpak, Hamid	Tue	11:40 am	Room 351	Theme 1: Optimizing Completions, Perforations, and Stimulation Strategies
	Pradhan, Yogashri	Mon	11:40 am	Room 370	Theme 8: Case Studies
	Price, Buddy	Mon	3:10 pm	Online Only	Theme 15: Geoscience Tools and Methods for Understanding the Rock

	Proctor, Jacob	Tue	4:35 pm	Room 362	Theme 3: Emerging Geological Evaluations, Tools and Workflows: Examples from the Field and Beyond
	Pudugramam, Venkateswaran Sriram	Tue	9:45 am	Room 360	Special Session: HFTS-2 Part IV
	Puranik, Rani	Tue	3:05 pm	General Assembly	Panel: Supply Chains in Energy: Cost Savings, Quality Assurance, 3-D Printing, and Ethical Sourcing
Q	Quintanilla, Zach	Wed	4:40 pm	Room 351	Theme 8: Modeling
R	Radhakrishnan, Anuradha	Wed	4:40 pm	Room 370	Theme 10: Novel Proppants, Low Environmental Impact Fluids and Additives
	Ramos Gurjao, Kildare	Wed	4:40 pm	Room 361	Theme 4: Tools and Techniques for Measuring Fracture Interactions
	Rasmus, John	Tue	4:35 pm	Room 361	Theme 2: Emerging Petrophysical Evaluations
	Rasmus, John	Wed	10:35 am	Exhibit Hall - Station A	Theme 2: Emerging Petrophysical Evaluations and Completion Quality
	Rehg, Danny	Tue	1:45 pm	General Assembly	Panel: Learning from Other Industries: A Geothermal Conversation
	Roberts, Amanda	Wed	8:30 am	Room 370	Theme 12: Maximizing and Delivering Value
	Rodriguez, Lisandro	Wed	8:30 am	Online Only	Special Session: Best of URTeC Latin America I
	Roussel, Nicolas	Tue	1:50 pm	Room 371	Theme 5: Diagnostics and Monitoring with Geomechanical Models
	Roy, Ankur	Wed	9:20 am	Room 351	Theme 3: Structural Geology as Applied in Unconventionals
	Ruiz Maraggi, Leopoldo	Mon	2:15 pm	Room 362	Theme 9: EUR and Performance Prediction - DCA and Beyond II
	Ruiz Maraggi, Leopoldo	Tue	9:20 am	Room 362	Theme 9: EUR and Performance Prediction and Type Well Profiles
	Ruse, Cristina	Mon	4:10 pm	Exhibit Hall - Station A	Theme 4: Reservoir Characterization Using Petrophysics, Geomechanics, and Microseismic
	Ryan, Deborah	Wed	1:50 pm	Room 370	Theme 13: Focus on Methane: The Regulatory Challenges and Monitoring for the Future
	Ryan, Vanessa	Tue	8:25 am	General Assembly	Panel: ESG in Action: Flare Reduction, Leak Detection, Logistics, Blended Solar/Geothermal/Wind Electricity Generation Projects, and Social License to Operate
	Rysak, Bethany	Tue	4:10 pm	Online Only	Theme 7: Machine-Learning for Subsurface Applications
S	Samuel, Silas	Tue	5:00 pm	Room 360	Theme 4: Novel Seismic Inversion and Attribute Applications
	Savitski, Alexei	Tue	11:15 am	Room 360	Special Session: HFTS-2 Part V
	Schmidt, Darren	Mon	2:40 pm	Exhibit Hall - Station A	Theme 13: Focus on Methane: Produced Water and Induced Seismicity
	Schrynmeeckers, Rick	Wed	9:45 am	Room 371	Theme 6: Understanding and Predicting Producing Fluids
	Scott, Anna	Tue	8:25 am	General Assembly	Panel: ESG in Action: Flare Reduction, Leak Detection, Logistics, Blended Solar/Geothermal/Wind Electricity Generation Projects, and Social License to Operate



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Scott, Anna	Tue	3:05 pm	General Assembly	Panel: Supply Chains in Energy: Cost Savings, Quality Assurance, 3-D Printing, and Ethical Sourcing	
Scott, Stuart	Tue	10:50 am	Room 370	Theme 8: Facilities and Artificial Lift	
Scott, Stuart	Tue	2:40 pm	Room 351	ConocoPhillips Special Session: Optimizing Through Completion Design and Production Analysis	
Sesetty, Varahanarash	Tue	8:55 am	Room 371	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis II	
Seymour, Brian	Wed	9:20 am	Room 361	Theme 10: Friction Reducers and Other Completion Fluids	
Sharma, Mukul	Tue	1:45 pm	General Assembly	Panel: Learning from Other Industries: A Geothermal Conversation	
Sharma, Pushpesh	Wed	8:25 am	General Assembly	Panel: Assessing Risk and Evaluating Opportunities from Different Perspectives	
Shattuck, Ben	Wed	9:20 am	Room 370	Theme 12: Maximizing and Delivering Value	
Shelley, Robert	Tue	10:35 am	Exhibit Hall - Station A	Theme 7: Data-Driven Forecasting and Combining Physics-Based and Machine-Learning Methods	
Siegel, Gabriel	Tue	4:35 pm	Exhibit Hall - Station B	Theme 9: EUR and Performance Prediction	
Singh, Amit	Tue	10:50 am	Room 351	Theme 1: Optimizing Completions, Perforations, and Stimulation Strategies	
Smith, Christopher	Tue	4:10 pm	Room 370	Theme 6: Analytical Advances in Applied Petroleum Geochemistry	
Smith, Christopher	Wed	2:15 pm	Room 371	Theme 3: Regional Geological Evaluations and Studies of Unconventional Plays	
Smith, Michael	Wed	11:00 am	Exhibit Hall - Station A	Theme 2: Emerging Petrophysical Evaluations and Completion Quality	
Song, Chengyao	Tue	2:10 pm	Online Only	Theme 8: Improving Recovery From Flowback to EOR Potential	
Song, Yishu	Tue	3:05 pm	Room 351	ConocoPhillips Special Session: Optimizing Through Completion Design and Production Analysis	
Sonnenberg, Stephen	Wed	11:40 am	Room 351	Theme 3: New Ideas and Workflows for Reservoir Characterization of Unconventional Reservoirs	
Sorensen, James	Wed	4:10 pm	Online Only	Carbon Capture, Utilization, and Storage II	
Soroush, Hamed	Tue	8:25 am	General Assembly	Panel: ESG in Action: Flare Reduction, Leak Detection, Logistics, Blended Solar/Geothermal/Wind Electricity Generation Projects, and Social License to Operate	
Soroush, Hamed	Wed	2:05 pm	Online Only	Carbon Capture, Utilization, and Storage I	
Spielman-Sun, Eleanor	Tue	9:30 am	Online Only	Theme 15: Evaluating and Applying Advanced Methods to Create Value in Unconventionals	
Stephenson, Michael	Wed	4:40 pm	Online Only	Carbon Capture, Utilization, and Storage II	
Stokes, Martha	Wed	10:50 am	Room 351	Theme 3: New Ideas and Workflows for Reservoir Characterization of Unconventional Reservoirs	
Suarez-Rivera, Roberto	Tue	5:00 pm	Room 351	Theme 1: Navigating Technologies That Deliver Bottom-Line Results	
Sukumar, Sriniketh	Tue	9:45 am	Room 362	Theme 9: EUR and Performance Prediction and Type Well Profiles	
Sweek, Jeremy	Mon	8:25 am	General Assembly	Opening Plenary Session: Unconventionals in Transition	
T	Tan, Yunhui	Mon	2:40 pm	Room 360	Special Session: HFTS-2 Part II
	Taranik, Dan	Wed	10:45 am	General Assembly	Panel: Earth's Surface Imaging for Pivoting: Affordable Drones & Satellite Imaging Geological Exploration and Operations, Environmental Monitoring and Energy Utilization
	Tavassoli, Shayan	Tue	2:50 pm	Online Only	Theme 15: Novel Completion Methods to Optimize Costs and Maximize Recovery
	Taylor, Gareth	Tue	2:15 pm	Room 371	Theme 5: Diagnostics and Monitoring with Geomechanical Models
	Thul, Daivd	Tue	10:45 am	General Assembly	Panel: Sensors, Automation, and Smart Digital Operations: Where We Are and the Road Ahead
	Thurmond, John	Mon	10:45 am	General Assembly	Panel: The Road Ahead for New Technology Now: Funding and Commercialization
Tinker, Scott	Mon	8:25 am	General Assembly	Opening Plenary Session: Unconventionals in Transition	
Tonner, David	Tue	10:45 am	General Assembly	Panel: Sensors, Automation, and Smart Digital Operations: Where We Are and the Road Ahead	
U	Ugueto, Gustavo	Mon	5:00 pm	Room 360	Special Session: HFTS-2 Part III
	Ugueto, Gustavo	Tue	8:55 am	Room 360	Special Session: HFTS-2 Part IV
V	Valdez, Stan	Wed	4:40 pm	Room 360	Theme 9: Well Spacing and Well Interference Impact
	Van Hattum, Jop	Tue	8:30 am	Online Only	Theme 15: Evaluating and Applying Advanced Methods to Create Value in Unconventionals
	Velez, Edgar	Wed	9:45 am	Exhibit Hall - Station A	Theme 2: Emerging Petrophysical Evaluations and Completion Quality
	Veselinovic, Dragan	Tue	9:20 am	Room 361	Theme 2: High and Low Field NMR Applications
	Vissotski, Andrea	Mon	4:10 pm	Room 360	Special Session: HFTS-2 Part III
	Viswanathan, Hari	Wed	9:00 am	Room 360	Special Session: DOE Fundamental Shale Research Program I
	Viswanathan, Hari	Wed	10:45 am	Room 360	Special Session: DOE Fundamental Shale Research Program II
	Voneiff, George	Wed	9:45 am	Room 370	Theme 12: Maximizing and Delivering Value
W	Walters, Dale	Tue	9:45 am	Room 370	Special Session: Best of ARMA
	Wang, Jiehao	Mon	5:00 pm	Room 351	Theme 10: Innovative Technologies to Reduce Completions Costs
	Wang, Jiehao	Tue	8:30 am	Room 360	Special Session: HFTS-2 Part IV
	Wang, Qiaochu	Wed	10:50 am	Online Only	Theme 4: Quantifying Natural Fracture Properties and Reservoir Pressure
	Wang, Wei	Tue	2:40 pm	Room 370	Theme 6: Proven and Potential Applications of Time-Lapse Geochemistry
	Wang, Xinglin	Mon	1:50 pm	Online Only	Theme 15: Geoscience Tools and Methods for Understanding the Rock
	Wang, Ye	Tue	1:50 pm	Room 370	Theme 6: Proven and Potential Applications of Time-Lapse Geochemistry
	Wang, Yifeng	Wed	8:30 am	Room 360	Special Session: DOE Fundamental Shale Research Program I
	Welch, Nathan	Mon	1:50 pm	Room 361	Theme 2: Advances in Special Core Analysis and Core-Flood Testing
	Williams, Ellen	Tue	5:00 pm	Room 370	Theme 6: Analytical Advances in Applied Petroleum Geochemistry
	Wright, Shawn	Wed	8:55 am	Room 371	Theme 6: Understanding and Predicting Producing Fluids

	Wu, Sheng	Mon	2:40 pm	Room 370	Theme 11: International and Emerging Challenges of Unconventional Resources: Integrated Geoscience and Engineering
	Wu, Yidi	Tue	9:20 am	Room 371	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis II
	Wutherich, Kevin	Wed	4:20 pm	Room 361	Theme 4: Tools and Techniques for Measuring Fracture Interactions
X	Xie, Harry	Wed	3:05 pm	Room 360	Special Session: Best of SPWLA
	Xie, Xueying	Tue	1:50 pm	Online Only	Theme 8: Improving Recovery From Flowback to EOR Potential
	Xiong, Wei	Mon	2:10 pm	Online Only	Theme 15: Geoscience Tools and Methods for Understanding the Rock
Y	Yan, Jerry	Tue	1:50 pm	Online Only	Theme 15: Novel Completion Methods to Optimize Costs and Maximize Recovery
	Yan, Yukun	Tue	11:40 am	Room 371	Theme 5: Hydraulic Fracturing: Monitoring, Modeling, and Analysis III
	Yang, Zhengru	Tue	4:30 pm	Online Only	Theme 2: Pore-Network Imaging and Fluid Flow Modeling
	Yocham, Kye	Mon	4:35 pm	Room 351	Theme 10: Innovative Technologies to Reduce Completions Costs
	Yu, Wei	Mon	2:15 pm	Room 370	Theme 11: International and Emerging Challenges of Unconventional Resources: Integrated Geoscience and Engineering
	Yu, Wei	Tue	11:25 am	Exhibit Hall - Station A	Theme 7: Data-Driven Forecasting and Combining Physics-Based and Machine-Learning Methods
Z	Zakhour, Nancy	Mon	10:35 am	Exhibit Hall - Station A	Theme 1: Optimizing Development Strategies I
	Zalavadia, Hardikkumar	Wed	11:15 am	Room 361	Theme 7: Data-Driven Production Forecasting and Optimization
	Zavala, Eduardo	Mon	3:05 pm	General Assembly	Panel: Data Issues: Management, Integrity, and Legacy
	Zhang, Baosen	Tue	4:30 pm	Online Only	Theme 7: Machine-Learning for Subsurface Applications
	Zhang, Ke	Tue	11:15 am	Room 370	Theme 8: Facilities and Artificial Lift
	Zhang, Shuang	Tue	4:10 pm	Room 351	Theme 1: Navigating Technologies That Deliver Bottom-Line Results
	Zhang, Yanze	Mon	11:15 am	Room 361	Theme 13: Produced Water and Induced Seismicity...ESG Perspectives
	Zhang, Zhishuai	Mon	4:35 pm	Room 360	Special Session: HFTS-2 Part III
	Zhao, Yu	Tue	11:40 am	Room 360	Special Session: HFTS-2 Part V
	Zhao, Yuhang	Mon	11:10 am	Online Only	Theme 5: Experimental Rock Mechanics I
	Zijp, Mart	Tue	5:00 pm	Room 362	Theme 3: Emerging Geological Evaluations, Tools and Workflows: Examples from the Field and Beyond

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● EXHIBITION HIGHLIGHTS ●

● EXHIBITORS ●

● FLOOR PLANS ●

● EXHIBITOR DIRECTORY ●

● CORE EXHIBITS ●

EXHIBITION HIGHLIGHTS

Make time to visit the Exhibit Hall, which provides engaging networking opportunities and events designed to turn initial introductions into long term business relationships as well as providing the latest technologies and product launches in the market.

EXHIBITION HOURS *(Located in Exhibit Hall E)*

Monday

10:00 am–6:00 pm

- Refreshment Break at 10:00 am and 3:00 pm
- Exhibition Paper Presentations all-day (#5055 and #5001)
- Core Exhibits all-day (#5121)
- Media Lounge all-day (#4657)
- Opening Reception at 5:00 pm

Tuesday

9:00 am–6:00 pm

- Refreshment Breaks at 10:00 am and 3:00 pm
- Exhibition Paper Presentations all-day (#5055 and #5001)
- Core Exhibits all-day (#5121)
- Media Lounge all-day (#4657)
- Networking Reception at 5:00 pm

Wednesday

9:00 am–1:00 pm

- Refreshment Break at 10:00 am
- Exhibition Paper Presentations Morning Only (#5055 and #5001)
- Media Lounge (#4657)
- Core Exhibits (#5121)

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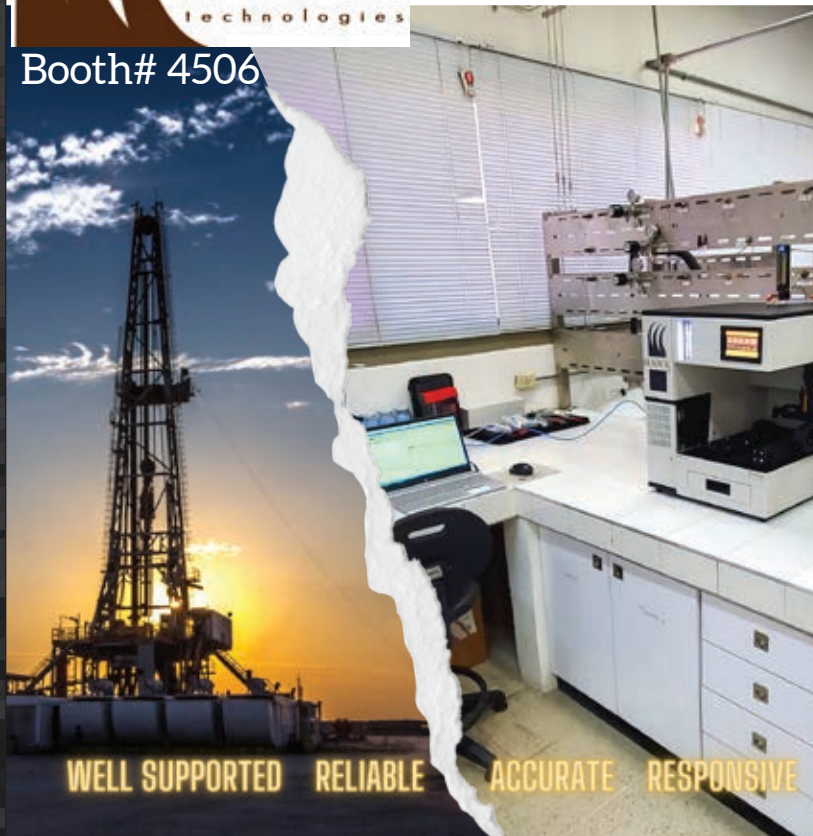
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American Association of Petroleum		Downhole Chemical Solutions	4501	H2 Laboratories.....	4440
Geologists (AAPG).....	5149	Drill2Frac	*4608	GVERSE GeoGraphix	4415
APEX Petroleum Engineering.....	*4633	DynaEnergetics	4913	Haimo America, Inc.	*4915
Applied Petroleum Technology	4904	Dynamic Graphics, Inc.	*4412	Hivecell.....	4806
Aramco.....	4533	Dynamic Green Solutions, LLC.....	*4300	Hydrocarbon Data Systems	4920
Baker Hughes.....	*4233	Dynamic Technologies (DTCC)	5132	Impact Selector International	4609
BHL Consulting	*4514	EDGE Systems.....	*4723	Innovex.....	*5133
Biodentify	Online Only	Emerson E&P Software	4825	Intertek Westport Technology Center.....	5015
Canamera Coring.....	4538	ENGAGE	4927	Intrepid Resources.....	*4446
Chemostrat Inc.....	*4817	Enovate Upstream	4308	ITF Software.....	*4704
ClampOn, Inc.....	4700	Enventure Global Technology	4738	J-W Power Company.....	4509
Clean Chemistry	4605	Enverus.....	4423	Kansas University Dept. of Geology/ Kansas Interdisciplinary Carbonates	
ComboCurve / CG&A	4500	EV.....	*4722	Consortium	5037
Computer Modelling Group Ltd.....	*4701	Evolve Village.....	5016	Katalyst Data Management	*4838
Confluent	*4806	Fairfield Geotechnologies	4319	Kureha Energy Solutions	*4401
CoorsTek Technical Ceramics	4419	Field Geo Services, Inc.....	*4337	Luxfer MEL Technologies	*4341
Cordax Evaluation Technologies.....	4518	Finoric LLC.....	*4900	MorphPackers.....	4646
Core Exhibits.....	*5121	Flotek Industries.....	4639	Nanometrics Inc.	5027
Core Laboratories.....	4939	Food Court.....	4759	Nautilus (part of the RPS Group)	5026
Coretrax	*5139	Fracture ID	5023	NCS Multistage	4936
Corva AI	*5111	Freeman.....	*5257	Neuralog	4432
Danomics.....	4912	FTS International	*4301	New England Research, Inc.	*4809
DarkVision	4707	GEO ExPro.....	Online Only	NexTier Oilfield Solutions.....	*4433
DataLog & GeoVision.....	5018	GEDynamics.....	4219	NITEC LLC.....	4733
DC3 Control - Chemical Automation.....	*5050	GeoMark Research, Ltd.	*4515	NodalSeismic, LLC.....	*5000
Deepprop® / Zeospheres™, LLC	4600	Geophysical Society of Houston.....	*4312		



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NUTECH.....	*5052	Selman & Associates, Ltd.....	*4604	University of Houston Petroleum	
Oil & Gas Journal/Offshore Magazine	4909	Shale Oil Tools	4313	Engineering	*4726
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Omni Air & Nitrogen.....	*4547	Silixa, LLC	*4916	URTeC Exhibitor Rebooking Lounge	*4459
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Osperity	*5004	Society of Exploration		Vertechs Energy Solutions, LLC	Online Only
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Petrocubic Solutions.....	4436	Society of Petroleum		Waco Precision Winding, LLC	*5012
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RevoChem LLC	*5033	Tally Energy Services	5101	Ziebel US, Inc.	4715
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Rock Flow Dynamics.....	*4851	Tech Sessions Station B	*5001		
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Rockwater Energy Solutions	*4951	TenEx Technologies.....	*4905		
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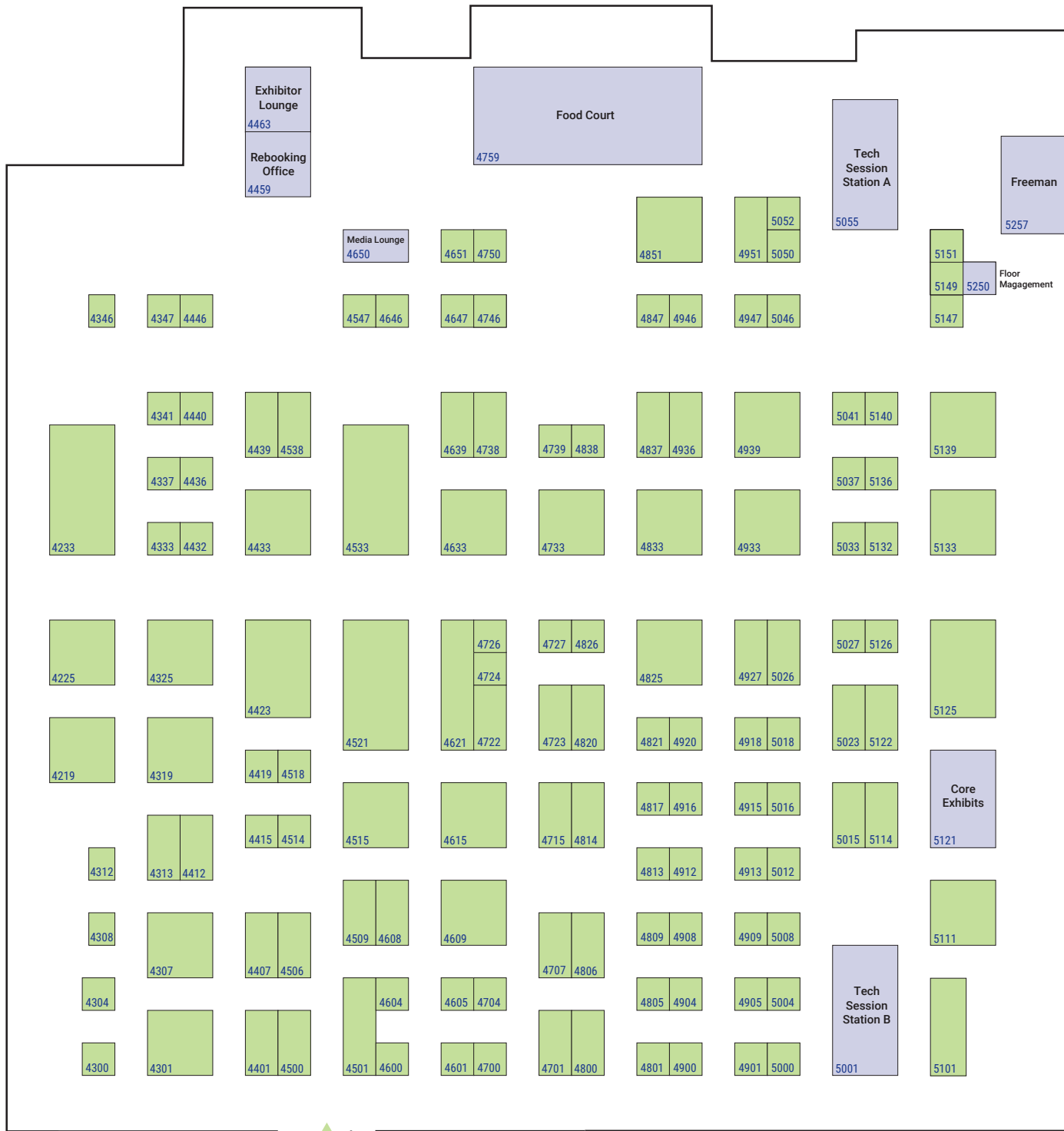
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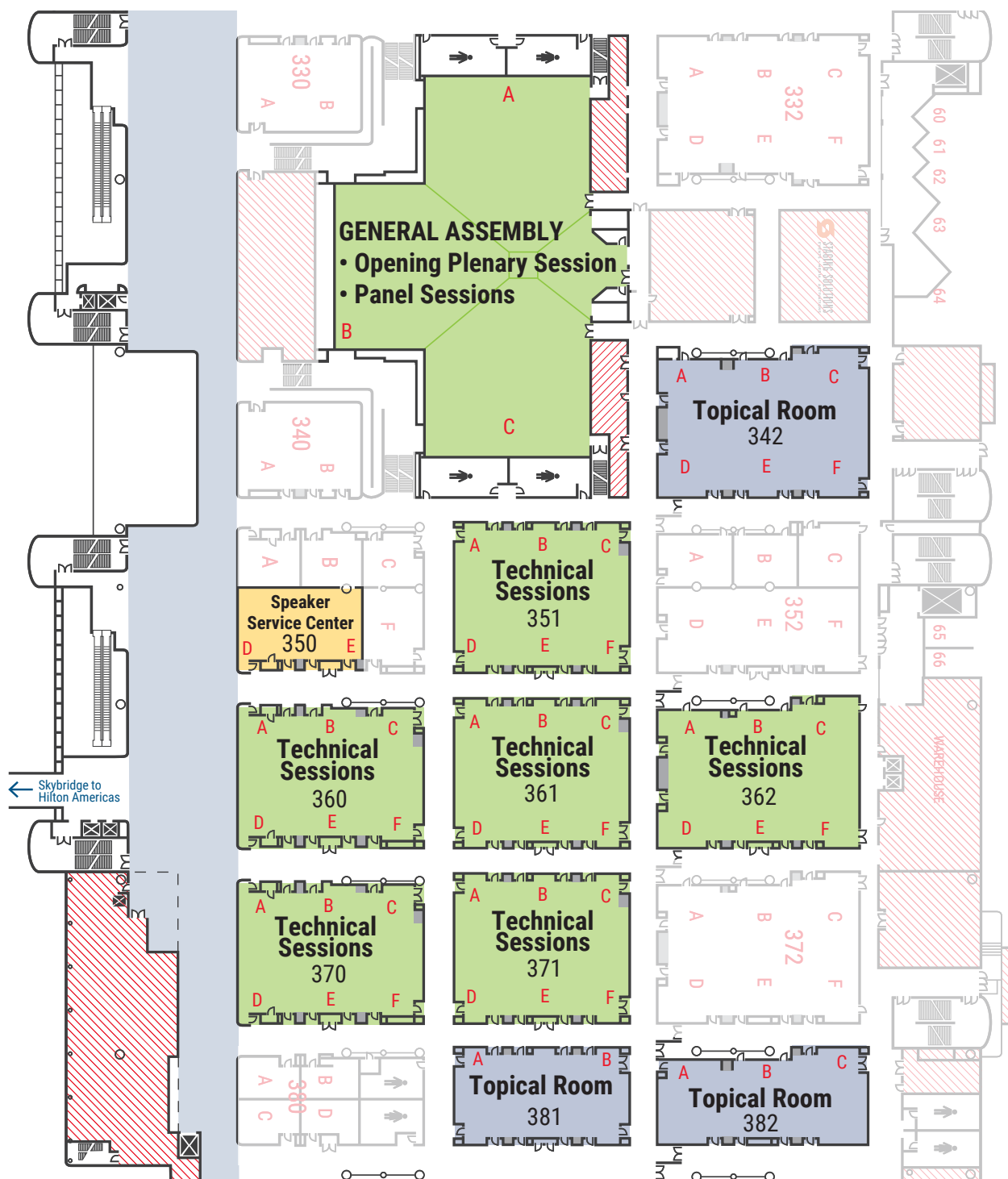


Registration

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Entrance

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Visit the Core Exhibits, sponsored by Core Laboratories in the Exhibit Hall (#5121) to see core samples from around North America and discover the true variability of these tight reservoirs.

Core evaluation has undergone a rebirth over the last decade thanks to unconventional plays both in North America and globally, which has necessitated a back-to-the-rocks approach to reservoir analysis. Core evaluation continues to be a fundamental component of reservoir characterization during the exploration phase and, with recent advances, has become crucial in ongoing development as we continue to push the technological envelope to increase EURs via Enhanced Oil Recovery mechanisms in these unconventional reservoirs. Presentations and materials displaying the analytical methods and raw data will help provide a better understanding of the sedimentology, petrology, and reservoir characterization.

Core samples at this year's URTeC may include:

- Wolfcamp (Delaware and Midland)
- Woodford Permian
- Eagle Ford
- Avalon Shale
- Bone Spring
- Utica
- Haynesville
- Austin Chalk



BEST OF URTeC 2020 TECHNICAL AWARD WINNERS

- **Panagiotis Dalamaranis, Seismos Inc.**
Real-Time Hydraulic Fracture Optimization Based on the Integration of Fracture Diagnostics and Reservoir Geomechanics
- **Yongshe Liu, ConocoPhillips**
Bakken Infill Pilot Analysis and Modeling: Characterizing Unconventional Reservoir Potentials
- **Hongjie Xiong, University Lands**
Identify Optimal Wellbore Landing Zones in the Wolfcamp Formation – The Southern Midland Basin Case Study
- **Kevin Raterman, ConocoPhillips**
Analysis of a Multi-Well Eagle Ford Pilot
- **Tanya Inks, IS Interpretation Services, Inc.**
Validation of Fracture Height and Density from Rapid Time-Lapse DAS VSP for use in Calculating Stimulated Rock Volume: A Case Study from Hereford Field, Colorado
- **Benedek Gal, ConocoPhillips**
Using Fluid Inclusion Salinity Data to Reduce Uncertainty in Petrophysical Calculation – New Application of an Old Technique in Unconventional Reservoirs
- **Hao Xiong, University of Oklahoma**
Insights into Salinity Variations for Waterfloods, Frac-Fluids and Drilling Mud in Clay-Hosted Pores using Molecular Simulations
- **Shehab Alzobaidi, ExxonMobil**
Wettability of Permian Rocks and Implications on Relative Permeability and Reservoir Modeling
- **Marianne Rauch, TGS**
Enhancing PSDM via Well Data Derived from Gradient Boosted Trees Machine Learning
- **Andrew Munoz, Ensign Natural Resources**
Unlocking Value from Vintage Seismic Processing - Pre-Stack Conditioning and Inversion in the Eagle Ford Shale
- **Ted Cross, Novi Labs**
GeoSHAP: A Novel Method of Deriving Rock Quality Index from Machine Learning Models and Principal Components Analysis
- **Abhijit Mitra, MetaRock Laboratories**
A Coupled Laboratory Measurement – Machine Learning Workflow to Predict Elastic Anisotropy by Lithotype in Shale
- **Rob Bohn, SPE**
Diagnosing Fracture Stimulation Effectiveness: A Case Study of the Marcellus Shale Energy and Environmental Lab (MSEEL)
- **Yanli Pei, The University of Texas at Austin**
The Influence of Development Target Depletion on Stress Evolution and Well Completion of Upside Target in the Permian Basin
- **Hui Long, Conocophillips**
Integrating Oil and Water Geochemistry to Assess SRV and DRV in the Bakken/Three Forks Hybrid Play
- **Brett Wittman, Grayson Mill Energy**
Integration of Geochemical and Petrophysical Measurements from Drill Cuttings for Unconventional Reservoir Characterization, Converse County, Powder River Basin
- **Adam Jew, SLAC National Accelerator Laboratory**
Strontium Behavior in Midland Basin Unconventional Reservoirs: The Importance of Base Fluids
- **Hector Klie, DeepCast.ai**
Transfer Learning for Scalable Optimization of Unconventional Field Operations
- **Alireza Shahkarami, Baker Hughes**
A Data-Driven Workflow and Case Study for Optimizing Shut in Strategies of Adjacent Wells During Multi-Stage Hydraulic Fracturing Operations
- **Marshal Wigwe, Texas Tech University**
Spatio-Temporal Models for Big Data and Applications on Unconventional Production Evaluation
- **Kirill Simonov, Skolkovo Institute of Science and Technology (Skoltech)**
Machine-Learning-Assisted Segmentation of FIB-SEM Images with Artifacts for Improved of Pore Space Characterization of Tight Reservoir Rocks
- **Jaeyoung Park, Texas A&M University**
Hybrid Physics and Data-Driven Modeling for Unconventional Field Development - Onshore US Basin Case Study
- **Jessica Iriarte, Well Data Labs**
Historic Frac Design Evaluation Made Easy: Automating Pumping Schedule Recognition from Hydraulic Fracturing Time Series Data
- **Mikhail Litvak, Hess Corp.**
Successful Field Test of Enhancing Bakken Oil Recovery with Propane Injection Part II. Development and Application of Innovative Simulation Technology
- **Narayana Nagarajan, Hess Corp.**
Successful Field Test of Enhancing Bakken Oil Recovery with Propane Injection Part I. Field Test Planning, Operations, Surveillance, and Results
- **Yang Zhao, Missouri University of Science and Technology**
Performance of Low Salinity Polymer Flood in Enhancing Heavy Oil Recovery on the Alaska North Slope
- **Colleen Barton, Baker Hughes**
Integrated Multi-Disciplinary Approach to Predict Reservoir Performance: The Diyab Reservoir Abu Dhabi
- **David Cotrell, Baker Hughes**
Profit Optimization from Fracture Design and Production Estimates
- **Dicman Alfred, Scala Energy LLC**
A New Methodology to Determine Well Spacing in Unconventional Reservoirs – Delaware Basin Case Study
- **Jiazheng Qin, The University of Texas at Austin**
Assessment of Complex Fracture Networks Effect on Rate Transient Behavior Using Embedded Discrete Fracture Model
- **Boxiao Li, Chevron Energy Technology Company**
Significant Error Reduction in Machine-Learning Decline Curve Analysis for Unconventional Reservoirs
- **Tanhee Galindo, GeoKimika Oil & Gas**
Optimizing Fluid Compatibility in Produced Waters
- **Mark Van Domelen, Downhole Chemical Solutions**
Performance of Friction Reducers in Iron-Rich Environments
- **Austin Wells, Arnco Technology**
Workstring Tubing: The New Drill Pipe (and How to Protect It)
- **Jarvis Moore, Black Mountain Oil and Gas**
The Canning Basin of Western Australia, Discovering Unconventional Opportunity
- **Radu Patrascu, OMV Petrom**
First Applications of Novel Microproppant to Achieve Optimal Production and Enhance Hydraulic Fracture Treatment Placement – A Romanian Case History
- **Wei Zheng, Schlumberger**
Geo-Engineered Performance in One of the Largest Tight Oil Multi-Well Pads in Asia
- **Ted Cross, Novi Labs**
Benchmarking Operator Performance in the Williston Basin using a Predictive Machine Learning Model
- **Alexandre Ramos-Peon, Rystad Energy**
Optimal Well Spacing in all Key Areas of the Permian Basin by Landing Zone
- **Deborah Ryan, Sproule**
Where Did All the Capital Go? A Look at Full Life-Cycle Economics on Key U.S. Shale Plays
- **Ted Cross, Novi Labs**
Predicting Water Production in the Williston Basin using a Machine Learning Model
- **Nick Gianoutsos, U.S. Geological Survey**
Results of the 2019 Usgs Water and Proppant Assessment Associated with Petroleum Production from the Eagle Ford Group, Texas
- **Richard Hammack, US Dept. of Energy-National Energy Technology Laboratory**
Using Drone-Mounted Geophysical Sensors to Map Legacy Oil and Gas Infrastructure



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